

REPORT  
OF THE  
**TWENTY-FIFTH INDUSTRIAL EXPOSITION**

MECHANICS' INSTITUTE

SAN FRANCISCO.

DAVID KERR,  
PRESIDENT.







REPORT

— OF THE —

TWENTY-FIFTH

Industrial Exposition

— OF THE —

MECHANICS' INSTITUTE

— OF THE —

CITY OF SAN FRANCISCO.

Held at the Mechanics' Pavilion from the 18th day of September, to  
the 25th day of October, 1890, Inclusive.



# MECHANICS' INSTITUTE

SAN FRANCISCO, CAL.

## BOARD OF TRUSTEES, 1890.

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## STANDING COMMITTEES.

FINANCE,	-	-	-	-	STUMP, SCOTT, SCHENCK
BUILDING AND LIBRARY ROOMS,	-	-	-	-	FARQUHARSON, EWING, HENDY
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HORTICULTURE,	-	-	-	-	STARBIRD, STUMP, ECKART
SPECIAL EXHIBITS,	-	-	-	-	SCHENCK, STARBIRD, SCOTT

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REPORT OF THE BOARD OF TRUSTEES  
OF THE  
TWENTY-FIFTH  
Industrial Exposition  
OF THE  
MECHANICS' INSTITUTE, 1890.

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*To the Members of the Mechanics' Institute:*

It is with pleasure we present to you the transactions and result of the last and Twenty-fifth Industrial Exposition.

In accordance with the expressed wish of many of our citizens, the opening of the Exposition was postponed from August 19th to September 18th, in order that the Native Sons of the Golden West might have the Pavilion for the festivities and ceremonies of Admission Day which continued from September 8th to 13th inclusive. While the concession brought the Institute the good will of the Press and Native Sons, it also undoubtedly brought us a loss of several thousand dollars by lateness of the season, extra printing and the fact that very many from the country who annually plan a trip to the city during the Fair anticipated the time in favor of the pageant of Admission Day and consequently were absent from the Exposition. It is pleasant, however, to know that the action of the majority of the Trustees was generally approved by the members of the Institute, and the postponement contributed to make the celebration a memorable one. The actual profit of the Exposition as shown by the financial report is \$23,300.48, which under the circumstances is gratifying, as it has enabled the manage-

ment to pay \$20,000 on the mortgage held by the Hibernia Savings and Loan Society.

Each year seems to more fully demonstrate the value of these Expositions as an educator to the people, as the Pavilion, at that time, is a popular place of resort for the old and young, where the eye may see the best in manufacture, science and art, and the ear hear the compositions of the old and modern tone, masters rendered by the best obtainable musical talent.

The report of the various Committees, giving in detail their transactions, will be found under appropriate headings.

Our thanks are due and tendered to the Press of this city for their many and gratuitous notices of the Exposition; to exhibitors who, in many instances, at great cost, maintained an interesting display during the thirty-three days the Fair was open; and to our citizens, whose presence testified their appreciation of our efforts.

# TREASURER'S REPORT.

MECHANICS' INSTITUTE, December 20th, 1890.

To the President and Board of Managers of the Twenty-fifth Industrial Exhibition:

GENTLEMEN:—I herewith submit my report of the daily receipts at the ticket office in the Pavilion; also a detailed account of the total number of tickets sold, class of tickets, and the total receipts from that source:

## Daily Receipts at the Ticket Office.

1890.	DOUBLE SEASON TICKETS.	SINGLE SEASON TICKETS.	CHILDREN'S SEASON TICKETS.	ADULT'S SINGLE ADMISSION TICKETS.	CHILDREN'S SINGLE ADMISSION TICKETS.	AMOUNT.
September 18.....	206	48	79	165	9	\$1,377 25
“ 19.....	184	50	62	403	33	1,372 75
“ 20.....	298	71	75	866	77	2,267 75
“ 22.....	178	59	39	648	94	1,473 00
“ 23.....	100	32	28	713	118	1,024 00
“ 24.....	84	29	30	992	200	1,098 00
“ 25.....	72	19	16	984	219	987 75
“ 26.....	60	25	15	977	221	941 25
“ 27.....	83	22	20	2850	511	2,063 75
“ 29.....	29	5	7	739	79	559 75
“ 30.....	21	8	8	1059	141	705 75
October 1.....	31	7	3	1570	210	1,018 00
“ 2.....	19	3	6	1472	268	916 00
“ 3.....	10	4	2	1706	295	991 75
“ 4.....	18	4	2	3942	785	2,272 25
“ 6.....	5	6	1	1074	179	626 25
“ 7.....	9	2	1	1185	160	685 00
“ 8.....	6	1	2	1502	198	836 50
“ 9.....	4	1		1319	195	731 25
“ 10.....		1		1409	253	770 75
“ 11.....			2	3682	846	2,055 50
“ 13.....	2	3		997	140	552 50
“ 14.....				1090	157	584 25
“ 15.....	2			1540	160	820 00
“ 16.....			1	1326	168	706 50
“ 17.....				1342	251	733 75
“ 18.....				3408	665	1,870 25
“ 20.....		2	2	1064	168	583 00
“ 21.....				1140	185	616 25
“ 22.....				1382	205	742 25
“ 23.....				1701	220	905 50
“ 24.....				2167	320	1,163 50
“ 25.....			2	3405	703	1,884 25
TOTALS.	1,421	404	401	47,819	8,433	\$35,936 25

# ACCOUNT OF TICKETS SOLD.

TWENTY-FOURTH INDUSTRIAL EXHIBITION 1890.	DOUBLE SEASON \$5 00	DOUBLE SEASON TO MEMBERS \$2 50	SINGLE SEASON \$3 00	SINGLE SEASON TO MEMBERS \$1 50.	CHILD'S SEASON \$1 50	ADULT SINGLE ADMISSION 50 cts.	CHILDREN SINGLE ADMISSION 25 cts.	ADULT EXCURSION 25 cts.	CHILD EXCURSION 12½ cts.	AMOUNT.
Ticket Office.....	1421		404		401	49819	8433			\$35,936 25
Sold to Members by Librarian.....	103	2010	52	95						5,838 50
Outside Sales.....	433		68					1547	140	2,773 25
<b>Totals .....</b>	<b>1957</b>	<b>2010</b>	<b>524</b>	<b>95</b>	<b>401</b>	<b>49819</b>	<b>8433</b>	<b>1547</b>	<b>140</b>	<b>\$44,548 00</b>
										Less Commission paid..... 102 85
										<u>\$44,445 15</u>

## RECAPITULATION.

1,957 Double Season Tickets @ \$5 00.....	\$ 9,785 00
2,010 " " " to Members @ \$2 50.....	5,025 00
524 Single " " @ \$3 00.....	1,572 00
95 " " " to Members @ \$1 50.....	142 50
401 Children's " " @ \$1 50.....	601 50
49,819 Adult Single Admission Tickets @ 50 cts.....	24,909 50
8,433 Children's " " @ 25 cts.....	2,108 25
1,547 Adult Excursion @ 25 cts.....	386 75
140 Children's " @ 12½ cts.....	17 50
	<u>\$44,548 00</u>
Less Commission on Outside Sales.....	102 85
	<u>\$44,445 15</u>

Respectfully submitted,

A. W. STARBIRD, Treasurer.

# Report of Finance Committee.

## EXPENDITURES.

### ADVERTISING—

Abend Post.....	\$ 10 00
Alta.....	124 00
A Unio Portugueza.....	5 00
Argonaut.....	10 00
Bulletin... ..	134 70
Call.....	190 65
California Demokrat... ..	15 00
California Illustrated World.....	7 50
California Journal... ..	5 00
California Voice.....	5 00
Carrier Dove.....	5 00
Christian Advocate.....	3 00
Chronicle.....	218 05
City Argus.....	5 00
Commercial Record.....	5 00
Daily Report.....	98 25
De Troost & Co.....	18 00
Dunphy, T. N. & Co. (Bill Posting) ... ..	100 00
Ecce Accoriano... ..	5 00
Elevator.....	5 00
Examiner (\$63 00, old account).....	236 60
Figaro.....	15 00
Golden Gate.....	5 00
Golden State.....	3 00
Hayes Valley Advertiser.....	5 00
Hebrew.....	5 00
Herald of Trade.....	5 00
Horn Hong (Chinese Paper and Circulars).....	11 00
Hotel Gazette.....	25 00
Jewish Progress.....	5 00
Jewish Times and Observer.....	5 00
Journal of Commerce... ..	45 00
L'Elvezia.....	5 00
L'Italia.....	10 00
<i>Carried forward.....</i>	<u>\$1,349 75</u>

## TWENTY-FIFTH INDUSTRIAL EXHIBITION.

<i>Brought forward</i> .....	\$1,349 75
La Republica .....	5 00
La Voce del Popolo.....	10 00
Law Journal.....	10 00
Leader.....	3 00
Le Franco-Californien .....	15 00
Mirror.....	8 00
Mining and Scientific Press.....	10 00
Mission Journal.....	4 00
Monitor.....	5 00
Morning Times (Oakland) .....	35 00
News Letter.....	10 00
Oakland Enquirer.....	20 00
Oakland Evening Tribune .....	35 00
Occident.....	3 00
Official Park Programme. ....	5 00
Overland Monthly.....	6 00
Pacific.....	3 00
Pacific Churchman.....	3 00
Pacific Coast Journal.....	5 00
Pacific Pilot.....	5 00
Pacific Union Publishing Co.....	5 00
Post.....	128 00
Political Record.....	5 00
Public Opinion. ....	5 00
Railway Guide.....	5 00
Railway Publishing Co. ....	10 00
Record of Amusements .....	7 00
Resources of California... ..	10 00
Rural Press .....	10 00
Theatrical Publishing Co.....	16 00
Truth.....	3 00
Vestkusten .....	4 00
Vindicator .....	5 00
Wasp .....	10 00
Wave.....	10 00
Weekly Star.....	5 00
West End.....	3 00
Wine and Spirit Review.....	5 00
Wood & Iron.....	5 00

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 \$1,800 75

FINANCIAL REPORT.

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ART DEPARTMENT—

Catten, Bell & Co., Insurance .....	\$ 26 25
Cohen, Habakkuk, Cartage.....	12 00
Conrad & Maxwell, Insurance.....	42 10
Corrinson, Isaac, Draping Picture. . . . .	3 50
Ginsto, I., Cartage... ..	2 50
Guardian Assurance Co., Insurance.....	55 40
Helvetia Swiss Insurance Co., Insurance.....	47 25
Immediate Delivery Co., Cartage. . . . .	69 00
Lachman, Chas., Hardware.....	14 00
Manheim, Dibbern & Co., Insurance.....	14 70
Martin, J. R., Salary as Sup't and Petty Cash..	266 60
New Zealand Insurance Co., Insurance.....	49 00
Orient Insurance Co., Insurance .....	49 00
Salaries, Laborers and Helpers....	125 25
Sanborn, Vail & Co., Repairing Frame.....	3 65
Southern California Insurance Co., Insurance..	10 50

\$790 70

BUILDING—

California Pottery Co., Pipe and Cement.....	\$ 9 02
Central Lumber Co., Lumber.....	95 82
Cully, John P., Plumbing, etc.....	3 00
Joost Bros., Hardware.....	9 22
McPherson, Samuel, Painting.....	15 75
Salaries, Carpenters and Laborers .....	182 00

\$355 01

COMMISSION—

On Sales of Tickets at Stores and Offices.....	\$102 85
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\$102 85

DECORATION—

Strauss, Levi, & Co., Cloth.....	\$48 04
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\$48 04

EXPENSE—

Ames, Parker & Co., Rubber Stamps .....	\$ 12 75
Assistant Secretary, Petty Expenses .....	30 10
Atlantic Brush Co., Brooms and Brushes .....	25 50
Baldwin Theatre, Rent, Opening Exercises....	127 00
Biconso Bynkershoek, Cartage.....	28 00
California Electrical Works, Repairing Batteries, etc.....	25 35
Diebold, Kenzie & Co., Repairing Lock (Vault)	3 00
Dunham, Carrigan & Hayden Co., Hardware ..	2 11
Edison General Electric Co., Tower of Light...	1017 50
Gurney Cab Co., Service for Miss Lennon, Vocalist.....	33 00
Joost Bros., Chair Bottoms, etc.. . . . .	1 50

Carried forward.....\$1,305 81

TWENTY-FIFTH INDUSTRIAL EXHIBITION.

<i>Brought forward</i> .....	\$1305 81
Keightley, W. J., Counting Tickets.....	6 00
Martin, W. H., Refreshments to Jurors.....	29 50
McPherson, S., Painting Signs.....	15 50
Miller and Co., Rent of Show Cases.....	30 00
Montague, W. W. & Co., Drinking Cups.....	3 37
Murray, W. H., Expense on Ramie Machine...	30 00
Newman Athamantrades, Saw Dust.....	12 00
Pacific Bell Telephone, Rent and Service.....	48 75
Payot, Upham & Co., Rubber Bands and Ex- pressage.....	2 50
Pouyal, Jeroboam, Plants and Flowers for Gar- dens.....	170 00
Seivers, J. H., Flowers, Opening Exercises. ...	4 00
Small, I. H., Injury to his Exhibit.....	5 00
Sundry Small Bills.....	24 90
Tweedale, T. S., Petty Cash.....	18 80
United Carriage Co., Service, Opening Exercises.	4 00
Weichhart, J., Repairing Ticket Punches.....	17 00
Wells, F. Marion, Cartage on "Marshall Statue"	8 00

\$1,735 13

**LIGHTING—**

California Electric Light Co., Electric Light....	\$575 35
Cully, John P., Gas Fitting and Material.....	84 67
Pacific Gas Improvement Co., 1,071,600 feet Gas @ \$1.80 per M.....	1928 88
Salaries, Gas-fitters, Helpers and Laborers.....	310 63

\$2,899 53

**MACHINERY—**

Allen, Charles R., 33. <sup>1330</sup> Tons Sydney Coal @ \$12.00.....	\$403 10
1. <sup>340</sup> Tons Screening @ \$5.00.....	5 75
	\$408 85
Black Diamond Coal Co., 31. <sup>1760</sup> Tons Green River Coal @ \$7.50... ..	\$235 40
60. <sup>1870</sup> Tons Green River Coal @ \$8.00..	486 70
	\$725 10
Dow Steam Pump Works, Hot Water Valve....	3 60
Dunham, Carrigan & Hayden Co., Machine Fittings and Supplies.....	34 83
Garratt, Wm. T. & Co., Oiler.. ..	2 10
Johnson, C. B. & Co., Covering Steam Pipe....	27 00
McPherson, Samuel, Painting Engine.....	17 50

\$1,218 98



FINANCIAL REPORT.

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MUSIC—

Charles H. Casassa, Forty Musicians, 33 days... \$7,500

PREMIUMS—

Britton & Rey, Diplomas.....\$ 80 00  
 Bryant, M. B. & Co., Medals..... 570 00  
 California Jewelry Co., Medals and Engraving. 1,151 60  
 Cash Awards, Art Department..... 800 00  
 Cash Award, Minerals..... 25 00  
 Muhs, A., Medal Boxes..... 107 00  
 Southern, T. R., Engrossing Diplomas..... 25 00

\$2,758 60

PRINTING—

Allen, Susan, Numbers for Cloak Room.....\$ 5 00  
 Crocker, H. S. & Co., Art Catalogues and Posters. 337 50  
 Cubery & Co., Invitation Programmes..... 26 00  
 Eastman, Frank & Co., Receipt Books..... 6 50  
 Galloway, Letter Heads..... 16 00  
 Murdock, C. A. & Co., Circulars, Numbers, etc. 55 75  
 Phillips, T. K. & Co., Book of Applications.... 5 75  
 Spaulding, Geo. & Co., Orders, Circulars,  
 Tickets, etc..... 163 25  
 Sterrett, B. F., Tags, Notices and Cards..... 20 50  
 Thomas, P. J., Circulars, Preliminary Announce-  
 ment and Premium List, and Report..... 430 50  
 Winterburn, J., Electros..... 2 25

\$1,069 00

SALARIES—

Wages—Superintendent, Clerks, Engineer,  
 Watchmen and Laborers..... \$6,315 73

STATIONERY—

Assistant Secretary, Stamps, Petty Cash, etc...\$ 90 55  
 Bancroft Company, Stationery..... 5 50  
 Cameron, Wm., Postage Stamps..... 18 50  
 Spaulding, Geo. & Co., Envelopes..... 10 50

\$125 05

WATER—

Spring Valley Water Works, Water 5½ Weeks @  
 \$100 per Week..... \$550 00

TWENTY-FIFTH INDUSTRIAL EXHIBITION.

RECAPITULATION OF EXPENSES.

Advertising.....	\$1,800 75	
Art Department.....	790 70	
Building.....	355 01	
Commission.....	102 85	
Decoration.....	48 04	
Expense.....	1,735 13	
Lighting.....	2,899 53	
Machinery.....	1,218 98	
Music.....	7,500 00	
Premiums.....	2,758 60	
Printing.....	1,069 00	
Salaries.....	6,315 73	
Stationery.....	125 05	
Water.....	550 00	
	\$27,269 37	

PROFIT AND LOSS.

REVENUE—

Sale of Tickets.....	\$44,548 00	
Sale of Privileges.....	5,692 50	
Sale of Catalogues.....	176 50	
Gas Service.....	152 85	
	\$50,569 85	

EXPENDITURES—

As above.....	\$27,269 37
Transferred to the Mechanics' Institute.....	23,300 48

Respectfully submitted,

IRWIN C. STUMP,

A. W. SCOTT,

W. T. Y. SCHENCK,

Finance Committee.

PRELIMINARY ANNOUNCEMENT.

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# Twenty-Fifth Industrial Exposition

MECHANICS' INSTITUTE, SAN FRANCISCO.

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THE Board of Trustees of the Mechanics' Institute are pleased to announce that the Twenty-fifth Industrial Exposition will open at the Pavilion on Larkin street on Thursday, September 18th, 1890, and close Saturday evening, October 25th, 1890, and respectfully solicit contributions from every Department of Invention, Industry, Art, and the Natural Resources of the Pacific Coast.

Medals of gold, silver and bronze, and a beautifully engraved diploma will be awarded to such articles as merit special distinction; and competent jurors will be selected to examine and report on the same, unless the exhibitor shall at the time of their entry give notice that they are for exhibition only.

In the Machinery Department new boilers have been erected, two large stone tanks for the use of hydraulic machinery built, and a new floor has been laid over the entire hall, making it the most complete building on the Coast for the display of all kinds of machinery in motion, for which ample power, including steam and water, will be furnished.

The entrances to the Pavilion are convenient for unloading and handling the heaviest class of goods, which can be easily placed in position.

The Art Department will have an unusually attractive collection of oil and water-color paintings, photography, sculpture and various other works of art.

A Musical Programme will be rendered each afternoon and evening by fifty of the most talented performers in the country, and will number among its members some of the leading soloists of the day.

The Pavilion will be newly and handsomely decorated, at night brilliantly illuminated with gas and electricity, and the comfort and convenience of visitors will be the especial care of the Management.

Inventors, Manufacturers and Exhibitors of all classes will find this the best opportunity that could be devised for introducing their improvements or goods to the public.

There is no longer any doubt of the value and advantages of these Expositions to manufacturers, dealers and the City and State at large, as they disseminate information, and disclose to visitors the progress of invention, manufacture and natural products.

During the season in which the Exposition is held, the city is thronged with visitors from all parts of the world, who naturally will take advantage of the occasion to see and judge for themselves what the Pacific Coast is doing in the way of advancement.

You are earnestly requested to give personal attention to this matter, as the Managers are anxious to have an exhibit from you this year. It will not only be of personal benefit, but will tend to enlighten and extend practical knowledge to the people, and thereby benefit the State and community.

A carefully prepared Premium List, with the Rules and Regulations, will be ready for distribution in a few days.

Any desired information will be promptly sent or given on application to the Secretary.

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## BOARD OF MANAGEMENT.

DAVID KERR, President.

A. W. STARBIRD, Treasurer.

GEO. E. DOW,

W. R. ECKART,

ROBERT EWING,

DAVID FARQUHARSON,

J. K. FIRTH,

IRWIN C. STUMP, Vice-President.

C. F. BASSETT, Rec. Secretary.

S. F. HENDY, Cor. Secretary.

GEO. H. HOPPS,

JOHN MALLON,

W. T. Y. SCHENCK,

A. W. SCOTT.

J. H. CULVER, Secretary.

## RULES AND REGULATIONS

OF THE

# Twenty-Fifth Industrial Exhibition.

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### RULE I.

THE Pavilion will be opened for the reception of goods on and after Friday, September 12th.

The exhibition will open to the public on Thursday, September 18th, and continue open from day to day (Sundays excepted) until Saturday, October 25th. Hours of admission will be from 10 A. M. to 5 P. M., and 7½ to 10½ P. M., except Saturdays, when the exhibition will close at 11 P. M.

### RULE II.

Articles can be entered for exhibition or competition, as desired.

If entered for competition, the articles must be in position and receipted for and the entry tag attached not later than Saturday, September 20th, excepting exhibits of fresh fruits and vegetables, not in season at the time of opening, or additions to varieties already on exhibition.

Articles intended by the exhibitor for competition, but not entered and in position by the time specified, to wit: September 20th, shall not under any circumstances be allowed to compete.

### RULE III.

The driving engine will be in operation three days previous to the opening, and exhibitors of machinery in motion will be required to have their machines in running order on the opening day.

## RULE IV.

Machinery entered for competition and requiring power must be in position and in operation on or before September 20th.

Shafting, Belts, Gearing, High Speed Machinery and any other exhibits likely to prove dangerous, must be securely fenced and protected to the satisfaction of the Board of Trustees; but such approval shall not relieve the exhibitor from his own liability.

## RULE V.

No charge of any kind will be made to exhibitors for space. Steam and water will also be furnished free, in reasonable quantities; but all platforms, counters, ornamental partitions, show cases and fixtures must be erected at the expense of the exhibitors. Exhibitors and holders of Privileges will be required to pay for all gas consumed by them for cooking or heating purposes, and also for all extra light more than that furnished for the general lighting of the building.

## RULE VI.

Applications for space can be made at any time, and should be made as early as possible, and at least two weeks previous to the opening of the Exhibition.

Blank forms of application for space will be furnished by the Secretary.

Space will be awarded as early as practicable after the application has been received.

Space allotted to applicants, and not taken possession of by the arrival of their goods, on or before Monday, September 15th, may be assigned to other exhibitors.

The Board of Trustees reserve the right at any time to exclude from the Exhibition such things as nostrums, articles of an explosive, inflammable, dangerous or offensive character, and all things they may for any cause deem objectionable.

Any exhibit of goods, which, in the opinion of the Board of

Trustees, is of an improper or objectional character, may at the option of said Trustees, be removed at any time.

The Board of Trustees reserve the right to refuse admission to any exhibitor or employee whom they may consider an improper person, or for other cause; and also to remove the goods of such exhibitor from the building.

#### RULE VII.

Exhibitors will receive from the entry clerk, on the arrival of their goods, a receipt for the same, which must be presented for their delivery at the close of the Exhibition. Articles entered for exhibition or competition will be so designated in the receipt.

#### RULE VIII.

The Board of Trustees will endeavor to select competent and disinterested Jurors of Award.

Articles entered only for exhibition shall be designated by a tag attached and so reported by the jurors, and appear in the report of the Exhibition.

In all cases where a gold medal has been awarded for the best general display, the articles comprising the same shall be debarred from competing for any other premium; but exhibitors may elect to waive a sweepstake premium, taking in lieu thereof the awards as set forth in the Premium List.

Jurors may refuse to award any premium when articles fall below a reasonable standard of excellence.

In every case where the Jurors have reached a decision, they shall file with the Secretary a report, giving the name of the exhibitors, the article examined, and the number of the class in which it is entered.

No award for second degree of merit will be made, or so reported, unless specially provided for in the Premium List.

In cases where it is not practicable for jurors to test or examine machines in the building, or where models only are exhibited, they may go outside the buildings to make such examination or test; but the jurors must first procure from the Board of Trus-

tees a written consent, which must be attached to their award when filed with the Secretary, and the competitors must take upon themselves, in exoneration of the Institute or Board of Trustees, all claims in respect of damage (if any) resulting from the testings, and must renounce all claims for compensation for any injuries, real or imaginary, that they may incur from actual or alleged imperfections in the arrangements or in the testing, or from any statements in the reports or descriptions published.

Jurors in each class will hold a meeting before making their final report, at which time exhibitors in the class may be invited to attend and explain the merits of their respective exhibits, under such rules as may be prescribed by the committee on Rules, Regulations and Awards.

Should any juror, for any reason, at any time become incapacitated from serving, the Board shall select another juror.

All awards and recommendations of Jurors must be submitted to the Board of Trustees on or before October 18th, and receive their approval before being final.

The Board of Trustees reserve to themselves the right to amend, rescind or reject the report of any Committee of Awards.

#### RULE IX.

The announcement of awards will be made by the Board of Trustees on Tuesday, October 21st.

#### RULE X.

Power will be furnished for driving machinery from the main lines of shafting, which are 2 15-16 inches in diameter, and will make about 110 revolutions per minute. Driving pulleys, 30 inches in diameter, are now on the shafting for use of exhibitors. Pulleys for the main line, if furnished by exhibitors, must be accurately balanced, and have the owner's name plainly marked thereon, and should be received and placed in position by Monday, September 8th, as, up to that time, it can be done without unnecessary labor and inconvenience.



## RULE XI.

No article on exhibition or within the building can be removed until the close of the Fair, unless by permission of the Board of Trustees or Superintendent, in writing; but reasonable facilities for making sales of articles, for delivery at the close of the Exhibition, will be afforded.

Exhibitor's cards, circulars and samples can only be placed within their own space for distribution, and visitors must not be solicited to receive them.

No lottery or gift enterprise of any kind will be allowed, nor shall visitors be solicited for names or signatures when the purpose is to award a consideration by chance.

Holders of Privileges shall have the exclusive right to sell the article they purchase the Privilege for; but in no case shall it be construed that their purchased right debars any exhibitor from giving away in quantities, to be determined by the Board of Trustees, samples of articles he may manufacture in the Pavilion or place on exhibition.

Exhibitors will be required to keep their spaces and exhibits clean and in good order, and, in cases where they are covered at night, to remove such covering by 11 o'clock, A. M., and not to cover the same earlier than ten minutes before the closing hour.

## RULE XII.

The most careful means will be taken, through the agency of the police and otherwise, to guard and protect the property on exhibition, and it will be the purpose of the Trustees to return all articles to the owners without loss or injury; but as the Fair is for the benefit of the general public, and particularly for the business benefit of the exhibitors, and to add to the reputation of their wares, the Mechanics' Institute and its Trustees will, under no circumstance, be responsible for any loss or injury to articles placed on exhibition, which must be invariably at *owner's risk*.

## RULE XIII.

In order to preserve the general harmony of the Exhibition and make the display of goods attractive, the Board of Trustees reserve the right to direct the general arrangement of the articles on exhibition, and to regulate the character of all signs and advertisements.

Partitions may be erected in various parts of the building, but in no case more than four feet in height, except on the sides and ends of the gallery. Exhibitors' signs shall not be more than eight inches in width, and placed not less than eight nor more than nine feet from the floor, except on the walls of the building; and, under no circumstances, will cloth or paper signs be allowed higher than partitions, to wit: four feet.

Exhibitors will be allowed to give away a limited amount of samples of any article on exhibition by them, such quantity to be determined by the Board of Trustees. This permission, however, shall not apply to the giving away of intoxicating beverages.

## RULE XIV.

Employees' tickets will be issued without charge to such persons only as are in the employ of exhibitors who, in the opinion of the Committee on Privileges, require the services of an attendant, and are not transferable.

If transferred or loaned to any other person than the owner, the ticket becomes forfeited, and doorkeepers will be instructed to refuse admission and retain the ticket.

Employees' tickets found to be unnecessary for the purpose for which they were issued must be returned to the Committee on Privileges.

Any ticket presented at the door for admission in violation of rules thereon shall be forfeited.

## RULE XV.

All boxes and packages containing articles for the Exhibition should be marked "Twenty-fifth Industrial Exhibition, San

Francisco," with the name and address of the sender. If the freight thereon is paid, it will be taken charge of by the Board of Trustees and removed to the Exhibition building. Cartage at the expense of the Exhibitor. A detailed statement of each box or package should be inclosed with the same, or sent separately, by mail or express.

#### RULE XVI.

The Board of Trustees do not consider the Premium List herewith appended as complete, nor are articles entitled to premiums limited to the ones here enumerated; but any meritorious article on exhibition, not herein mentioned, will receive due consideration from the jurors.

#### RULE XVII.

The Board of Trustees shall have the right at any time to modify or change these rules, or any of them, or make such others as necessity and propriety may demand, or which in their judgment will be to the best interest of the Institute.

# CLASSIFICATION OF EXHIBITS.

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CLASS 1.

Engines, Boilers and Appliances.

CLASS 2.

Hydraulic Machinery and Steam Pumps.

CLASS 3.

Machinists' Tools and Metal-working Machinery.

CLASS 4.

Wood-working Machinery.

CLASS 5.

Miscellaneous Machinery.

CLASS 6.

Mining Machinery and Appliances.

CLASS 7.

Laundry Machinery.

CLASS 8.

Fire Apparatus and Appliances.

CLASS 9.

Marine.

CLASS 10.

Sewing Machines, Braiding Machines, Knitting Machines and Looms.

CLASS 11.

Agricultural Machinery.

CLASS 12.

Iron, Steel and Lead.

CLASS 13.

Cooking, Heating and Ventilating.

CLASS 14.

Hardware, Cutlery, Firearms, etc.

## CLASS 15.

Fire and Burglar-proof Safes and Locks.

## CLASS 16.

Brass Work, Gas and Lamp Fixtures, Plumbers' Goods, etc.

## CLASS 17.

Grates and Mantles, Marbles, Artificial Stone, Earthenware, Glassware, etc.

## CLASS 18.

Carpenters', Joiners' and Stairbuilders' Work, Ornamental Glass Painting, etc.

## CLASS 19.

Musical Instruments.

## CLASS 20.

Vehicles and Accessories.

## CLASS 21.

Furniture, Upholstery, etc.

## CLASS 22.

Billiard Tables and Gymnastic Apparatus.

## CLASS 23.

Wooden-ware, Willow-ware, Wire Goods, etc.

## CLASS 24.

Boots, Shoes, Leather, Rubber Goods, etc.

## CLASS 25.

Hemp, Cordage, Paper, Furs, Silk, Hair, etc.

## CLASS 26.

Woolen Goods, etc.

## CLASS 27.

Gentlemen's Furnishing Goods.

## CLASS 28.

Ladies' Furnishing Goods, Millinery, etc.

## CLASS 29.

Electricity and Electrical Appliances.

## CLASS 30.

Scientific Apparatus, etc.

## CLASS 31.

Surgical and Dental Instruments and Appliances,

## CLASS 32.

Gold, Silver-plated Ware, Watches, Clocks, Jewelry and Bronzes.

## CLASS 33.

Printing, Lithography, etc.

## CLASS 34.

Hairwork, Needlework, Embroidery, Shellwork, etc.

## CLASS 35.

Paintings in Oil and Water Colors.

## CLASS 36.

Ceramics, Art.

## CLASS 37.

Sculpture, Statuary and Carving.

## CLASS 38.

Engravings, Penmanship, Drawings, etc.

## CLASS 39.

Photography.

## CLASS 40.

Chemical and Pharmaceutical Products.

## CLASS 41.

Groceries, Flour, etc.

## CLASS 42.

Wines and Brandies.

## CLASS 43.

Fermented Products.

## CLASS 44.

Tobacco.

## CLASS 45.

Geology, Mineralogy, Botany, etc.

## CLASS 46.

Farm and Dairy Products, Honey, Meats, Wool and Cotton.

# The Opening Exercises.

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THE Inaugural Exercises of the 25th Industrial Exposition took place at the Baldwin Theatre, on the afternoon of Thursday, September 18th, before a crowded house of members and friends of the Institute.

The Committee on Literary Exercises, Messrs. Dow, Bassett and Hopps, attended to all matters pertaining to the event, and the following attractive programme was prepared for the occasion:

Grand Overture, "Oberon,"—*Weber*....First Infantry Reg't Band, N. G. C.  
 Prayer, - - - - - Rev. J. Sanders Reed  
 Introductory Remarks by the President, - - - - - David Kerr  
 Aria, "Ah! s'estinto ancor mi vuci,"—*Mercadante*. - - Miss Mathilde Lennon  
 Grand Operatic Selection, "Faust," - - - - - *Gounod*  
 (Solos for Clarionet, Cornet, Euphonium, Horn and Trombone.)  
 Poem, "Story of the Ship,"—*Julia Clinton Jones* - - - Prof. W. T. Rose  
 Cornet Solo, "Non é Ver,"—*Mattei*. - - - - - Miss Pearl Noble  
 Oration - - - - - Geo. H. Maxwell  
 March, "Inaugural."—*Chas. H. Casassa*. - - - - - The Band

Seated upon the stage were President David Kerr, A. W. Starbird, S. J. Henry, George Hopps, George E. Dow, Horace Wilson, Professor Ross, Rev. J. Sanders Reed, George Maxwell and J. K. Firth, After an overtnre from Weber by the First Regiment Band Rev. J. Sanders Reed offered a prayer for the defense and increase of California's industries and the peace and better understanding of all mankind. President David Kerr then formally opened the Exposition by extending to the audience a cordial welcome, who listened with interest to the following:

## THE PRESIDENT'S ADDRESS.

LADIES AND GENTLEMEN, MEMBERS OF THE MECHANICS' INSTITUTE:—A few days ago our city was decked in its gayest attire to receive and welcome the Pioneers and the Native Sons and Daughters of the Golden West, who came here from the mountains and valleys, from every city and village within the broad domain of our State, to unite in celebrating the fortieth anniversary of the admission of California into the Union.

The gentlemen who originated and so ably organized and directed this grand celebration may justly feel proud of their success; and we, as citizens

who are either too young to be a Pioneer or too old to be a Native Son or Daughter, cannot help expressing our praise and admiration of those who so faithfully carried out the patriotic display of last week.

But that celebration is already of the past, and you are here to-day by invitation of the Mechanics' Institute to participate in the exercises which shall open to the public our Twenty-fifth Industrial Exhibition; and, on behalf of the Mechanics' Institute, I bid you all a cordial welcome.

In the period whose fortieth anniversary has just been so proudly observed our State has grown steadily in population and wealth. Within its borders everywhere prosperity and happiness attend industry and effort. With the wonderful advantages which this fortunate section of our land enjoys—a summer untroubled by storms, a winter unmixed with frosts and cold—we should fail in enterprise and ordinary accomplishment of duty, did not our exhibition present to you an array of products, mechanical and artistic, as well as specimens of natural products that grows in astonishing abundance, and includes the fruits of all climates, from the apples and grains of the north to the lemons, oranges and figs of the tropics.

All these will be shown, wrought from the wilderness in a single generation.

It is my pleasure to assure you of the continued prosperity of the Mechanics' Institute.

Its membership steadily increases, and at the close of this Fair we believe will be several hundred in excess of 4,000. The advantages of our library of 53,000 volumes is becoming more and more recognized, as over 12,000 books are now drawn from its shelves each month for use in the homes of our members.

Our evening classes are better appreciated each succeeding term, and the time is close at hand when the Mechanics' Institute will have become the educational Institute outlined in the plan of its founders.

It is probable that a most interesting feature of our twenty-fifth exhibition will be the accepted plans of a new building for the future home of our Institute.

In conclusion, and on behalf of the Board of Trustees of the Mechanics' Institute, I beg to invite strangers and others to visit the reading-room and library of the Society, on Post street, where at any time they will be welcome; and we also trust that all may find their visits to the Twenty-fifth Industrial Exhibition agreeable and instructive, and, after it is closed, its remembrance may occupy a pleasant corner in their memory.

Miss Mathilde Lennon then rendered an aria from "Mercadante," "Ah! s'estinto ancor mi vuoi," and, in response to an encore, gave Tosti's beautiful "Good-bye." The band then gave selections from Gounod's "Faust." Professor Ross followed with the rendition of Julia Clinton Jones' "Story of the Ship," written in honor of Irving M. Scott at the completion of the cruiser "Charleston." The introduction to the poem was given in the following lines:



Under and over, with restless speed,  
 The River of Life rolls on;  
 Ebbing and swelling with careless heed,  
 Till the Ocean of Death is won;  
 Till the ripples of Life, in close embrace,  
 With the billows of Death shall interlace;  
 And each bark of Earth, with a soul for freight,  
 Is borne by those waves to the Golden Gate.

## THE STORY OF THE SHIP.

O first great Builder ! Prototype of old,  
 Mechanic wise, who wrought the heaven-drawn plan  
 Of that primeval vessel—earliest mold  
 Of sailing things; framed for the use of man  
 When Nature, trembling at Creation's doom,  
 Sank shuddering in the seething seas that swept  
 When firmaments were opened, while deep gloom  
 The ruined world engulfed. Jehovah kept  
 His Ark within the hollow of His Hand  
 That so Noah's seed might populate the land.

Since that first boat, a myriad ships have sped,  
 And nations' argosies have plowed the waves;  
 Phœnician, Persian armaments have led  
 In van of glorious conquest. Manned by slaves  
 The far-famed Tyrian triremes bent their oars  
 For distant commerce. Egypt rose—and Greece—  
 And launched their galleys. While from Colchian shores,  
 To lure the heroes, shone the Golden Fleece.  
 With prow advanced, with unabated zest,  
 Through Gadés' Strait to Islands of the Blest,

They pushed their way. Calpé's herculean wall  
 Opened from Abyla to speed them through.  
 From Isles of Tin, with treasures culled from Gaul,  
 They heaped their home-bound vessels. So to new  
 Adventures hasted. From far Euxine coasts  
 To Indus' tide, the nations' navies swept.  
 The fleets of Solomon, great Hiram's hosts  
 Of mighty ships, and Persia's millions leapt,  
 With eager prows and swiftly bending oars,  
 To seek in war or peace far distant shores.

With commerce, empire. Thus Byzantium rose,  
 In rapid barks from Greece, Massilia came.  
 Borne by Æneas, fleeing from his foes,  
 Lavinium sprang to life from Trojan flame.  
 Then Magna Græca grew. Domains increased.  
 Taught by Chaldea, men of Araby,  
 And captains, bringing vessels from the East,  
 The merchant convoys of the Middle Sea,  
 Led by Polaris, tracked the ocean wide,  
 His star their only compass and their guide.

Battle their pastime. Lo! in dauntless pride,  
 Thro' foaming billows raged the thund'rous fray  
 Where sons of Pelops braved th' Ægean tide,  
 Or wreaked their fury on Heraclidæ.  
 There Xerxes hurled his fleets on Attic coast,  
 And dashed his galleys on Saronic seas,  
 To weep, at Salamis, his shattered host  
 Crushed by the valor of Themistocles.  
 So fierce ambitions strove, and greed of gain,  
 Launched all Earth's navies on the angry main.

The Carthaginian ships, their brazen beaks  
 Pushed fiercely forth, defiant, cleft the waves;  
 Illyrian corsairs, lion-headed peaks  
 Of Egypt triremes, urged by chainéd slaves,  
 To conflict rushed. Then Rome uprose in rage,  
 While fair Sicilia, torn by Punic strife,  
 Defended by the Syracusan sage,  
 Saw all his great inventions spring to life.  
 There Archimedes built for Egypt's shore  
 The first screw vessel that the world e'er saw.

The gilded barge of Egypt—all her host  
 Of purple sails at Actium's fatal fray;—  
 Great Cæsar's galleys, tossed on Britain's coast;—  
 The fleets barbaric, rushing on their prey;—  
 These were our models—these but led the van.  
 The nations' navies of that older time,  
 Their ships of commerce bringing wealth to man,  
 The restless daring of that earlier prime—  
 Historic now. These people ruled the wave  
 Before the Florentine his magnet gave.

Again great navies rose. The nations strove  
 For greed commercial or dominion wide.  
 Thro' furthest foam where Vikings went to rove,  
 Their mighty squadrons swept the ocean tide,  
 Then wave-born Venice, led in fourth crusade  
 By her blind Doge, became renowned in war—  
 Then the great leader, Andrea Doria, made  
 Genoa famed—e'er fought was Trafalgar—  
 Or yet had the Armada sailed in vain,  
 Or had Dutch fleets their country freed from Spain.

Full long had Ptolemaic darkness hung  
 Before the face of mediæval day;  
 Till forth the Prussian sage his system flung  
 And to old Samian laws made spheres obey.  
 These laws Columbus proved. Magellan showed  
 The earth a globe. Their vessels brought to light  
 New continents and seas. Adventure glowed;  
 And keen Discovery, compass-led, in might,  
 Set her swift sails, sent bold explorers forth  
 From southern strait, to Franklin's glacial north.

Great England's captains—admirals of Spain—  
 All Europe—launched forth keels by her commands.  
 Barks, galleons, caravels—all swept the main,  
 To seek, discover, colonize the lands.  
 Then to each new-found realm, the Jesuits bore  
 The Holy Cross in ships beyond the sea,  
 As fishers' vessel from that desert shore  
 Once bore the Nazarene on Galilee:  
 Then to the west, the Pilgrims' frail bark flew,  
 To bear their faith the rolling waters thro'.

Those days have passed. Adventure's daring feats—  
 The rush of commerce—and the ceaseless rise  
 Of later wars—the dash of Europe's fleets—  
 While, younger still, *our* maritime emprise,  
 Have in succession swept in swiftest course.  
 The lamp of Knowledge burned—its brilliant beam  
 Showed Watt the nature of that wondrous force—  
 And lit the way to Fulton's age of steam—  
 Science, the true Aladdin! Born of skill  
 Mechanic Arts, her fabled genii still!

So waked Invention!—cast old molds aside;  
 Framed clippers from the light canoe. Ships sailed  
 With keel and bow new-formed to cut the tide.  
 Speed, strength to gain, creative powers entailed.  
 She taught her Ericsson the deadly plan  
 Of his great Monitor; and brought to Hayes  
 The shell of dynamite; and gave Berdan  
 And Sims, and Howell, all the newer ways  
 To form the dread torpedo. Timby's towers—  
 Zalinski's guns—all warrants of her powers.

The latest offspring of Inventive Thought,  
 Born in the waters of St. Francis' Bay,  
 Where, in the *Golden Hind*, Drake entrance sought  
 And where Ayala's boat, *San Carlos*, lay.  
 Lo! there she rides—a child of matchless skill!  
 With her twin sister war-ship near at hand,  
 A pledge that yet those mighty forges will  
 Send forth more armored ships to guard our land.  
 Salutes peal loud around. Far o'er the waves  
 They echo tributes to Samoan graves.

Cradled on surges at the Mission Rock,  
 And nourished by Potrero's furnace blast,  
 Conceived and framed to out-breast tempest shock,  
 Reared to full strength on Union forges vast—  
 Touched by electric fire, and well supplied  
 With each appliance known to modern art—  
 Her guns of metal proved—her swiftness tried—  
 Steel-clad—strong-ribbed—complete in every part—  
 Mold—engines—arms—the best inventions known,  
 Mechanic Science claims her for her own.

The armored cruisers—yachts for speed—the craft  
 Of various merchantmen in times of peace—  
 The naval monsters of each clime—the raft  
 Of light flotillas on the inland seas—  
 These still shall sail, and weave their endless chain—  
 A bond commercial, joining land to land;  
 Prepared for war, a glorious peace shall gain,  
 And bind the nations in one allied band.  
 Thus navies still shall guard, and ships shall ply  
 While Argo's constellation sails on high.

Miss Pearl Noble, a young California lady cornetist, performed a solo, "Non é Ver," and, in response to a long-continued encore, rendered "Robin Adair" with exquisite feeling and skill.

George H. Maxwell, the orator of the occasion, was then introduced and delivered the following:

#### THE ORATION.

MR. PRESIDENT, LADIES AND GENTLEMEN:—As we gather here to-day to celebrate the opening of the Twenty-fifth Industrial Exhibition of this Institute, the echoes of the celebration of the fortieth birthday of California have hardly died away. Before that day had come, a new generation, born on the soil of California, had grown to manhood and womanhood. And as in the days of chivalry it was a time of feasting and rejoicing when a youth first buckled on the spurs and armor of knighthood, so the people of California set apart that day as a fitting time to commemorate the enlistment of her native sons into the great industrial army of California, which is building here a new Empire of the West. While the echoes of that grand demonstration still linger in the air, and our minds still picture its scenes in imagination, is it not an appropriate occasion to discuss the influence which this Institute has exerted upon the youth of California, and which it will continue to exert as long as it exists?

The Mechanics' Institute was one of the first-born of California's educational institutions—for an educational institution it is, in the broadest and best sense of the term. Organized when the State was but five years old, it has kept full pace in its growth with the marvelous progress of California.

This Exhibition will round out a full quarter of a century, during which its Industrial Exhibitions have shown, from year to year, the improvements that have been made in machinery and applied mechanics, have reflected the advancement of science, and marked the stages of the progress of invention and mechanical industry.

During all these years the doors of its library have stood open for all who desired to drink at its fountain of knowledge. Go when you would into this library—in the evening, especially, when the occupations of the day were over—and you would see it crowded with earnest faces, young faces for the most part, seated at the tables and poring studiously over some instructive work, or seeking from shelf to shelf or from book to book for a desired bit of information or knowledge, or ensconced in some comfortable chair, and finding the best intellectual entertainment that life affords in the pages of an interesting book.

Who are they all? Whence do they come and whither do they go? If you would know, follow them to their homes, and go where they will lead you in the early morning hours. You will follow some to the great machine shops and works where they are building the machinery and hoisting works which lift from our mines their precious metals, the quartz mills whose sullen and

ceaseless roar vibrates the air, and the smelting works, whose fires redden the midnight skies in the mining districts of the coast; where they are manufacturing the tools to till our soil and to reap its harvest, to grind our grain into flour to feed the workers of the world, and building the transports of commerce to carry our products to their far distant markets; where they are constructing the bridges that shall span our rivers, the cables which shall draw our cars, the wires which shall flash our messages or bring to us light in the night; where great armored vessels of war are being constructed to carry our flag and protect our commerce in foreign seas. They will lead you into every department of mechanical industry, into every place where man is utilizing his powers over the forces of nature—into the draughting-room and the machine-shop; from the din of the boiler works to where the molten metal is drawn hissing from the furnace into the molds from which it will take shapes and forms of usefulness; to the factory and the furnace, the foundry and the forge; through the sawmill and the planing mill; from the office of the architect to the shop of the carpenter, and to the new buildings rearing their heads skyward on every block of our city, where the click of the mason's trowel and the ring of the carpenter's hammer are heard together and are followed by the work of the plumber and gas-fitter, the plasterer and painter, the decorator, the upholsterer and the furnisher. Others will take you to the avenues of trade and the marts of commerce or into the walks of professional life.

And through all these channels the good influence of this Institution reaches out and is felt. The young mechanic, the mercantile clerk, the professional student, all alike share its benefits. They find in its library the story of the lives of men who have suffered hardships and privations, who have persevered in spite of all discouragements and difficulties, who have triumphed over apparently insuperable obstacles; and from the lives of such men they can learn the truth of the Welsh proverb, that "Failures are but the pillars of success," and of the words of Beaconsfield, that "Everything comes if a man will only wait," and draw from the experiences of such men the courage to persevere and the patience to wait till success shall crown their efforts, too.

The young mechanic finds there the accumulated knowledge of the past in his branch of industry and a current record of the experiments and experiences of those who are working with him day by day, making new discoveries, unlocking new secrets, and perfecting new devices. By its aid he can keep abreast of the age, and perhaps find inspiration for some new idea which shall crystallize into an invention and make him famous, or insure him a place in the great army of inventors, through whose patient thought and labor the engine of Stephenson has developed into the great locomotives of to-day; the "Black Cavalry of Commerce," as they were called by the eloquent "silver-tongued orator" in his address to the Convention of Locomotive Engineers and Firemen a few days ago; and the engine which pushed Fulton's little steamer up the Hudson has grown into the huge monsters, pulsing with power, but controlled by a finger's touch, which drive our fleet of ocean greyhounds across the Atlantic. And all alike, the young mechanic, clerk and

student, can find here rest and relaxation after a day of exhausting labor or close application to desk or study; can find pathos and humor in Dickens, feel the heart throb with pity for the sufferings of the poor, or laugh over the trials of Mr. Pickwick and the tribulations of Sam Weller; read "The Tale of Two Cities," and step into the heart of Paris when in the throes of the French revolution, watch with bated breath the storming of the Bastile and the ghastly work of the guillotine as it wreaked the vengeance of the French people on their oppressors for generations of cruelty. Can forget the present and be transported with Ebers back into the dim mysterious past of ancient Egypt, see Memphis and Thebes in all their glory, hear the singing statue of Memnon and walk through the avenue of Sphinxes at Karnak, wander through the temples and the palaces of the Pharaohs, and live again through their reigns with all their magnificence; watch the track of desolation which followed the invading army of Cambyses; drift down the Nile with Grecian adventurers and follow across the desert the canal which joined the Nile to the Red sea ages before England or France was a nation. Can read "Ben Hur" and go with the Wise Men of the East as they follow the Star of Bethlehem in their search for "He that is born King of the Jews;" see Jerusalem in all its glory and learn the cruelty of the Roman race; stroll with Ben Hur through the grove of Daphne and the City of Antioch at the height of its greatness, and with Sheik Ilderim beneath the shade of the Orchard of Palms; sit in the great amphitheatre of Antioch, and with blood tingling with excitement watch the grand chariot race between Messala the Roman and Ben Hur the Jew. Can live over again with Scott the days of chivalry; follow the crusaders to the Holy Land; muse in the Convent of Engadi over the strangeness of human nature, which in that age peopled the caves of Palestine and Syria with hermits and whitened their deserts with the bones of the chivalry of Europe; admire the bravery and splendor of the Knights of the Crusades; watch the siege of Jerusalem; follow the broken fortunes of Richard the Lion-hearted back to his native land; view the grand gathering of the Norman chivalry of England, with all its pomp and pageantry at the tournament of Ashby de la Zouche; chat over a haunch of venison with Robin Hood; visit the court of Elizabeth with the Earl of Essex and there meet Lord Bacon and Sir Walter Raleigh; see Cromwell at the height of his power and then stand on the cliffs of Dover and see the nation go wild with joy over the return of Charles Stuart; go with Julian Peveril to his court and witness the frivolity, immorality and ingratitude which disgraced his reign; go with Waverly into the Scottish Highlands and hear the shrill notes of the pibroch waking the echoes of their rocks and glens as they herald the gathering of the clans to do battle for the House of Stuart; watch the wild charge of the Highlanders and hear the clash of the claymores and the clang of the bagpipes at the battle of Preston, and then stand on the shores of that northern sea, and see the last of the line of Stuart sail away in the night and bid farewell forever to the land over which his race had ruled so long. Can follow Stanley through the Dark Continent, and find the secret of his great-

ness in his own words, when he writes: "The bigger the work the greater the joy in doing it. That whole-hearted striving and wrestling with Difficulty; the laying hold with firm grip and level head and calm resolution of the monster, and tugging and toiling and wrestling at it, to-day, to-morrow and the next, until it is done; it is the soldier's creed of forward, ever forward—it is the man's faith that for this task was he born. Don't think of the morrow's task, but what you have to do to-day, and go at it. When it is over, rest tranquilly and sleep well." Can cross the burning sands of the Soudan with Gordon; ride with Burnaby to Khiva, and travel to the farthest ends of the earth with those who have explored its surface from the frozen Polar region to the Equator. Can visit Europe and Egypt, India and Russia, China and Australia, circumnavigate the globe and explore it from pole to pole—and all this without the interruption of an hour to the occupations of their daily life. All this lies within the reach of every youth who holds the open sesame to the door of the library of this Institute.

Here he can study the history of all nations, read of the heroic deeds of the heroes of all ages, and the lives of all the great soldiers and statesmen, scholars and scientists, mechanics and inventors of the world. And, as Longfellow says:

"Lives of great men all remind us,  
We can make our lives sublime,  
And departing leave behind us  
Footprints on the sands of time."

Who can tell what inspiration may have been drawn by some son of California from the story of the life of some great man, which he has found in the library of this Institute, and which has already or will in the future bear its fruit in noble deeds?

An old Locomotive Engineer at the Convention of the Brotherhood of Locomotive Firemen which has just been held here, told of how a boy by encouragement and right treatment had been led to success in life when in danger of failure, and framed the idea in words so plain and strong that they are worth repeating. He said: "There were men of a plastic nature who by a little encouragement could be started on an upward chute leading on to success, or by the opposite treatment might be started on a downward trend ending in failure."

How many there no doubt are who have found in the record of other men's lives, and in their trials and successes, in such books as those of Samuel Smiles, in his "Lives of the Stephensons," or his "Self-Help," or his "Life and Labor," or in the biography of such a man as Benjamin Franklin, just that encouragement which has come at a time when the heart was growing weak, and has turned from failure to success the current of a life.

And it is in such works as these that the true principles are to be found which should be the guiding star of life; unswerving integrity in every act and deed; patient perseverance in the work of life, no matter how far off the goal may seem; unflinching courage under adversity; an indomitable determination to overcome obstacles; economy and thrift in the management of



the affairs of life. Go to the shelves and take down the books which teach these things. You will find them worn by the many hands which turned their pages for the youthful eyes that have learned from them these lessons of life.

And it is because it affords such opportunities for education and exerts such influences as these that this Institute should have that strong support which will enable it to reach out and widen the sphere of its beneficial influence and increase its facilities for doing good. Every merchant who wants faithful clerks, every manufacturer or builder who wants intelligent and diligent operatives or mechanics, every father or mother who has a son growing up amidst the temptations of this great city, owes an obligation to this Institute to extend to it their earnest co-operation and support. For it is to every boy a haven of safety and a bulwark of protection against evil habits and evil companions, and against the pitfalls of sin and dens of iniquity, which at every turn throw the glare of their temptations across his path and before his footsteps.

The men who founded the Mechanics' Institute, and have guided its destinies to its present prosperity and usefulness, have reared for themselves a monument more enduring than the pyramids of the Egyptian kings; for its influence will widen with its growth and increase with its age, and the seeds sown now will yield their harvest to generations yet to come.

It is, however, not alone the moral influences of this Institute which should be considered, important though they may be. Great as has been the progress of the past, we are yet in the infancy of scientific and mechanical development; and it is on this development that such an Institution as this, with the facilities afforded by its library and its exhibitions, exerts a potent influence. In these exhibitions the California mechanic or engineer can see and trace, from year to year, the advances and improvements that are made in the different branches of mechanical industry and machinery. We are so intent upon the present that we often times little appreciate the great advances that have already been made, or in how brief a time this triumph of mind over the material forces of nature has been achieved, or what the future has in store for us.

If we would realize it fully, let us go backward again to the ways of the past. Let us start to the East along the line of some transcontinental railroad with an ox-team or one of the old overland coaches and watch the fast trains whirling by us; or send a Pony Express to carry a message which now flashes over a wire across the continent; or take a sailing vessel to follow in the wake of one of the swift ocean steamers in its track across the Atlantic; or stand on the deck of one of our new armored cruisers, while our Squadron of Evolution was in the Mediterranean, and call up beside it in imagination the Roman galley in which Ben Hur was a slave at the oar—a picturesque sight as it sweeps by with its banks of oars, but a pigmy in power beside the monster of war which this age has devised; or stand at the wharves as the great ships which now carry our commerce load and unload their cargoes, and picture in

the mind's eye beside them the argosies of Antonio "with their woven wings."

And when we bear in mind what the past few years have brought forth, who can say that any achievement of science or mechanics is so difficult that the genius of men may not yet compass it? Who, that read Bulwer Lytton's "Coming Race" when it was first written and his description of the mysterious light by which the inhabitants of his subterranean Utopia lighted up their underground world, dreamed that the time was so near when the light would be developed which could illumine the caves of the earth, or light a world within our own which the sunlight never reached with a light as bright as that of the noonday sun? And who dares to say that the rest of the visions of Bulwer may not be fulfilled, and that we may not yet traverse the atmosphere and float upon the waves of the air; or that Jules Verne's Forty Leagues Under the Sea shall remain forever a mythical folly; and that we shall never race with the porpoises, drift through groves of coral, or explore the depths of the ocean; or that Bellamy's dreams of perfected electrical transmission shall never be realized, and that we shall never reach from our pillow to touch a button and be soothed to slumber by strains of sweetest music, or be waked in the morning by the stirring notes of the reveille?

The touch of the magic wand of Science has unlocked so many of Nature's secrets and placed in the hands of mechanics so many of her powers, that we stand amazed at the progress which a few years have made. Another decade may see the locomotive rusting beside the overland coach of the olden days, and steam dethroned to make way for Electricity, the new Monarch of Motion, from whose scepter will flash the light which shall illuminate the world.

But, before this time comes, this Institute, keeping pace with the development of California and the marvelous growth of this great city, will have outgrown its present home. Our books are already pushing each other from their shelves. The familiar rooms are even now overcrowded by those who are drawn there in their search for knowledge or intellectual entertainment. The policy of progress and improvement, which has ever characterized the management of the Institute, cannot be changed now. Its onward course cannot be stayed. It is as inevitable as that the sun will rise that before many years a new Institute Building must be built. When it is done, let there be erected a Temple of Industry and Knowledge, which shall be to the citizens of our own city what the Temple of Solomon was to the Jews, the Temple of Diana to the Ephesians, the Parthenon to the Athenians or the Temple of Jupiter to the Romans—in whose grandeur every citizen shall feel a pride and whose influence for good shall be felt in every home.

The exercises came to a close by the band performing the "Inaugural March," composed by the leader, Professor Casassa, for the occasion.

The doors of the Exposition were thrown open to the public at 7:30 o'clock in the evening; and, during the following thirty-three week days, the Pavilion was thronged with pleased and interested visitors.

## ALPHABETICAL LIST

OF

# Exhibitors and Articles Exhibited.

Class.

- 39 Abell & Priest.....General Display of Photos  
13 Adams & Pritchard, 505 Davis street..Ranges, Stoves, Boilers and Broilers  
35 A. & A. Sketch Club, 418 California street..Free-hand and Competition  
Drawing.  
40 Aitken, J. Mrs., Room 31, Murphy Building.....Magic Corn Salve,  
Furniture Polish and Eye-water.  
41 Alameda Sugar Co., Alvarado.....California Best Sugar and California  
Sugar Beets.  
5 Alexander, Leo E. & Co., 218 Sansome street.....1 Smith Premier  
Typewriter.  
45 Allen, Wm. E., 32 Grove street .....Coal and Coal Castle  
42 American Champagne Co., 839 Folsom street .....American Champagne  
30 American Crystal Lens Co.....Spectacles and Eye-glasses in Frames  
40 Anderson Springs, 439 Fell street.....Mineral Water  
36 Anson, Miss Teresa, 725 Bush street.... One Oil Painting on Velvet  
46 Anens, G., 156 Ninth street .....Preserved Figs  
38 Ash, Miss Minnie, 809 Turk street.....Free-hand Drawings  
18 Atkinson, G. F., 11 Clementina street. .... California Wood-turning  
19 Badger, Wm. G., 725 Market street.....Pianos and Organs  
11-20 Baker & Hamilton, Pine and Market streets .... Benicia Steel-beam  
Plows, Agricultural Implements, etc.  
40 Baldwin's Germ Exterminator Co .....Germ Exterminator  
33-19-21 Bancroft Company, The, 721 Market street.....Publications,  
Printing, Pianos, Organs and School Furniture.  
40 Bartlett Springs Mineral Water Co., Room 11 Chronicle Building.....  
Mineral Water  
28 Barton, J. M.....Corset and Corset Steels  
10-30 Bascom, E. L., 46 Grove street . . . Daisy Embroidery, Needle and  
Patent Combination Microscopes.  
34 Bashere, Mrs. W., Dunnigan, Cal.....Crazy Quilt  
38 Bates, O.....Architectural and Mechanical Freehand Drawings  
41 Beck & Sons.....Log Cabin Maple Syrup  
33 Becker, Lambert, 105 Post street.. . . . Pacific Coast Zither Journal

## Class.

- 24 Bennett, Chas..... Calf, Veals, Kip and Sides  
 38 Benson, Sam'l C., 37 Hoff avenue..... Architectural Drawings  
 14 Bergeman, C. A., 2484½ Market street..... Cutlery  
 11-20 Bilz, J. A..... Pole Cart, Village Cart and Training Cart  
 18 Blacon, H. E..... Extension Step Ladder  
 34 Bleam, Miss M. E., 609 Fell street ..... Toilet Set and Embroidery  
 40 Bogle's Quaker Medicine Co., 1223 Market street.. Quaker Balm, Salve  
 and Pills.  
 5-24 Bowers, W. F. & Co., 409 Market street. .Rubber Working Machinery  
 and Rubber Goods.  
 34 Brackett, Miss N., 514 Baker street..... Pillow Sham, Lace Edge  
 45 Bray, Miss Etta, 918 Geary street..... Collection of Buttons  
 34 Bray, Mrs. G., 918 Geary street..... Bedspread  
 32 Breen, Miss Kate M., 962 Broadway, N. Y. . Moonstones and Alligator-teeth  
 34 Broderson, Mrs. Wm., 16 Twenty-sixth street... Knitted Bedspread  
 22 Brunswick, Balke, Collender Co., 653 Market street . Billiard Tables and  
 Cushions, Bar-room fixtures, etc.  
 33 Brunt & Co., 535 Clay street... Fine Printing, Society Cards and Badges  
 23 Buchanan Bros., 609 Sacramento street..Brushes, Brooms, Feather-  
 dusters and Carpet Sweepers.  
 24 Buckingham & Hecht, 23 Sansome street..... Boots and Shoes  
 43 Burnell, J. H., 519 Sacramento street..... Albion Ale and Porter  
 35 Berger, Miss Gussie, 1409½ Mason street..... Kensington Oil Painting  
 18 Burr, C. H., 667 Mission street..... Weatherstrips  
 21 Burr Folding Bed Co., 603 Market street.. Folding Beds, Tables, Wash-  
 stands, Reclining Chair and Desks.  
 24 Cahn, Nicklesburg & Co., 129 Sansome street ..... Boots and Shoes  
 17 California Adamant Wall Plaster Co., 212 Sansome street..... Adamant  
 Wall Plaster.  
 46 California Cotton Mills..... Cotton Fibre  
 29 California Electric Light Co..... Electric Lights, Appliances, etc.  
 17-45 California Building Stone Co., 42 Flood Building. Marble, Cut Stone,  
 Mantels and Monumental Work.  
 18 California Sash Balance Co., 33 Chronicle Building. Marshall's Sash Balance  
 18 California Veneer Co..... Redwood Veneers  
 12 California Wire Works, 9 Fremont street.. Wire Rope, Wire Cloth, Wire,  
 Fence Wire, etc.  
 45 Canadian Anthracite Coal Co., Second and Brannan.. Coal  
 18 Carson, Thos., 150 Fifth street..... Fancy Carved Table  
 5-25 Chronicle, The... Stereotype Plates, Cylinder Plates, Paper and  
 Premiums for Subscribers.  
 21 Chadbourne & Co., 741 Market street..... Furniture  
 41 Ciphers, D. S..... Pop Corn and its Manufacture  
 40-42 Coburn, Tevis & Co., 6 Battery street..... Pure Olive Oil, Axle  
 Grease and California Products.

- Class.
- 10 Cohen, I. S., 145 Sixth street..Sewing Machines and Eyelet Button-hole  
Machines.
- 29 Calling, Simeon, 715 Fourth street.....Electric Bells and Bath Battery
- 20 Columbus Buggy Co... .. Buggies, Carriages, Harness, etc.
- 13 Cone, Mrs. Henry.....Heat Regulator
- 24 Cook, H. N., 32½ Fremont street...Leather Belting and Tanned Leather
- 42 Crabb, H. W., 308 California street. ....Wines, Brandies and Grapes
- 36 Crosett, Mrs. Julia, 2525 Folsom street..... Ceramic Ware
- 34 Culligan, Annie, 231 Fulton street ..... Mantel Shelf Cover
- 20 Culver, Frank, 823 Polk street..... Wheel Brake Shoe
- 28 Cummings, Mrs. J. M., 1037½ Market street .....Dress-fitting Machine
- 34 Cuneo, Mrs. L., 615 Bay street .... Fancy Bed-quilt and Pillow Shams
- 19 Curtaz, Benjamin & Son, 20 O'Farrell.....Pianos
- 41 Cutting, John T. Co., 23 California street... Cleveland Baking Powder,  
Pyle's Pearline, Highland Brand Condensed Milk, King's Buck-  
wheat Flour, Canada Sap Maple Syrup, Prescott's Enameline and  
Stove Polish.
- 34 Davenport, H. E., 125 Grove street .....Sofa Cushions
- 5 Dearing, O. A., 405 Sansome street.....Printer's All-brass Galleys
- 11-5 Deere Implement Co., 305 Market street....Agricultural Implements
- 13 De La Montanya, J. & Co., 214 Jackson street.....Stoves, Ranges,  
Grates and Furnaces.
- 45 Deming, Flossie, 714 Ellis street .....Buttons
- 46 Denicke, M..... Exhibit of Figs
- 6 Denniston, E. G., 653 Mission .....Silver-plated Amalgam Plate
- 33 Dewey & Co., 220 Market street.....Illustrated Newspapers,  
Engravings, etc.
- 12 Dickey, A. ....Locknuts for Fishplates
- 5-23 Dillenberg, M., 115 Beale street..Patent Ice Machine and Refrigerator
- 34 Dinsmore, Mrs. S., 2411½ Howard street .. Silk-embroidered Bed-quilt
- 17-7 Dixon, John, 1219 Market street.....Artificial Stoneware
- 1 Dodge, M. B., 21 Fremont street.....Compound 50-Horse Power  
Steam Engine.
- 6 Dodge, M. B., 21 Fremont street.....Rock Breaker and Ore Sampler  
(Combined.)
- 2 Dow Steam Pump Works, 114 Beale.....Steam Pumps, Deepwell,  
Duplex and Boiler Feed Pumps.
- 35 Doyle, Mabel, 1716 Stockton street..... Crayon Drawings
- 12 Doyle, Thos., 57 New Montgomery street...New System of Horseshoeing
- 34 Driver, Mrs. J. H ... .. Crochet Bedspread and Irish Flax
- 29 Dworzek, Gus, 1527 Clay street .. ..Electric Motor
- 38 Dwyer, E. H..... Mechanical Drawings of Beet Sugar Mill
- 29 Edison General Electric Co., 112 Bush street.... ..Electrical Machines  
and Electrical Appliances.
- 29 Electrical Engineering Co., 21 Spear street.....Electrical Apparatus

## Class.

- 18 Eureka Ventilating Co., 313 Market street . . . . Wall, Window, Door and Skylight Ventilators.
- 2 Evans, C. H. & Co., 110 Beale street . . . . Steam Pumps with Crank and Fly Wheel.
- 46-20-5 Ewell Bottled Milk Co., 21st and Folsom . . . . . Six Horse Milk Wagon; One Horse Milk Wagon and Bottled Milk.
- 20 Ewing, John F . . . . . Display of Milk Wagons
- 36 Farnham, Mrs. C. W. . . . . Decorated China, Ceramic Ware and Woodwork Panels, Hand-painted.
- 9 Fastenau, H., 3 Chetham Place . . . . . Model of Ships, Schooner and Pilot Boat.
- 34 Fillebrown, Mrs. A. D.. 429 Tehama street. . . . . Knit Spread
- 24 Filer, Thorne & Co., Serpentine avenue . . . . . Display of Leather
- 42 Finke's, Widow A., 809 Montgomery street . . . . . California Champagne
- 39 Fish, James & Co., Phelan Building . . . . . Display of Photographs finished in Crayon.
- 12 Folding Iron Gate and Guard Co., 79 New Montgomery street . . Folding Iron Gate and Guard.
- 45 Forbes, A. J. & Son., 213 Mission street . . . . . California Cabinet Woods
- 40 Forbes, J. C., 1322 Market street . . . . . Castalian Mineral Water
- 40 Forbes & Puyou, 32 Phelan Building . . . . . Display of Cosmetics
- 39 Foss, Oscar, 841 Minna . . . . . Photographic Supplies
- 39-35 Fowser, Jacob, 337 Hayes . . . . . General Display of Photos, Crayon and Water Colors.
- 24 Frank Bros., 406 Battery street . . . . . Walrus Leather and Sole Leather
- 43 Fredericksburg Brewery, Market and Fremont . . Export and Draught Lager Beer.
- 5-24 French & Linforth, 35 Beale street . . . . . National Pulley Covering
- 24 French & Linforth, 35 Beale street . . . . . Display Gandy Cotton Duck
- 35 Friedman, Miss S., 1230 Post street. . . . . Oil Painting
- 13 Fuller, J. C., 375 Tenth street. . Dagget's Patent Russia Iron Self-basting Roaster and Baker.
- 13 Gaskell & Regan, 14 First street. . . . . Display of Stoves and Ranges
- 40 Gates, J. H. & Son, New Montgomery and Howard . . Pepsin and Cascara Vitalizer.
- 11 Gerow, E. S . . . . . California Sidehill Plow
- 40 Giant Powder Co., 30 California Street . . . . . Exhibit of Explosive Gelatine, Gelatine Dynamite, etc.
- 34 Gibbons, Miss Lucie, 1073 Market street . . . . . Exhibit of Toilet Articles
- 12 Gibbs, Geo. W. & Co., 33 Fremont street. Mathewson's Patent Pipe Joint
- 36 Gibbs, Mrs. J. D., 599 Ellis street . . . . . Three Panel Screen (Oil painted)
- 15 Gibbs, W. T., 459 Ninth street . . . . . Display of Doud's Locks
- 17 Gladding, McBean & Co., 1358 Market street. Architectural Terra Cotta
- 1 Golden State & Miner's Iron Works, 231 First street. . . . . Thompson's Independent Automatic Cut-off Compound Engine.

## Class.

- 34 Goldstein, Gracie, 1240 Turk street.. . . . . Apron Crochet  
 29 Goldstone, L., 1443 McAllister street. . . . . Street Indicator for Cars  
 29 Goujon, H., 321 Ellis street. . . . . Automatic Electric Battery  
 29 Gould, C., 5 Hyde street. . . . . Electrical Improved Alarm Clock  
 16 Graff, A. S. & Co., 47 Second street. . . . . Coal Oil Lamps, Graff's Patent  
 Burner, Saloon and Billiard Lamps.  
 34 Grassely, Z. & Co., 14 Grant avenue. . . . . Display of Embroidery  
 40 Haas, A., 614 Seventh street. . . . . Display of Bone Charcoal and Fertilizer  
 8 Hackley, S. R., 223 Fair Oaks street. . . . . Hackley's Patent Hose Coupling  
 34 Hall, Mrs. K. H., 11 Taylor street. . . . . Fancy Silk Coverlet and Crazy Quilt  
 5 Hallidie, A. S., 9 Fremont street. . . . . Cable Road—Special Cable for Cable  
 Railways, Ropeways and Ropeway Clips.  
 24 Halpruner, W. S., 850 Market street. . . . . Automatic Lasts  
 40 Halpruner, W. S. . . . . Dr. Halpruner's Liniment and Patent Corn Salve  
 28 Hamlin, Miss A., 219 Post street. . . . . Exhibit of Corsets  
 9 Hancock, Robert & Walter, 734 Harrison street. . . . . Miniature Schooner  
 34 Hanson, Miss Annie, 1460 O'Farrell street . . . . . Embroidered Bed Quilt and  
 Pillow-shams.  
 1-29 Harding Electrical Manufacturing Co., 228 Fremont street. Gas Engine,  
 Dynamo and Electric Lights.  
 18 Hare, Chas. A., Pier 5, Steuart street. . . . . Gardner Sash Balance and  
 Attachments.  
 41 Harkey, H. H. . . . . Exhibit of Teas, Coffees and Spices  
 9 Harkukuchi, J., 1163 Mission street. . . . . Model of Japanese S. S. Hiyei  
 38 Heald's Business College, 24 Post street. . . . . Pen Drawing, Penmanship,  
 Engraving, Typewriting, etc.  
 10 Hebard, H. A., 1330 Market street. . . . . Love Buttonhole and Sewing  
 Machines.  
 27 Heineger, C. P., 411 California street. . . . . Display of Canes, etc.  
 24 Hellwig, Ch., Twenty-sixth street. . . . . Buckskin and Glove Leather  
 2 Henry, W. H., 1216 Broadway. . . . . Lechtenberg Steam Pump  
 34 Hervey, Mrs. C. B., 1064 Howard street. . . . . Crazy Quilt  
 18 Hewitt, W. A., 1730 Stevenson street . . . . . Freehand Drawings  
 37 Heynold, Mrs. Edward, 124 Clipper street. . . . . Pictures of Wood Mosaic  
 21 Heywood & Co., 663 Mission street. . . . . Rattan Furniture  
 10 Hicks, J. L., 667 Mission street. . . . . Sewing Machines  
 3 Hicks, J. L. . . . . Lathes, Planers and Chucks  
 45 Hilgard, E. W. . . . . Ramie Plant Growing  
 40 Hires, Charles E., 628 Market street . . . . . Hire's Root Beer Packages  
 45 Hittell, John S., 1216 Hyde street. . . . . Display of Building Stone  
 18 Hoffman, L. M., 105 Beale street. . . . . Wood Carving and Sawing  
 20-5 Holmes, H. E. & Co., 834 Howard street. Standard Cab and Brougham  
 40 Horstman, John, 767 Bryant. . . . . Bi-Carbonate of Soda, Borax and  
 "Lavarine."  
 40 Hueter Bros., 601 Market street. . . . . Varnishes and Glycerine

## Class.

- 18 Hurlbut, R. P., 544 Brannan street...Redwood Veneered Furniture and Redwood Mantel.
- 34 Ingalls, Miss M., 20th and Valencia streets .....Nightdress, Chemise, Drawers and Corset Cover.
- 45 Inyo Marble Co., 137 Montgomery street.....Marble and Marblework
- 34 Jackson, D. M., 825 Geary street.....Embroidery
- 16-13 Jantzen, F., 717 Market street.....Display of Lamps and Oilstoves
- 13 Jewett, S. S. & Co., 527 Market street.....Steel Ranges, Hot Air Furnaces, etc.
- 1 Johnson, C. B. & Co., 59 Clay street.....Magnesia Sectional Covering for Boilers, etc.
- 24-25 Johnson, J. C. & Co., 400 Market street...Harness, Robes and Whips
- 34-36 Johnson, Mrs. Mary, 919 Illinois street....Knit Bed Quilt, Crocheted Quilt, Painting on Velvet.
- 1-2-5-6 Joshua Hendy Machine Works, 39 Fremont street.....Engines, Boilers, Pumps, Rock Crushers, Lubricators, etc.
- 35 Kalisher, Miss ... Charcoal Freehand Drawing
- 34 Keith, Mrs. O. W., 1136 21st street...Adjustable Tailor System of Dress Cutting.
- 45 Keller, Alex.....Display of Mineralogical Specimens
- 28 Kelly Bros., 26 Sixth street.....Display of Corsets
- 9 Kendall, T. M.....Model of Yacht
- 45 Kimball Bros., San Diego.....Specimens of Marble
- 34 Kimball, Mrs. Laura, Diamond street...One Lace Dress
- 29 Klumpke, J. W., 1813 Polk street ..Electric Instrument and Apparatus
- 11 Knapp, R. J.....Sidehill Plows
- 9 Kneass, G. W., 718 Third street.....Display of Rowboat
- 24 Kreig, Anton .....Display of Sole Leather
- 27 Krueger, J. H., 13 Trinity street.....Display of Canes, etc
- 24 Kullman, Salz & Co. 106 Battery street.....Sole Leather, Harness Leather, etc.
- 34 Lauderkin, Mrs. M. L. ....Display of Hairwork, etc
- 20 Larkins & Co., 634 Howard street .....Landaus, Buggies, Coupes, Rockaways, T Carts, etc.
- 20 Larrabee, C. E., 137 Montgomery street.....Display of Advertising Carriage.
- 40 Lash's Bitters Co., Sacramento.....Display of Lash's Bitters
- 9 Lawler, Theo. S., 1327 Leavenworth street.....Model of Yacht
- 34 Lawson, Mrs. J., 915 Illinois street....Bedquilt-patchwork Embroidery
- 24 Leather Federation, 597 Mission street.....General Display of Boots and Shoes, Upper Leather, Sole Leather, Russet Leather, Mats, etc.
- 23-41 Lebenbaum Bros., 215 Sutter street.....Automatic Ice Cream Freezer, Jams, Jellies and Carpet Sweeper.
- 31 Leek, Dr. G. W., 6 O'Farrell street.....Dental Specimens and Tools



## Class.

- 9-18 Lewis, L., 1824 Webster street.....Full-rigged Model of Ship and  
Clock with "Bugle call."
- 25 Lichtenberg, Wm ..... Exhibit of Ramie Cloth and Fibre
- 45 Lichtenstein, Mark, 617 Washington street .... Collection of Rare and  
Ancient Coins.
- 14 Liddle, R. & Co., 538 Washington street. . . Guns, Pistols and Sporting  
Goods.
- 27 Litchfield, J. M., 12 Post street .....Display of Military Regalias
- 35 Loeb, Henry, 1322 Buchanan street..... Life-size Crayon
- 44 Lorillard, P. & Co., 217 Front street..... Turtle Tobacco
- 28-34 Loudon, W. M., 224 Stockton street..... Adjustable Dress Forms
- 34 Luce, Mrs. R. C., 1324 Buchanan street..... One knit Spread
- 20 Luxemberg, M., 134 3rd avenue .... One Folding Baby Carriage
- 26 Lyons, Chas., 1214 Market street.... Exhibit of Cloth for Men's Clothing
- 14 MacMillan, A. E., 1809 Steiner street..... Patent Mitre Box
- 28-34 Magnin, J., Bancroft Building .....Ladies', Childrens' and Infants'  
Underwear and Bonnets.
- 20 Maier, Thos. & Co., 2315 Mission street.....Display of Liquor Wagon
- 1 Mailer, John, Diamond and 23d streets .....Models of Furnace, Grate,  
Door Liner and Door Arch.
- 11 Maisonneuve, P., 618 Fifth street..... Fruit-pitting Machine
- 7 Maisonneuve, P., 618 Fifth street..... Model of Washing Machine
- 18 Mallon, John, 1213 Howard street..... Art Glass, Ground, Cut and  
Embossed Glass.
- 34 Manchester, Mrs. A. L., 525 Folsom street..... Worstedwork
- 41 Manhattan Food Co., 623 Howard street.... Manhattan Food for Poultry,  
Horses and Cattle.
- 39 Marceau, T. C., 826 Market street .... General Display of Photography
- 46 Maricopa & Phenix R. R..... Small Adriatic Figs (dried)
- 5 Marshall, I. E..... Model of Car Coupling
- 3 Marwedel, C. F., 56 First street....Machinists' and Engineer' Supplies
- 21 Marwedel, E. H., 12 Second street....Brass Bedsteads, Window Shades  
Curtain Poles.
- 26 Marysville Woolen Mills, Marysville..... Woolen Goods
- 40 Mayer, Oscar J., Geary and Octavia streets...Dr. Morse's Anti-headache  
wafers.
- 34 Marx, Mrs. M.....Knitted Bedspread and Pillow Shams
- 24 McAlear, Frank, Hampshire and 26th streets.. Alum Leather
- 34 McCloud, Mrs. A., 513 Brannan ..... One Rug
- 34 McDonald, Mrs. L., 1521 Leavenworth street..... Embroidery
- 34 McKenzie, Mrs. J. A., 2514 Market street ... Two Crocheted Bedspreads
- 34 Melton, Mrs. A. D., 2709 Larkin street ..... Mexican Work
- 34 Merrill, Mrs. M. A., 224 Noe street.... One Knit Quilt and One Silk Quilt
- 20 Mersereau & Son, 2237 Mission street..... Carts and Buggies
- 17 Meston, Chas., 747 Mission street..... Enameled Letters and Plates

## Class.

- 24 Metton & Gebhart, Mission road..... Calf, Veal and Kip Skins  
 5-25 Mighell, J. P., 413 Montgomery street.....Two Yost Typewriters and  
 Cases, Drop Cabinets and Roller Top Cabinet.  
 9 Moore, R. B., Seventeenth and Guerrero.....Model of Cruiser  
 "Charleston."  
 46 Moore, E. A., Reno, Nev..... Display of Comb and Strained Honey  
 20 Martin Bros.. 115 O'Farrell street....Morton's Special Delivery Wagons  
 11-40 Mosher, Chandler & Co., 116 Front street...Fruit and Orange Grader,  
 and I. X. L. Compound Vine and Treewash.  
 27 Moss, Geo. A., 932 Market street.....Display of Gloves, Parasols and  
 Umbrellas.  
 21 Moulton, E. C., 9 Main street.....Moulton Spring Bed  
 34 Muller, Miss Aggie, 104 Welch street..... Crazy Quilt and Shams  
 19 Muller, H., 1346 Turk street..... Zithers and String Instruments  
 5 Murray, W. H., 433 California street ...Ramie Fibre Separator Machine  
 46 Murray, W. H., 433 California street.....Display of Mohair  
 40 Mutual Manufacturing Co., 36 Jessie street... Yankee Baking Powder,  
 Spices and Extracts.  
 8 Mutual Patent Manufacturing Co., 120 Sutter St..Fire Escape in operation  
 13 Myers, Jno. T., 683 Market street... Household Range, Gasoline Range,  
 Lamps and Oil Stoves.  
 29 National Electric Development Co., 723 Market street.....Display of  
 Electrical Apparatus.  
 5 Naylor, Chas. E., 725 Market street..... Caligraph Typewriter  
 24 Neville & Co., 31 California street ..... Display of Leviathan Belting  
 18 Newson, J. J., 504 Kearny street.....One Metallic Paneled Door  
 9 Nixon, Cecil, 1519 Broadway street .....Model of American Steamship  
 13-14 Novelty Hardware Co., 1433 Market street....Fine Mechanics' Tools  
 Toolchest, and Kitchen Utensils.  
 25 Nowak Jacob, Arcata, Humboldt County.....Skins of Animals  
 28 Ober, Mrs. W. H., 332 Sutter street.....Ladies' Furnishing Goods,  
 Corsets, Waists, Union Flannel.  
 20 O'Brien & Sons, Golden Gate avenue and Polk street...General Display  
 of Carriages, Wagons, Buggies, etc.  
 34-36 Ochs, Miss Amelia, 1322 Buchanan street..... Star Tidies and  
 Painted Placque.  
 1 Ohmen, Engine Works, 107 Fremont street ..... Seventy-five Horse  
 Power Compound Engine.  
 35 Oviatt, Miss M., 189 Hyde street..... Oil Painting  
 29 Pacific Auxiliary Fire Alarm Co., 323 Pine street.....Auxilliary Fire  
 Alarm Apparatus and System.  
 41 Pacific Condensed Milk and Coffee Co., Los Angeles.....Condensed  
 Canned Milk and Coffee.  
 20 Pacific Coast Manufacturing Co., 645 Mission street.... Road-carts  
 and Carriages.

## Class.

- 29 Pacific Electrical Storage Co., 220 Sutter street . . . . . General Display of Electrical Machines and Appliances.
- 1 Pacific Gas Engine Co., 230 Fremont street . . . . . Gas and Vapor Engines
- 7 Pacific Laundry Machine Co . . . . . Washers, Manglers and Laundry Machinery.
- 2-5-11 Pacific Manufacturing Co., 575 Mission street . . . . . Pumps, Hoosier Tubular Artesian Well Tools, Lawn Mowers and Cyclone Windmills.
- 5 Pacific Roll Paper Co., 30 First street . . . . . Paper Cutters and Holders
- 21 Pacific Spring and Mattress Co., 762 Mission street . . . . . General Display of Folding Beds, Mattresses, Pillows, etc.
- 7 Paige, S. B., 321 Market street . . . . . Display of I & L Washer
- 5 Palmer & Rey, 405 Sansome street . . . . . Printing Presses, Material and Type Casting Machine.
- 18 Pape, H., 421½ Linden avenue . . . . . Wood Clock, Frame and Jewelry Box
- 29-40 Paraffine Paint Co., 310 California street . . . . . Display of Insulating Material, Preservative Paints, etc.; also Teredo Proof Pile Covering
- 24 Patrick, A. B. & Co . . . . . Sole Leather and Harness Leather
- 7 Pedigo Perfection Washer Co . . . . . Display of Pedigo Washers
- 18 Perrine, Mrs. Kate, 809 Oak street . . . . . Box and Screen of Carved Wood
- 21 Perrine, P., 1931 Ala. avenue . . . . . Self-closing Gate Hinge and One Reclining Chair.
- 17 Perrine, W. D., 809 Oak street . . . . . Samples of Slate
- 20 Peters Dash Co . . . . . Dashes and Carriage Findings
- 34 Peterson, Mrs. E., 1214 Ellis street . . . . . Three Flower-pieces in Paper
- 5-41 Pettijohn, W. A., 205 Mission street . . . . . Mill in Operation and "Breakfast Gem."
- 38 Pidge, D. M., 9 Geary street . . . . . Display of Show Cards
- 15 Pierce & Co., Chronicle Building . . . . . Exhibit of Cash Registers
- 40 Platt, Mrs. Dr. L . . . . . Lone Star Magnetic Oil
- 37 Platzer, P. J., 611 Franklin street . . . . . Display of Marble Figures
- 24 Porter, Slessinger & Co., 7 Battery street . . . . . Ladies' Boots and Shoes
- 40 Postel, H. & Co., Flood Building . . . . . Orange Cider
- 13 Progress Gas Stove Co., 622 Third street . . . . . Gas Cooking and Heating Stoves.
- 40 Radam's Microbe Killer, 1332 Market street . . . . . Display of Microbe Killer
- 24 Rafferty & Hoff, Serpentine avenue . . . . . Calf, Veal and Kip Skins
- 16 Rapid Safety Filter Co., 1209 Market street . . . . . Exhibit of Rapid Safety Filters.
- 34 Reed, Mrs. S., 1029 Post street . . . . . One Crazy Quilt
- 1 Regan Vapor Engine Co., 221 First street . . . . . Display of Vapor Engines
- 34 Reynard, Miss R. . . . . Crochet Woolwork and Cardboard Mottoes
- 45 Riley, Maggie, 240 Oak street . . . . . Collection of Buttons
- 24 Riley, John, Day and Dolores . . . . . Leather and Sides
- 2 Risdon Iron Works, Howard and Beale streets . . . . . Display of Pumps
- 11 Ritchey, J. B., 951 William street . . . . . Browning's Scientific Churn

## Class.

- 30 Roach, John, 429 Montgomery street . . . . . Display of Engineering and Surveying Instruments.
- 24 Rosenthals, 107 Kearny street . . . . . General Display of Boots and Shoes
- 34 Ross, Mrs. I. W., 3 Pearl street . . . . . Pillowsham and Bedspread
- 40 Rutledge, Jas., 507 Clay street . . . . . Morris' Poultry Cure
- 5 Ryland Robinson Co., 723 Market street . . . . . Type-writing Machines
- 45 Sale, W. W., 401 Market street . . . . . Display of Birds' Eggs
- 18-35-36 Sanborn, Vail & Co., 857 Market street . . . . . Display of Pictures, Frames, Mirrors, Mouldings and Mantels.
- 13 S. F. Gaslight Co., First and Natoma streets . . . . . Gas Stove and Ranges
- 8 Schenck, W. T. Y., 226 Market street . . . . . Display of Fire-extinguishing Apparatus.
- 34 Schendel, Mrs. W., 20 Thirteenth street . . . . . One Crazy Quilt
- 37 Schmidt, Mrs. Max, 124 Clipper street . . . . . Wood Mosaics
- 1-13-5 Schuster Bros., 306 Sutter street . . . . . Stoves, Ranges, Beer-pumps, Pressure Gauges and Gas Stoves.
- 34 Schwark, Mrs. Anna, 640½ Natoma street . . . . . Hair and Waxwork
- 38 Scofield Fielding, 24 Post street . . . . . Display of Penmanship
- 40 Schofield, J. L., 37 Post street . . . . . Beach's Curling Fluid
- 34 Scott, Mrs. E. M., 207 Valencia street . . . . . Fancy Silk and Satin Bedquilt
- 16 Scott, W. D., 207 Eddy street . . . . . Patent Air-vents
- 34-35 Sea, Mrs. Wm., 2122 Broderick street . . . . . Painted Firescreen, one Tablescarf and Tidies.
- 21 Sekofsky, Louis, 949 Mission street . . . . . Patent Secretary Desk
- 11 Sharpless, E. D., 203 Fremont street . . . . . Improved Cream Separator
- 13-14 Shreve, G. W., 525 Kearny street . . . . . Display of Guns and Steam Cooker
- 9 Sirieix Mariners' Compass Co., 9 Mission street . . . . . One Sirieix Compass
- 34 Slater, Mrs. J. H., 6 Turk street . . . . . Crazy Quilt, Shams, Robe of Spanish Work.
- 38 Slinn, J. B. . . . . Pen Sketching and Profile Cutting
- 26-21 Sloane, W. J. & Co., 641 Market street . . . . . Carpets, Rugs and Furniture
- 4 Small, I. H. & Son, 574 Brannan street . . . . . Double Circular Re-sawing Machine and Surface Planer.
- 40 Smith, A. H. & Co., Polk and Bush . . . . . Colognes and Sachet Powders
- 34 Smith, Mrs. W. C., 605 Laguna street . . . . . Persian Embroidery
- 40 Souther Manufacturing Co., 122 Market street . . . . . Abernethy's Green Ginger Brandy.
- 38 Southern, J. R., Phelan Building . . . . . Display of Engrossing, Card Writing, and Fine Penmanship.
- 35 Spanier, Mrs. Jos., 404 Eddy street . . . . . Oil Painting
- 35 Sproule, W. R., 509½ Fulton street . . . . . Water Color Picture
- 34-35 Squires, J. H., 114½ Turk street . . . . . Embroidery and Tufting Machines
- 36 Sroufe, Susan, 315 Jones street . . . . . Kid and Gauze Fans, Hand-painted
- 30 Starke & Kammerer, 713 Larkin street . . . . . Engineering and Surveying Instruments.

## Class.

- 39 Stateler, J. W., 957 Market street . . . . . Photographic views
- 11 Steele, Sebern . . . . . Hawkeye Grub and Stump Puller
- 34 Steiner, Miss Fannie, 918 Eddy street. . . . . Bedsread
- 36 Stewart, Miss Grace, 2709 Larkin street One Hand-painted Velvet Scarf
- 24 Stein Bros., Dolores street . . . . . Uppers, Sides and Kip Leather
- 34 Stracham, Mrs. W., 5 Hyde street . . . . . Lace Pocket Handkerchief
- 32 Stratton, D. E. . . . . Display of Clock
- 40 Stratton & Whelden, 453 Stevenson street. . . . . Carpet Beating System,  
Renovating, Dyeing and Cleaning.
- 27 Strauss, Levi & Co., 14 Battery street . . . . . Riveted Overalls and Pants
- 26 Strauss, Levi & Co. . . . . Woolen Goods—California Manufacture
- 20 Studebaker Bros., 201 Market street . . . . . Display of Carriages and 1 Sleigh
- 18 Swinging Window Co., 234 Montgomery street. . . . . Patent Sliding and  
Swinging Window.
- 35 Taber, Miss C., 566 Bryant street . . . . . One Oil Painting
- 41 T. A. Snider Preserve Co., Cincinnati, Ohio . . . . . Tomato Catsup, Chili  
Sauce, etc.
- 13 Taylor & Goodrich, 2 New Montgomery street . . . . . Ranges, Stoves, Hot Air  
Furnaces and Elevating Grate.
- 34 Teubner, Miss J., 1511 Clay street . . . . . Crazy Quilt
- 34 Tewksbury, Mrs. F. M., 1826½ Bush street. . . . . Crazy Quilt, Zephyr Work,  
Feather Wreath.
- 5 Thereux, P., 608 Montgomery street . . . . . Ice Machine and Picnic Ice Box
- 7 Therien, J. H., 504½ Sixth street . . . . . Pacific Washing Machine
- 5 The Samuel Hill Co., 29 Montgomery street . . . . . Edison Mimeograph
- 24 Thompson, D. W. . . . . Silver Mounted Saddle and Bridle
- 40 Thompson, G. W. . . . . Soda Water and Manufacture
- 45 Tobin, J. W., 711 Lyon street . . . . . California Woods, Polished and Natural
- 19 Todd & Douglass, Murphy Building . . . . . Douglass Banjos
- 41 Townsend, W. S., 627 Market street California Glace Fruits and Candies
- 6 Trafton, Chas., Yankee Jim, Placer Co . . . . . Pine Cone Riffle
- 11-20 Truman, Hooker and Co., 421 Market street . . . . . Agricultural Implements
- 11-40 Tuck, J. H. L., 611 Nineteenth street . . . . . Subsoil Irrigator and  
Phylloxera Destroyer.
- 21 Tucker, T., 1816 San Pablo avenue, Oakland. "Le Unique,"—a New Art for  
Interior Decoration, etc.
- 33 Turner, Jos., 209 Leidesdorff street . . . . . Frames of Prose and Poetry
- 19 Unger Cress, 26 Montgomery street . . . . . Display of Banjos
- 17 Union Pressed Brick and Terra Cotta Works, Flood Building . . . . . Display  
of Pressed Brick and Terra Cotta.
- 12 U. S. Construction Pipe Manufacturing Co. . . . . Exhibit of Pipe
- 33 U. S. Watch Co . . . . . Exhibit of Watches, etc
- 33 Valleau & Peterson, 534 Commercial street. . . . . Printing Press and Work
- 35 Van Alstine, Mrs. C., 225 Fourth street . . . . . Crayon Portraits
- 45 Van Doorman, N., 1243 Market street . . . . . Novelties from Wood and  
Bark of the "World's Fair Big Tree."

## Class.

- 20 Varney, T. H. B., 42 Fremont street.....Display of Bicycles
- 11 Varney, T. H. B., 42 Fremont street.....Agricultural Implements
- 36 Verhagen, A., 14 Dore street.....Display of Decorated China
- 34 Vestey, Mrs. E., 11 Mason street...Skeleton Leaves, Dried Flowers, etc.
- 38 Von Bremen, Miss B., 1226 Folsom street.....Freehand Drawings
- 46 Von Schroeder, Baron, J. H., 124 Sansome street.....Dried Prunes,  
"Petit Prune d' Agen."
- 20 Wadman, W. B., 997 Market street.....Musical Revolving Advertising  
Chariot.
- 30-33 Waide, Dan'l, 116 California street...Detroit Computing Scales and  
Automatic Roll Paper Printer.
- 33 Wasp, The.....Display of Lithographic Printing
- 20 Waterhouse & Lester, 16 Beale street.....Broncho Bicycle
- 13 Watson, C. W., First and Howard.....Exhibit of Gas Grates
- 40 Webb, C. H., 40 O'Farrell street.....Display of "Haemony."
- 34-21 Webb, Mrs. M. S., 1557 Market street.....Embroidered Chairs with  
Carved Backs.
- 40 Welch Inhaler & Medicine Co.....Exhibit of Inhalers
- 46 Westcott & Co.....Exhibit of Garden Seeds
- 1 West, J. C., 211 Mission street...Exhibit of Boiler Scale and Compound  
for Removing.
- 20 Western Top Co., 201 Market street.....Buggy and Canopy. Tops, and  
Business Buggy Body.
- 40 Veritè, La Bazaar, 325½ Geary street...Toilet Preparations and Articles
- 11 Whiteley & Co., Springfield, Ohio.....Display of Mowers
- 34 Wiegand, Miss Clotilde, 17 Seventh street.....Paper Flowers
- 43 Wieland, John, Market & Fremont.....Export and Draught Lager Beer
- 24 Wiener, E. D., 105 Stockton street.....Waterproof Shoes
- 13-16 Wiester & Co., 17 New Montgomery street..Vapor Stove, Gas Cooking  
Range, Water Filter and Water Back.
- 5 Willis, M. E., 1804 Mission street..Street Car Fare Box and Change Gate
- 43 Wilmerding & Co., 214 Front street.....Display of Peruvian Bitters
- 34-35 Wilson, Mrs. C., 1517 Larkin street.....Kensington Paintings
- 50 Wilson, E. M., 229 Kearny street.....Vaporizing Inhaler
- 1 Wilson, J. T., 31 Post street.....American Balance Slide Valve and  
Balanced Piston.
- 23 Woerner, David, Main and Harrison.....Display of Cooperage
- 40 Wolff, J., 116 California street.....Chewing Gums
- 41 Wolff, J., 116 California street.....Royal Dutch Cocoa
- 40 Wolff, J., 116 California street.....Baker & Co. Flavoring Extracts
- 14 Wood, C. F.....Rubber Stamps and Charm Goods
- 2 Woodin & Little, 312 Market street...Triple-Acting Force and Irrigation  
Pump.
- 25 Wyman, J. F., 304 Market street.....Fay's Waterproof Manilla for  
Building Purposes.

CATALOGUE  
OF THE  
ART DEPARTMENT.

OIL PAINTINGS.

Title.	Artist.
Springtime in Napa Valley .....	Wm. Keith
The Old Road .....	Wm. Keith
Mt. Tamalpais .....	Wm. Keith
Sunset.....	Wm. Keith
California Oaks, near Berkeley .....	Wm. Keith
The Coming Storm .....	Wm. Keith
Evening.....	Wm. Keith
In Pasture .....	Wm. Keith
Sun Rising Through the Fog.....	Wm. Keith
Sunset, North Fork American River.....	Wm. Keith
At Rest.....	Wm. Keith
Mt. Tamalpais, San Anselmo Valley.....	Wm. Keith
Donner Lake.....	Wm. Keith
Early Springtime.....	Wm. Keith
A Study.....	Wm. Keith
Morning, Sonoma Valley.....	Wm. Keith
Salinas Valley.....	Wm. Keith
A Study.....	Wm. Keith
Near Glacier Bay, Alaska.....	Wm. Keith
In Napa Valley.....	Wm. Keith
Spring Morning.....	Wm. Keith
Edge of the Pasture. ....	Wm. Keith
View from Piedmont .....	Wm. Keith
Wood Scene.. ..	Wm. Keith
Springtime, near Berkeley.....	Wm. Keith
A Study.....	Wm. Keith
Portrait.....	Benoni Irwin
Still Life.....	Elenor Warren
Santa Barbara Mission .....	A. Joullin
Mystic Shrine (Cartoon).....	A. Joullin
Castle Rock, Santa Barbara.....	A. Joullin

Title.	Artist.
"Up For Repairs" .....	A. Joullin
Marechal Neil Roses.....	A. Joullin
Landscape near Bas-Meudon....	A. Joullin
Jacqueminot Roses. ....	A. Joullin
Sketch in West Oakland.....	Lillie L. Freeman
Sketch of University Grounds..	Lillie L. Freeman
Sketch in West Oakland. ....	Lillie L. Freeman
Portrait (Miss X).....	A. Joullin
Cherry Blossoms.....	A. Joullin
Santa Barbara Beach.....	A. Joullin
Bois le Roi, Forêt de Fontainbleau.....	Chas. Rollo Peters
On the Beach, Katwijk, Ami Zee, Holland.....	Chas. Rollo Peters
"The Old Rock," Cazadero.....	Chas. Rollo Peters
Fishday, Katwijk, Holland.....	Chas. Rollo Peters
Redwood Interior.....	Chas. Rollo Peters
Study of Boy's Head.....	Chas. Rollo Peters
Sketch, Concerneau, Brittany..	Chas. Rollo Peters
Study from Nature.....	Chas. Rollo Peters
Study of a Dutch Trawler.....	Chas. Rollo Peters
The Old Mill, near Zaandam..	Chas. Rollo Peters
"The Old House".....	Chas. Rollo Peters
Study of Girl's Head.....	Chas. Rollo Peters
Legend of Brittany. ....	Chas. Rollo Peters
By the Roadside.....	Chas. Rollo Peters
Study of a Breton Child's Head.....	Chas. Rollo Peters
Outdoor Study of a Girl (Brittany).....	Chas. Rollo Peters
Scrub Oak, Alameda .....	Chas. Rollo Peters
Summer .....	Chas. Rollo Peters
The "Bon Homme Richard" off Flamburg Head.....	Chas. Rollo Peters
The "Friday".....	Chas. Rollo Peters
Study of a Child .....	Chas. Rollo Peters
Study of Aspen Tree, Mill Valley.....	Chas. Rollo Peters
Study of Old Dutch House.....	Chas. Rollo Peters
Dutch Trawlers.....	Chas. Rollo Peters
The Quimperlé River, Brittany.....	Chas. Rollo Peters
In the Meadows, Brittany.....	Chas. Rollo Peters
Study of a Head.....	Chas. Rollo Peters
Dutch Luggers off Dordricht.....	Chas. Rollo Peters
Chrysanthemums.....	Alice B. Chittenden
Eschscholtzia.....	Alice B. Chittenden
Peaches .....	E. M. McLellan
Iris.....	Lillie L. Freeman
Cherries.....	Miss Mary Bailey
Roses.....	Alice B. Chittenden
Nasturtiums.....	Alice B. Chittenden



Title.	Artist.
Vegetables.....	Lillie L. Freeman
Portrait.....	Chas. Carlson
The Silent Vote .....	S. W. Shaw
The Death Watch .....	Lee Lash
The Politicians. ....	Lee Lash
Portrait, Sam.....	Lee Lash
Old Sailor's Home... ..	Lee Lash
Reverie (Portrait).....	E. Narjot
Hunting Trophy.....	E. Narjot
Waiting for Orders.....	E. Narjot
Indian Camp (Return of Razzia).....	E. Narjot
Lolita .....	E. Narjot
Portrait of Baby.....	E. Narjot
Study of Roses.....	E. Narjot
Her Ultimatum.....	E. Narjot
Chinese Feast.. ..	E. Narjot
Santa Barbara.....	E. Narjot
Santa Monica (Looking South).....	E. Narjot
Avalon (Catalina Islands).....	E. Narjot
Santa Monica (Looking North).....	E. Narjot
Portrait of Dog.....	E. Narjot
Hunting Trophy.....	E. Narjot
Boys Bathing. ....	E. Narjot
Cat and Quail.....	E. Narjot
Grandmamma.....	E. Narjot
In the Bathroom .....	E. Narjot
Fidelia (Spencer's Fairie Queen). ....	E. Narjot
Scene in Yolo County.....	E. Narjot
Peonies and Roses.....	E. Narjot
Norma.....	E. Narjot
Rabbit and Robins. ....	E. Narjot
Scene in Yolo County.....	E. Narjot
Regrets .....	E. Narjot
Fruit.....	S. M. Brookes
Squirrel.....	S. M. Brookes
Fruit.....	S. M. Brookes
Still Life.....	S. M. Brookes
Bronze.....	S. M. Brookes
Still Life.....	S. M. Brookes
Fish.....	S. M. Brookes
Fish.....	S. M. Brookes
Fowls. ....	S. M. Brookes
Calf.....	S. M. Brookes
Flowers.....	S. M. Brookes

Title.	Artist.
Roses.....	S. M. Brookes
Portraits (Water Color, painted on Ivory).....	S. M. Brookes
Roses.....	S. M. Brookes
Fish.....	S. M. Brookes
Smelt.....	S. M. Brookes
Apples.....	S. M. Brookes
Fruit.....	S. M. Brookes
Fruit.....	S. M. Brookes
Chickens (Genre).....	S. M. Brookes
Cherries.....	S. M. Brookes
Cat and Fish (Genre).....	S. M. Brookes
Still Life.....	S. M. Brookes
Fish.....	S. M. Brookes
Peaches.....	S. M. Brookes
Still Life.....	S. M. Brookes
Apples.....	S. M. Brookes
Still Life.....	S. M. Brookes
Apples.....	S. M. Brookes
Fish.....	S. M. Brookes
Apples.....	S. M. Brookes
Fruit and Flowers.....	Mrs. M. E. Lauden
Springtime (Santa Cruz).....	R. D. Yelland
Windsor Castle.....	R. D. Yelland
Spring Morning (Santa Cruz).....	R. D. Yelland
Columbia River.....	R. D. Yelland
Study—Cypress Point, Monterey.....	R. D. Yelland
Newlyn, Cornwall, England.....	R. D. Yelland
Portrait.....	Benoni Irwin
Navarro Coast, Mendocino.....	H. Schnable
The Wrestling Pad.....	Lee Lash
Portrait.....	Benoni Irwin
The Large Laurel (Outdoor Study).....	J. B. Wandesforde
Portrait (Mr. Spadoni).....	A. Bolognese
Portrait.....	Benoni Irwin
San Leandro Creek.....	J. B. Wandesforde
San Francisco Bay.....	W. A. Coulter
Contra Costa Valley.....	A. Bolognese
Foggy Morning on the Bay.....	W. A. Coulter
Cypress Point, Monterey.....	W. A. Coulter
Alameda Flats.....	W. A. Coulter
At Mill Valley.....	W. A. Coulter
Moonlight on the Bay.....	W. A. Coulter
Off the Farallones.....	W. A. Coulter
Her Mother's Joy.....	A. Bolognese

Title.	Artist.
Portrait—Miss Grey.....	A. Bolognese
Portrait.....	A. Bolognese
An Italian Girl.....	A. Bolognese
Geraniums.....	Alice B. Chittenden
La France Roses.....	Josephine Edwards
Lilacs and Roses.....	Miss Mary Bailey
Sunset.....	Miss Mary Williams
Study of Onions.....	Miss Mary Williams
Still Life Study.....	Miss Mary Williams
Study of Quinces.....	Miss Mary Williams
Study of Apples.....	Miss Mary Williams
Study of Cocoanuts.....	Miss Mary Williams
Study of Pink Roses.....	Miss Mary Williams
Study of Lamarque Roses.....	Miss Mary Williams
Chrysanthemums.....	Miss Mary Williams
Morning Glories.....	Mrs. M. E. Lauden
Grapes.....	Mrs. M. E. Lauden
Apples.....	Mrs. M. E. Lauden
Grapes.....	Mrs. M. E. Lauden
La France Roses.....	Miss R. F. Lewis
Near the Bay, San Francisco.....	Miss R. F. Lewis
Roses.....	Miss R. F. Lewis
Morn.....	Miss Mary Williams
Birds.....	Ada Nolte
Dragon Lily.....	Ada Nolte
Callas.....	Ada Nolte
On the Shore, Etreta, France.....	Susan Sroufe
Mother and Child.....	Susan Sroufe
Afternoon.....	Mrs. L. L. Freeman
Chrysanthemums.....	Lillie L. Freeman
Canterbury Bells.....	Ada Nolte
Sweet Peas.....	Lillie L. Freeman
Homer Roses.....	Lillie L. Freeman
On the River Thames, showing Tower of London.....	Wm. A. Coulter
Still Life.....	Pauline Powell
The Sentinel, Yosemite.....	Ella Penniman
Trysting Place.....	Clarkson Dye
Evening.....	Clarkson Dye
Sketch—Rector Cañon, Napa Valley.....	L. E. Rea
Kitchen at Camp Bohemia.....	Harry S. Fonda
Profile Artist.....	Henry Bacon
The Long Day.....	Henry Bacon
Waiting for the Boat.....	Henry Bacon
Taking on the Pilot.....	Henry Bacon

Title.	Artist.
Benediction of the Boat .....	Henry Bacon
Visit to the Farm .....	Henry Bacon
The Telephone .....	Henry Bacon
Head of Pauline .....	Henry Bacon
In the Churchyard .....	Henry Bacon
Head of Mani .....	Henry Bacon
The New Moon .....	Henry Bacon
After the Fête .....	Henry Bacon
Sunset .....	Henry Bacon
Maine .....	Henry Bacon
Our Artist in Venice .....	Henry Bacon
On the Look-out .....	Henry Bacon
Bandit's Son, Corsica .....	Henry Bacon
Cliffs at Etretat .....	Henry Bacon
On a Furlough .....	Henry Bacon
Normandie Farm .....	Henry Bacon
Normandie Girl .....	Henry Bacon
Barber Shop .....	Henry Bacon
Normandie Maiden .....	Henry Bacon
Sleeping .....	Henry Bacon
Fishing Boat .....	Henry Bacon
Learning to Walk .....	Henry Bacon
Water Carrier .....	Henry Bacon
Head of Louise .....	Henry Bacon
Apple Bee .....	Henry Bacon
When my Ship Comes .....	Henry Bacon
On the Shore .....	Henry Bacon
Old Shepherd .....	Henry Bacon
Old Postman .....	Henry Bacon
Our Pet .....	Henry Bacon
Swinging on the Gate .....	Henry Bacon
Mermaid .....	Henry Bacon
Tending Baby .....	Henry Bacon
Fort at Ajaccio .....	Henry Bacon
Watching .....	Henry Bacon
Snowballs .....	K. H. Wickes
Shepherd Boy (on glass) .....	E. M. McLellan
Italian Girl .....	Mrs. S. F. Lockwood
Morning on Fallen Leaf Lake .....	Geo. E. Hall
Evening on Fallen Leaf Lake .....	Geo. E. Hall
St. David's Head, South Wales .....	J. H. Massie
Michael's Mount .....	J. H. Massie
Fruit .....	Mrs. S. F. Lockwood
Portrait of Von Gluck .....	Edith McLellan

Title.	Artist.
Thistles.....	Mrs. Farnham
Spring.....	T. Corbette
Chromatilla Roses.....	C. S. Anderson
Waterfall.....	T. Corbette
Sonoma Valley.....	F. Arriola
St. Cecilia.....	Freddi
Lady of the Lake.....	Freddi
Indian Washerwomen (near Santa Barbara)....	Miss B. E. Stringer
Pansies.....	Mabel Lemos
Grapes.....	Miss M. Oviatt
Monterey Bay.....	Jos. Geissler
Sunset (Monterey Coast).....	E. M. McLellan
Scene on Lake George.....	G. E. Hall
View of Marblehead.....	G. E. Hall
Beverly Beach.....	G. E. Hall
Mountain Lake.....	G. E. Hall
Meadow.....	B. E. Stringer
Sketch.....	B. E. Stringer
Morning.....	B. E. Stringer
Christmas Card.....	E. J. Reeves
Spring Morning.....	Jos. Geissler
In the Alps.....	Jos. Geissler
Box Mill.....	Jos. Geissler
Wild Duck.....	C. Purves
La France Roses.....	Pauline Powell
Mirror.....	E. M. McLellan
Beef.....	Mrs. M. Cooley
Arab's Head.....	C. Purves
Wild Flowers.....	Martha Patterson
Three Brothers.....	T. Corbette
Lilacs.....	L. J. Reeves
Cliff House.....	Jos. Geissler
Mount Hood.....	C. Purves
Snowballs.....	E. M. Wickes
Peaches and Grapes.....	J. H. Massie
Eschscholtzia.....	E. M. Wickes
Kittens.....	E. M. Wickes
Champagne and Oysters.....	Pauline Powell
Samoan Islands.....	Mrs. C. L. Haskell
Portrait—Lottie Haskell.....	Mrs. C. L. Haskell
Roses.....	J. H. Massie
Sketches—Rector Cañon, Napa Valley.....	L. E. Rea
Redwoods, Mendocino.....	Mrs. M. V. Cooley
Eschscholtzia.....	Harry Fonda

Title.	Artist.
Eschscholtzia .....	L. S. Reeves
Cosmos .....	Martha Patterson
The Schoolhouse .....	Martha Patterson
Mozart and His Sister .....	Miss M. Oviatt
Adam Roses .....	Martha Patterson
Chrysanthemums .....	L. J. Reeves
Morning Glories .....	L. J. Reeves
Eschscholtzia .....	K. H. Wickes
Oranges .....	Pauline Powell
Screen .....	E. M. McLellan
Screen .....	Mrs. J. D. Gibbs
Screen .....	Mrs. Wm. Sea
Works by the Pupils of the School of Design .....	
Daughter of Jephthah .....	W. McCormick
Wall Flowers .....	E. M. McLellan
Portrait .....	J. Carabain
Portrait .....	J. Carabain
Portrait .....	J. Carabain
Portrait .....	J. Carabain
Portrait .....	J. Carabain
Branch Postoffice (in the Sierras) .....	J. C. Boyd
The Passing Storm .....	Wm. Keith
Sunrise in Selkirk Mountains .....	Clarkson Dye
Fan .....	Susan Sroufe
Prince Esquimaux .....	E. M. Wickes
Scene on the Rhine .....	Mabel Burnett
Moonlight on the Nile .....	Mabel Burnett
Lemhigh Valley (Idaho) .....	Jacob Mund
Tulips .....	Gussie T. Graves
Nasturtiums .....	Mrs. Susan F. Lockwood
Henry IV. et Gabrielle d'Estree .....	Edith M. McLellan
The First Kiss .....	Miss Gertrude Matthews
Bouquet of Orchids .....	H. l'Ecuyer
Prospectors .....	W. McCormick
Plotting Mischief .....	Miss Gertrude Matthews
Roses .....	Mabel Lemos
Portrait .....	Henry Leob
Horses' Heads .....	Miss Gertrude Matthews
Barnyard Sketch .....	Clarkson Dye
Hay Schooner .....	Clarkson Dye
Mission Dolores .....	Clarkson Dye
At Sausalito .....	Clarkson Dye
Near Berkeley .....	Clarkson Dye
San José de Guatemala, C. A. ....	Clarkson Dye

Title.	Artist.
Crayon Drawing.....	Mabel Doyle
Crayon Portrait.....	Puélles
Crayon Drawing.....	Mabel Doyle
Empress Eugenie and Court Ladies at Fontainbleau—1854.....	Unknown
Crayon Drawing.....	Mabel Doyle
Portrait (India ink).....	R. Winter
Apples.....	Mrs. M. V. Cooley
Lillies.....	Mrs. John Pettee
Cypress Point, Monterey.....	Mrs. M. V. Cooley
Yosemite Valley.....	Miss C. Taber
Dogwood.....	Gussie T. Graves
Birds.....	Miss M. Bailey
Poppies.....	Mrs. John Pettee
California Fruits.....	W. M. Axtell
Lilacs.....	N. A. O'Malley
Dogs.....	Mrs. S. M. Farnham
Raspberries.....	Mrs. S. F. Lockwood
Portrait of Mozart.....	Edith M. McLellan
La France Roses.....	Mrs. John Pettee
Marine.....	Edith M. McLellan
Lake Como.....	J. J. Reinhardt
To the Sulphur Springs.....	Harry S. Fonda
Portrait.....	S. Claus
Roses.....	Mrs. Bennett
Photographs.....	
From the Antique, presented to the Mechanics' Institute by John S. Hittell.	
Portrait.....	Bessie Ingles

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## MRS. F. L. ZIMMERMAN'S COLLECTION.

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The Welcome Comrade.....	Koloman Déry
Interior of an Arabian Mosque.....	R. Weisse
The Favorable Message.....	A. A. Lesrel
An Armorer of the Seventeenth Century.....	A. L. Jacomin
The Monastery Kitchen.....	M. Scholtz
The First Lesson.....	Paul Wagner
"All that's Good Comes from Above".....	A. Kraus
Exterior of a Hindoo Mosque.....	Edwin L. Weeks
The Sweetest Flower.....	E. de Beaumont

## WATER COLORS.

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Title.	Artist.
Head of Owen's River .....	Wm. Keith
Spring .....	Wm. Keith
A Study .....	Wm. Keith
A Sketch .....	Wm. Keith
A Foggy Day .....	Wm. Keith
California Coast Range .....	Wm. Keith
A Quiet Nook .....	Wm. Keith
Spring (California) .....	Wm. Keith
Summer .....	Wm. Keith
Saucelito .....	A. Altman
Boat House .....	A. Altman
The Old Mill .....	Clarkson Dye
San Leandro Creek .....	J. B. Wandesforde
My Kitchen .....	J. B. Wandesforde
My Tent .....	J. B. Wandesforde
In Berkeley .....	J. B. Wandesforde
In Calaveras Valley .....	J. B. Wandesforde
Holy Lock, Firth of Clyde .....	J. B. Wandesforde
Chinese Fishing Waters .....	J. B. Wandesforde
Early Morn .....	J. B. Wandesforde
Magdalen (painted 1844) .....	J. B. Wandesforde
Old Adobe, Little Calaveras .....	J. B. Wandesforde
Ruined Adobe House .....	J. B. Wandesforde
On the Clyde .....	J. B. Wandesforde
Devonshire Coast Scene .....	J. B. Wandesforde
Near Milpitas .....	J. B. Wandesforde
English Village Scene .....	J. B. Wandesforde
The Morning Walk .....	J. B. Wandesforde
In Kokana Cañon .....	J. B. Wandesforde
Crossing the Brook .....	J. B. Wandesforde
Near Torquay .....	J. B. Wandesforde
The Gypsy Tent .....	J. B. Wandesforde
Choppy Sea .....	H. R. Hopps
Sloop "Lark" .....	H. R. Hopps
A Mid-channel Breeze .....	H. R. Hopps
Fancy Head (Pastel) .....	O. Kunath
Portrait (Pastel) .....	O. Kunath
Sinfonia .....	O. Kunath
Diploma .....	O. Kunath
Study of Head (Crayon) .....	O. Kunath



Title.	Artist.
Sketch.....	M. Eggers
Lake Tahoe.....	Mrs. Stanley Taylor
Lake Tahoe.....	Mrs. Stanley Taylor
La France and Duchess Roses.....	Madame G. Hofer
Valentine.. ..	Madame G. Hofer
Carnations.....	Madame G. Hofer
Lamarque Roses .....	Madame G. Hofer
Portraits (Enamel Painting).....	Madame G. Hofer
Portrait.....	Miss Stearns (of Maine)
Study of Head.....	C. Jorgensen
Study of Head.....	C. Jorgensen
Study of Head.....	C. Jorgensen
Moss Beach, Monterey.....	C. Jorgensen
Cypress Point, Monterey.. ..	C. Jorgensen
Creek Scene, Ross Valley.....	C. Jorgensen
Protestant Orphan Asylum.....	C. Jorgensen
Study.....	C. Jorgensen
Portrait.....	C. Jorgensen
Study of Head.....	C. Jorgensen
Study of Head.....	C. Jorgensen
Clam Digger, Alameda Beach.....	C. Jorgensen
Beach Scene.....	C. Jorgensen
"Come Along".....	C. Jorgensen
St. Dominic's, Bologna.....	A. Bolognese
Two Arabian Sheiks. ....	Wm. Harring
Pastel (after Debat Powson).....	K. H. Wickes
Portrait.....	C. Boedewig
The Arab's Destination.....	Wm. Harring
A Squall off the Farallones.....	H. R. Hopps
Jacob's Well, Holy Land.....	Wm. Harring
Pastel (after Falkenberg).....	K. H. Wickes
Portrait of Lady.....	Olivia Kingsland
A California Diamond.....	Olivia Kingsland
Winter.....	Hugo Fisher
Portrait (Pastel).....	K. H. Wickes
Crayon Head.....	C. Van Alstine
Crayon Head.....	C. Van Alstine
Study of Grapes.....	K. Takahashi
Banks of the Seine, France.....	Susan Sroufe
Chrysanthemums.....	T. E. Vassault
Mott Haven Canal, N. Y.....	Clarkson Dye
Deserted Cabin... ..	Susan Sroufe
Roses.....	T. E. Vassault
Fishing Boat, Venice.....	Susan Sroufe

Title.	Artist.
On the Stage Road, Bolinas.....	E. M. Wickes
Morning Glories.....	Mrs. L. C. Kelly
Swain Gifford's Studio.....	T. E. Vassault
Bolinas Headland.....	E. M. Wickes
A Warm Day.....	Susan Sroufe
Twelfth Street, Oakland.....	S. Austin
Cazadero.....	S. Austin
Ross Valley.....	S. Austin
Austin Creek, Cazadero.....	S. Austin
High Street, Alameda.....	S. Austin
Courtyard, Florence.....	A. Bolognese
Snow Scene.....	Clarkson Dye
Excellent!.....	A. Jacquemet
La Toilette du Fiere.....	A. Jacquemet
Oranges.....	A. Jacquemet
Grapes.....	A. Jacquemet
French Cantaloupes.....	A. Jacquemet
Peaches.....	A. Jacquemet

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## STATUARY.

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Statue of Marshall.....	F. Marion Wells
The Last Arrow.....	F. Happersburger
Sketches for Groups of Statuary for Hall of Records.....	F. Happersburger
Top Figure of Fountain Design.....	F. Happersburger
Portrait, Carrara Marble.....	F. Happersburger
Portrait, Bust of Carl Formes.....	R. Schmid
Portrait—Bust of M. H. de Young.....	R. Schmid
Proposed Statue of James Lick.....	R. Schmid
California (in terra cotta).....	R. Schmid
Sketch for Groups for Hall of Records.....	R. Schmid
Model for the Carl Formes Monument.....	R. Schmid
Portrait Medallion of M. H. de Young.....	R. Schmid
Portrait Medallion.....	R. Schmid
Portrait—Bust of the late Mr. N. Luning.....	R. Schmid
Sketch for a Fountain.....	R. Schmid
Portrait—Bust of the late Mrs. Campbell.....	R. Schmid
Idea for Grave Monument.....	F. Happersburger

# *Report of the Committees of Awards*

UPON THE

VARIOUS ARTICLES EXHIBITED

AT THE

## Twenty-fifth Industrial Exposition

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THE recommendations of the Jurors as to what the premiums should be have been omitted from the Reports; the awards, as given by the Board of Managers, are made in accordance with the Premium List, except where specially mentioned. In a few instances meritorious articles were unintentionally overlooked or omitted by the Committees in their examination. Such cases were considered by the managers, and will be found in the proper Class. ALL awards, either Medals or Diplomas, are FIRST PREMIUMS, no second-best being given. A \* indicates that the articles were for Exhibition only.

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### DIVISION I.

#### MANUFACTURED PRODUCTS—MACHINERY.

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#### CLASS No. 1.

#### Engines, Boilers and Appliances.

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*To the President and Board of Managers of the Mechanics' Institute Exposition:*

GENTLEMEN:—In compliance with your request we have carefully examined the various exhibits in Class 1, and take pleasure in submitting this report, and suggesting awards:

JOSHUA HENDY MACHINE WORKS—The Russell Automatic Engine.

This is an automatic slide valve engine of strong and simple design, the bed being of the semi-girder type with projecting cylinder.

The design and workmanship of the engine are of a high character; and we notice many points of superiority in this engine to smaller engines of the same class.

Silver Medal.

C. B. JOHNSON & Co.—Magnesia Sectional Covering.

The necessity, from the standpoint of economy, of covering the exposed surfaces of boilers, steam-pipes, etc., is becoming more and more evident, as steam users learn to appreciate the great loss and risk they incur from the heat radiated from uncovered pipes, etc. We have examined this covering thoroughly, and are of the opinion that it is exceptionally meritorious, being light, strong and an almost perfect non-conductor. The method of applying it is also exceedingly simple, no skilled labor being required. Silver Medal.

JOHN MAILER—Grate Bar and Furnace Door Liner.

Mr. Mailer has given so much study and attention to his specialties, and has succeeded so well, that anything which we could say would be merely a reiteration of what every one says that have used them. "They are the best."

For best Grate Bar.

Bronze Medal.

For best Door Liner.

Diploma.

J. T. WILSON.—American Balanced Slide Valve.

This valve consists simply of two pieces, a cast-iron snap ring, with its inner face beveled to fit over and against a conical disk.

The ring being slightly expanded over the cone, is always carried upward by its own elasticity and is thus held against the steam chest cover. The disk is the cone on which the ring is set. There is a small relief hole through the bolts from the interior of the ring to the exhaust. The ring turns round on its beveled face, always wearing itself true, and can never stick. The area of the lower edge of the ring exposed to steam pressure is very small, consequently it is not forced hard against the chest cover. The ring and disk is made the proper size to relieve the valve of 85 per cent. of pressure. It is made entirely in the lathe.

Taking into consideration the fact of its trifling cost, the facility with which any slide valve can be balanced in this manner, and the wear of the unbalanced valve, its seat and connecting machinery, this balance recommends itself on sight.

Silver Medal.

American Steam Balanced Piston.—This is a very simple device and of cheap construction. It does away with the old-time spider, bullring, follower and follower bolts, and makes the piston head solid.

The piston consists of a solid piston head, with two snap rings of the usual kind. These rings, instead of being perpendicular, are set obliquely to the axis of the piston, being furthest apart at the bottom, as shown, so that the difference in area between the rings of the bottom and top half of the piston is enough to support or float the piston in the cylinder; the steam acting as follows:

When steam is admitted to either end of the cylinder, the rings are forced to the opposite side of the grooves in which they are fitted. Steam thus passes under them and up past the dowal pin, which is directly on the top of the piston on inside of rings, thence down through a small hole into interior of piston, and out hole to the bottom, so as to fill the space around the piston between the rings; the greater area being at the bottom, the piston is raised

from the bottom of cylinder; this small inlet is closed, thus forming an automatic check valve and preventing an upward pressure. The piston is thus balanced, and friction and wear in the cylinder by the piston head is prevented. When the steam is shut off by the throttle, the pressure between the rings forces them to the outside of grooves, thus retaining the pressure in the interior of the piston, which is sufficient to carry the piston while making any ordinary stop, as on locomotives. It can be applied to any ordinary piston by simply putting in a new bullring. Bronze Medal.

M. B. DODGE—The “Dodge” Compound Engine.

The “Dodge” Compound Engine exhibited by the inventor, Mr. M. B. Dodge, of this city, has attracted considerable attention and is deserving special mention.

The Engine exhibited has been running electric light dynamos satisfactorily during the entire Exhibition.

This is a vertical Engine with cylinder  $8\frac{1}{2}$  and 12 inches in diameter and 12 inches stroke. The principal new features are the “compounding” in one cylinder and the placing on top of cylinder a vacuum chamber into which works an extension of the piston, the object of which is to create on the down stroke of engine a vacuum which will counterbalance the weight of the moving parts of the engine. This extension on the Piston is  $8\frac{1}{2}$  inches in diameter, and the diameter of the steam cylinder 12 inches; this leaves an annular space all around, and this space is practically the high pressure cylinder; the space under the piston is the low pressure cylinder. The governor is of the shaft type, and is too well known to need description. This engine shows without going into detail that considerable thought has been expended upon it; and your committee would recommend that, as no award has been offered for this design of engine, a special award be made for the best Vertical Compound Engine. Silver Medal.

REGAN VAPOR ENGINE Co.—Gas Engine in daily use, running the Sharpless Cream Separator.

SCHUSTER BROS.—Pressure Guages.

HARDING ELECTRICAL MANUFACTURING Co.—Gas Engine.

The engine is of the horizontal type, having the same cycle as the well-known Otto Engine.

The exhaust is water-jacketed and bolted to the side of the cylinder. The valve is of cast iron, having a cast-iron stem. It is operated by a lever which receives the movement from a cam, making half the number of revolutions of the crank shaft. The cam is so arranged that the lever receives an up-movement for the purpose of lifting the exhaust valve, and then a down-movement for the purpose of opening the gas inlet valve.

The engine is governed by the omission of explosions when the speed is about normal. This is accomplished by throwing aside a catch on the end of the exhaust valve lever, operated by a centrifugal governor in the fly wheel.

The gas is ignited by an electric spark. The contact points, one of which is movable and the other stationary, are in the interior of the cylinder. The stems of the contact points pass through a plug in the cylinder head, the stationary point being electrically insulated from the body of the engine, and the movable point being in electrical contact with the engine. The latter receives its movement from a cam on the same gearing which operates the exhaust valve. The plug carrying the contact points is so made that it can be readily replaced by a duplicate. The engine is rated at 5 H. P.

Silver Medal.

WM. H. OHMEN.—75-Horse Power Compound Engine.

This Engine which has been running steadily during the Fair, driving a 500 Light Dynamo, is a development of the Ohmen Simmonds Automatic Cut-off Engine.

The High Pressure Engine is bolted to and concentrically with the low pressure overhanging the rear end of the bed. The valves of the high pressure are the same as those employed by this builder on all his Automatic Engines, and consist of two taper rocking valves, one working within the other, the cut-off valve being operated by a movable eccentric which is actuated by a wheel governor.

The Low Pressure Cylinder has a simple slide valve. Taking the Engine as a whole it presents an exceedingly compact and handsome appearance, and illustrates in how simple a manner it is possible to construct a Compound Engine.

Grand Silver Medal.

GOLDEN STATE AND MINERS' IRON WORKS.—Thompson's Independent Automatic Cut-off Compound 80-Horse-power Slide Valve Engine.

This Engine is similar to the one exhibited by this Firm in the Fair last year, with the addition of a low-pressure cylinder having an ordinary slide valve.

With this exception the description of last year applies to this Engine, and from which we cannot do better than quote: "This Engine, which is the Automatic Independent Cut-off class, presents many radical improvements upon those which have hitherto been considered the highest type of steam engineering practice, inasmuch as the same results are obtained, with a great reduction in the number of working parts and joints.

"The engine is compact, strong and symmetrical in design, and presents a handsome appearance. It is fitted with four plain slide-valves, working entirely independent of each other in separate chambers, all four valves and cut-off being operated with one eccentric. It is a remarkable feature of this engine that all four valves and cut-off are operated with but one joint or working part between them and the eccentric, which is exceedingly rapid. The cut-off is operated by steam pressure. Owing to its simplicity, repairs would be reduced to a minimum."

In its new form it presents an exceedingly handsome appearance; the workmanship and finish are of the highest order.

Grand Silver Medal.

**JOSHUA HENDY MACHINE WORKS.**—Display of Steam Engines and Steam Users' Appliances.

This is a very complete and carefully-selected display of portable engines and boilers, and the many small but essential details employed by steam users. The exhibit consists of portable engines, boilers, steam hoists, vertical and horizontal boat engines, steam pumps, flue cleaners, boiler injectors, water pipes, steam gauges, whistles, oil cups, water gauges, wood pulleys, spiral packing, and many other devices and appliances connected with the use of steam.

Grand Silver Medal.

Respectfully submitted,

W. H. SMYTH,  
T. H. MACDONALD,  
OWEN PEGG,  
P. H. REARDON,  
Committee.

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## CLASS No. 2.

### Hydraulic Machinery and Steam Pumps.

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THE undersigned jurors on Class 2 have examined the various exhibits, and respectfully report on the same as follows:

**DOW STEAM PUMP WORKS.**—Steam Pumps, Direct and Double-acting.  
Seven sizes of this Pump were exhibited in motion.

For best direct and double-acting Steam Pumps, in motion.

Grand Silver Medal.

**Miners' Sinking Pump.**—This is a modification of the Dow Steam Pump adapted for use in sinking mining shafts. It is compact and well adapted for the purpose. One size was exhibited, though it was not connected for running. They are well known in mining circles, and many are being manufactured for Mexico, China and Australia.

Silver Medal.

**Deep Well Steam Pump.**—A large Deep Well Pump of the Dow Patent was exhibited in motion. This type of the Dow Steam Pump is so well known that a detailed description is unnecessary, it being met with nearly everywhere on the Pacific Coast that steam is used, which fact demonstrates that it is not alone appreciated in the Twenty-fifth Industrial Exposition.

Silver Medal.

**Three-Plunger Pump in motion.**—This Pump was designed to meet a long-felt want, and it may be said of it that it combines simple mechanism with the most effective results in power pumping. It is well adapted for Hydraulic Elevator purposes, as the discharge is perfectly steady at any pressure desired. It is largely operated by Electric and Gas Motors.

Bronze Medal.

**Dow Duplex Steam Pump.**—This form of Duplex Steam Pump is well conceived. Simple in design, and has but few moving parts in the valve motion.

W. H. HENRY.—Lechtenberg Steam Pump.

This is a direct acting pump for feeding boilers, mining tanks, etc.

The valve motion is very simple; it consists in a slide valve, working between two seats slightly inclined towards each other, forming an almost balanced valve, leaving just enough pressure on top of valve to insure perfect contact with the valve seat.

To the piston rod is fastened a tappet arm carrying a spring inclosed in a brass case, through which the valve stem passes.

This spring works between two collars, fastened to enlarged end of valve stem which slides in two standards, each carrying a lever with a dog or stop to hold the collars while the spring is being compressed.

The position of the stops is such that when one stop hold its collar in place the other stop is resting on the top of its collar.

The standards are far enough apart to allow the collars play enough to reverse the valve.

This constitutes the whole valve motion. It is all in sight of the person in charge.

The action of the pump is simple. One steam port is always wide open, so, when the steam is turned on, the piston will start at any part of the stroke, moving the tappet arm with the spring towards one of the collars which is held in its place until the spring is compressed enough to reverse the valve.

The stop or dog has an extension that is lifted by a roller attached to the top of the brass spring. This releases the collar. The pressure of the spring reverses the valve and motion of piston, and the same operation is performed at the end of each stroke.

The steam and water pipe connections can be made at either side of pump, and need not be disturbed to examine or repair valves or piston. Diploma.

RISDON IRON WORKS—Davidson Steam Pump, High Speed.

One peculiarity of this pump is, that it has only one valve in the steam chest. This may properly be called a compound slide valve with cylindrical face. It performs two duties, that of the ordinary slide valve and of the auxilliary valve combined. Its duty as a slide valve is, of course, to reciprocate across the steam ports, to admit steam alternately to the two ends of the steam cylinder; and, as an auxilliary valve, it is isolated so as to open and close the steam ports that lead to the end of the steam chest.

The steam valve is cylindrical and bored out to make a face for the slide valve, and to receive the pistons that assist in operating the valve. The pistons are connected together, sufficient space being allowed between them for the valve and steam ports, and they are also connected to the slide valve, all working in the same plane and being of the same diameter. The valve is isolated by an oblique cam, connected with the valve by a steel pin passing through the valve into the exhaust port, in which the cam is placed. The moving of the valve does not depend entirely upon the steam admitted to the end of the valve piston; for should that not be quick enough to operate on the valve, with the pump under a high rate of speed, the cam is so con-



structed that it will carry the valve mechanically, and thus prevent the piston from striking the cylinder heads in any case.

This is claimed one of the most important features of this pump, the valve being as much under the control of the piston rod as is the valve of the ordinary system engine worked by an eccentric, instead of being independently controlled by an auxiliary valve. The possible speed of this Pump without danger is very high. It can also be run as slow as any of the other pumps; and as the time required to overcome the inertia of the valve and plunger remains constant, while the distance moved by the pump-piston varies with the velocity, it follows that the length of the stroke remains constant in this pump. It is noiseless, and, being positive, will always start from any position—a feature necessary in a pump when used for automatic duty such as operating Hydraulic Elevators, Presses, Converters, etc.

The water end is of new design and of simple make; it has but one joint to blow out, and that in sight. The pumps are readily examined, as the water valves and whole inside can be gotten at by the removal of one plate or bonnet. The design and construction is such that the area of valves can be enlarged for any duty.

Bronze Medal.

C. H. EVANS & Co.—General Display of Pumping Machinery in motion, Pacific Coast Manufacture.

This exhibit consists of steam pumping machinery, and includes five steam pumps of various sizes, with crank and fly wheel movement in motion, and one not in motion, for convenience of examining the different parts. They are the regular stock pumps manufactured by this firm, and known as the “Thompson & Evans Pumps.”

They are substantially made and constructed in such a manner that all parts are easy of access for examination or repairs. The piston rod being in one piece with the steam piston on one end and the water piston or plunger on the other end, all the steam of pumping is transmitted directly through the piston rod, which is a great improvement over the open yoke and divided piston rod construction commonly used. The yoke in these pumps have only to regulate the stroke, revolve the shaft, and move the slide valve, thus doing away with nearly all friction and making a very smooth and easy running pump. The steam valve is a plain slide valve moved by an eccentric the same as an ordinary steam engine. The crank and fly wheel movement insures a full and even stroke every time, and permits the pump to be run at a fast speed when required without any danger of the piston striking the heads, and gives an easy and gradual reversal to the motion of the reciprocating parts, producing a steady flow of water.

The steam may be used expansively for part of the stroke, thus effecting a saving.

There is also a special wine pump of the same make and style, but with the water or wine cylinder, made all of brass (composition), and valves especially designed to prevent clogging. Also an air compressing pump, having the same style of steam end attached to an air pump, designed for light pressures,

particularly for can testing, etc., in fruit and fish canneries. It is very simple, yet efficient, the crank and fly-wheel motion allowing it to work with very little clearance in the air pump—a decided advantage for an air compressor.

Also a double acting deep-well steam pump, the engine part or steam end having the same style of crank and fly-wheel movement, and single steam slide valve, and having a specially designed double-acting water cylinder, so constructed that it can be lowered down into an artesian well to any depth that may be required, and worked direct by the engine at the surface.

There is also a large compound duplex steam-pump, with the same crank and fly wheel movement as the others, designed to raise a large quantity of water; it is provided with a cut-off on the high pressure cylinder, which can be set so as to admit just the quantity of steam required to do the work. After being partially expanded in the high pressure cylinder, the steam is conducted through a receiver to the low pressure cylinder and still further expanded.

Also a vertical compound duplex independent air-pump and condenser, for condensing the exhaust steam and maintaining a vacuum for the triple expansion engine of the California Street Cable R. R. Co. The steam cylinders being arranged substantially as described above, the air or vacuum pump being single-acting, with top and bottom valves, and condenser between pump barrels.

It runs very smoothly and steadily, and condensing its own steam, maintains a vacuum of 27 to 28 inches.

For Best General Display of Pumping Machinery in motion, Pacific Coast Manufacture. Gold Medal.

PACIFIC MANUFACTURING COMPANY.—Display of Hand Pumps, Windmill Pumps, Tubular and Artesian Well Boring Tools.

The display of pumping machinery and water supply goods by this Company seems to include everything used in the development and conducting of water, from the well-known Cyclone Windmill (pumping and geared) down along the line of windmill pumps, hand pumps, steam piston pumps, steam vacuum irrigating pumps, deep-well pumps, lawn mowers, lawn sprinklers, hose belting and packing, tubular well-tools and supplies.

The principal machinery in the Pacific Manufacturing Co's display worthy of special mention is the Cyclone pumping and geared windmill. Upon examination we find the Cyclone made of first-class material, having many improved mechanical appliances. The heavy steel crank shaft works in babbitted boxes having double bearings; the mill is self-regulating, self-governing, and is built strong, and simple in construction.

The Star Mill, a rosette wheel of eastern manufacture, is compact and strong. The wheel is built of hardwood, and the gearing is constructed equal to a steam engine in material and workmanship. The Star Mill is made with an adjustable stroke and malleable shoe brake, the latter being a novel device to lock the mill and prevent it from pumping when out of gear.

The Hoosier Hydraulic Tubular Well Machine is fully equipped with tools

for penetrating all kinds of material. The well pipe of casing is sunk as fast as the earth is removed by the hydraulic process through the hollow tool rod. The expansion bit of drill passes down through the pipe or casing to follow down. One important feature is that with these tools strata of water can be shut off and the well sunk down to pure water.

The Huffer and Nye Steam Vacuum Irrigating Pumps, which are built in capacities of 100 to 10,000 gallons per minute, seem very simple in construction. No skilled mechanic is required, as no engine is used to run them.

Low pressure and Duplex Smedley Steam Pumps, about which we see no very marked difference from other steam piston pumps, except that the valves are all metal, and can be taken out without taking the pump apart, as with most other steam pumps, and the threads on all bolts and set screws are standard, and can be replaced from any hardware stock.

Last in the line is the triple action power plunger pump, throwing 18,000 gallons of water per hour. This we are told is the style of irrigating pump they sell with the Cyclone geared mill. They are built in lift and force, and capacities from 10,000 to 40,000 gallons per hour.

For Hand and Windmill Pumps, and Well-Boring Tools. Silver Medal.

WOODIN & LITTLE.—Triple Acting Force and Irrigation Pump.

Respectfully submitted,

T. H. MACDONALD,  
OWEN PEGG,  
P. H. REARDON,  
W. H. SMYTH,  
Committee.

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## CLASS No. 3.

### Machinists' Tools and Metal Working Machinery.

WE the Committee on Class 2 have examined the Exhibit submitted to us and recommend:

C. F. MARWEDEL.—Display of Machinists' and Engineers' Supplies.

This is a most complete Exhibit of Machinists' and Engineers' Supplies.

In two large show cases is an assortment of the various small finer tools used by Mechanics, Electricians and Metal Makers in general.

In the wall space, 20x20 feet, back of the cases, surrounded by a framing made up of metal rods and tubing, is a very artistic arrangement of the heavier tools and forgings, such as are used in mine, mill, factory, foundry and machine shop.

In the whole it shows the excellence to which the manufacture of tools has been brought in the present day, and the variety carried by the house.

Silver Medal.

J. L. HICKS.—Foot and Small Power Lathes, with Planer Attachment.  
Diploma.

Respectfully submitted,  
OWEN PEGG,  
P. H. REARDON,  
W. H. SMYTH,  
J. H. MACDONALD,  
Committee.

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## CLASS No. 4.

### Wood-Working Machinery.

I. H. SMALL & SON.—Double Circular Re-Sawing Machine, also a small  
Surface Planer, all of Home Manufacture. Diploma.

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## CLASS No. 5.

### Miscellaneous Machinery.

AFTER carefully examining the varied Exhibits in Class 5, we submit for your approval the following:

W. F. BOWERS & Co.—Rubber Working Machine and Manufactured Rubber Goods.

The Rubber Machinery on exhibition at the Fair consisted of one set of rollers which is known as a mill and is used for breaking and grinding rubber that has been washed. These rollers being of uneven motion, knead the rubber up like dough and prepare it for working into all kinds of goods. This is the first time that a rubber mill has ever been on exhibition on the Pacific Coast, and this is the only firm on this Coast that is running this kind of machinery.

The Steam Press which was on exhibition is used for vulcanizing all kinds of mouldwork or goods with flat surface. While at the Fair this press vulcanized corrugated rubber stepping for stairs and also fancy rubber mats. Being a small machine it was worked by hand, but the large ones are arranged to work by power.

The Machine for wrapping rubber hose winds all sizes of rubber hose with hard-drawn steel wire, and puts the material on in such a way that the hose can be cut at any point without unwrapping. This machine puts on two thousand feet per day, and is the only one on the Pacific Coast doing such work.  
Gold Medal.

W. A. PETTIJOHN.—Germea Mill in Operation.

In the preparation of this food the special machinery which is on exhibition is employed. It first separates from the wheat all foreign matter. It is then hulled, which process removes all the woody covering and leaves nothing but the germ of the grain which makes up the food product. This food contains a large percentage of nitrogen which makes it very nutritious and particularly adapted to invalids and children. It is a pure California production, manufactured by California-made machinery, and put up in home made packages. (See Class 41.) Silver Medal.

M. DILLENBURG.—Ice Machine in Operation.

This very small Ice and Refrigerating Machine shows how an ice machine works, and its details; it shows that a small refrigerating machine can be built for actual work to advantage, both as to power required and first cost. The difficulty of making a small machine do a proportional amount of work to a large one is well understood. The exhibitor claims to have accomplished this desirable result, and also that his machine is of the most simple construction and can therefore be handled by any one of average intelligence after a day or two of instruction.

The improvements claimed are as follows: An absolutely ammonia-tight joint and valve to separate the ammonia gas from any part of the machine to the other, in case of repairs; also, on the peculiar construction of the ammonia compressor, piston, etc. Diploma.

A. S. HALLIDIE.—Models, illustrating the Cable Railway System, Endless Ropeway, Wire Rope, etc.

Mr. Hallidie's exhibit relates more particularly to some of his inventions, such as Cable Railways, Endless Ropeways and Wire Rope.

He exhibited the original design of a grip made by him in 1873, before the construction of the Clay street road, which was built by him in 1873 and commenced operating August 1st, of the same year. Photographs showing the line of the Clay street road, as originally constructed, were on exhibition.

The models of grip cars, or dummies, and passenger cars, and various other devices; all refer to the cable railroad invention and have considerable historic interest.

As these articles were put in at the request of the Mechanics' Institute, and for the purpose of exemplifying the original conception of the cable railway, and, as we understand that a statement has been filed in relation thereto (see Appendix), we can only leave this important matter in the hands of the Board of Directors.

Mr. Hallidie's Endless Wire Ropeway, an invention which antedates the cable railway, has been erected in almost every part of the United States and the adjoining countries. It is specially adapted to the transportation of ore or other materials over rough or mountainous roads. The model exhibited shows its practicability, and, from the certificates shown us by parties who have had the lines constructed in different parts of the country, it is an exceedingly valuable invention of a very practical nature, and advantageously

adapted for mining countries such as California, Nevada, Colorado and Mexico.

Mr. Hallidie also exhibited an improved kind of wire rope, or wire cable, on which he has received several patents.

The peculiarity of this wire cable is, that on the outer layer of wires, on each strand, peculiarly-shaped wires are laid between every other round wire, overlapping the same and protecting them from wear from abrasion.

The rope has been tried on the cable roads of this city with excellent success, and shows an increased durability of 25 per cent. While it adds a very small fraction to the original cost of the cable, it adds materially to its life.

An improved clip for wire ropeways was also exhibited, by which the cost of the clip is very much reduced and its construction simplified.

For Improved Wire Cable.

Grand Silver Medal.

[For full description of Mr. Hallidie's invention of the Cable Railway System, see Appendix.]

#### CALIFORNIA WIRE WORKS.—Wire Manufactured Goods.

The California Wire Works made an excellent exhibit of its manufactures, consisting principally of wire of all kinds—wire nails, wire cloth, wire netting, staples and wire rope—all being manufactured at its works at North Beach, in this city.

We note with pleasure the increase in this line of industry, and an examination of the products of this Company shows us their durability and superiority, compared with the imported articles. We find on inquiry that they consume about 8,000 tons of wire rods annually, which are made into the various products exhibited by them. They employ between 250 and 300 hands, and their works occupy an entire block, equal to about  $2\frac{1}{4}$  acres. They have four different steam engines, aggregating 600 horse-power.

The wire nail is the most recent of the Company's manufactures, and they are turning out 250 kegs per day of various sizes, all being sold to the local dealers.

About 90,000 spools of barb wire are made annually.

Of wire netting, a large amount is manufactured of various widths and sizes, so as to meet the demands of the country from the depredations of the rabbit, gopher, etc.

A special line of this Company's manufacture is wire ropes and cables; and they had on exhibition a large coil of wire cable, 26,000 feet in length, representing a cable such as is used on the Cliff House and Ferries line of this city.

We have made careful inquiry, and have obtained proof as to the quality of the cables manufactured by this Company, and find that, on lines of various railroads, they have been used in competition with those of Eastern manufacture, and their durability has been from  $\frac{1}{3}$  to  $\frac{2}{3}$  greater. This we find, especially the case on the Ferries and Cliff House Company's System, where one cable has run  $9\frac{1}{2}$  months, as against 4 months, the longest life of the Eastern-made cable.

The great variety of ropes, cables, wire, wire nails, barb wire, wire cloth

and nettings manufactured by this Company, shows its enterprise and ability to quote with the strong competition and cheaper labor of the East and Europe.

We take great pleasure in recommending this exhibit to the consideration of the Board of Directors. (See Class 12.)

LEO E. ALEXANDER & Co.—Smith Premier Typewriter.

This is a marked improvement on anything of its kind before invented, and shows that the best inventive talent and mechanical skill have been employed in its construction. It combines all the good qualities of the other machines; has none of the faults, and, at the same time, contains many necessary and new improvements. It is exceedingly rapid, is nearly noiseless, is a thoroughly convenient machine, and its durability is apparent. We desire to make special mention of the fact that steel bars (rocking shaft mechanism) are used in its construction; also, a wonderfully convenient brush device in the Machine, by the revolution of which all the type is thoroughly cleaned in a few seconds without soiling the hands. This is the greatest labor-saving invention ever applied to a writing machine. Also the remarkably quick action of the carriage on its perfected ball bearings which permits of very high speed and easy running. It is claimed, and inspection and trial prove it, to be the most durable in alignment, easiest running and most silent. This machine is equipped for all classes of work. It is compact, strong, symmetrical in design and presents a very handsome appearance. In consideration of the perfection of the mechanical design and working of this machine, your committee unanimously recommend that in lieu of the Diploma offered in the list of awards this Machine is awarded

Silver Medal.

PACIFIC ROLL PAPER COMPANY.—Large and General Display of Hopking's Holders and cutters. Diploma. (See Class 25.)

M. E. WILLIS.—Street Car Fare Box and Change Gate. Bronze Medal.

CHAS. E. NAYLOR.—Caligraph Typewriter.

PACIFIC MANUFACTURING COMPANY.—Cyclone Windmill. (See Class 2.)

SAMUEL HILL Co.—Edison Mimeograph for manifolding Autographic and Type-written work. Silver Medal.

SAN FRANCISCO CHRONICLE.—Display of Stereotype Plates, Cuts, Paper and Material, used in the publication of that Paper. Grand Bronze Medal.

PALMER & REY.—General Display of Printing Presses, Type Casting and Printers' Material. Grand Silver Medal.

J. P. MIGHELL.—Yost Writing Machine and cases. (See Class 21.)

O. A. DEERING.—Improved All-brass Galleys for Printers.

RYLAND ROBINSON COMPANY.—Type Writing Machines.

P. THEREUX.—Ice Machines for General and Domestic use,

W. H. MURRAY.—Ramie Machine and Fiber. (See Class 46.)

H. E. HOLMES.—Little Giant Wagon Jack.

LEBENBAUM BROS.—Automatic Ice Cream Freezer.

Diploma.

Respectfully submitted,

W. H. SMYTH,

T. H. MACDONALD,

OWEN PEGG,

P. H. REARDON,

Committee.

## CLASS No. 6.

### Mining Machinery.

AFTER an examination of articles in Class 6, the undersigned recommend the following:

E. G. DENNISTON.—Silver-plated Amalgam Plate for Mining Purposes.

Silver Medal.

M. B. DODGE.—Rock-Breaker and Sampler Combined.

Silver Medal.

CHARLES TRAFTON.—Pine Cone Rifle for Sluice Boxes.

Diploma.

RISDON IRON WORKS.—Garnier Concentrator.

The Improved Garnier Vanner or Concentrator introduces a new principal in concentrating machines, which can be best described by calling it the "Batea" movement.

This movement is affected by a vertical crank shaft placed centrally at the feed end of the machine, imparting to that end of the belt table a rotary motion, while the opposite end of the table is confined by a guide to a simple reciprocating motion, in a longitudinal direction.

The motion of the belt from the crank at one end to the guide at the opposite end is the result of this compound motion, and is a graduated motion of the belt's surface from the rotary to the reciprocating end. Friction driving wheels are used instead of bevel gear. The mechanism employed for feeding the shaking belt is both novel and simple. For starting and stopping the machine, an instantaneous releasing of the surfaces of friction wheels is provided for.

Among the advantages claimed for the Garnier Vanner, by the exhibitor, we name the following:

First—Greater concentrating capacity.

Second—Will weigh less and cost less to freight.

Third—Will cost less to erect them.



Fourth—They have light substantial steel frames.

Fifth—They are easily operated and adjusted.

Sixth—Runs entirely noiseless.

Grand Bronze Medal.

P. H. REARDON,

OWEN PEGG,

T. H. MACDONALD.

W. H. SMYTH,

Committee

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## CLASS No. 7.

### Laundry Machines.

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YOUR Committee, appointed to judge of the merit of articles in Class 7, submit the following:

PACIFIC LAUNDRY AND MACHINE COMPANY—The Exhibit of the Pacific Laundry Machinery Company consists of the following:

One Adams Washing Machine, which is a horizontal rotary machine with one cylinder inside of another; the inside cylinder revolves back and forth, automatically, three revolutions each way. This is revolved by a movement which is very positive in its action and very accurate. It requires about one-half hour to do the washing of plain clothes in this Washer; this includes washing, boiling and blueing, ready for the Wringer, which is a "Centrifugal Machine." Its superiority over others consists of a wrought steel curb; a copper basket bound by wrought-iron bands, mounted with a brass ring, and has a double convex steel bottom; it takes a belt from any angle, and from below, without cutting holes through floor for pulleys; has flanged pulleys; spindle is self-oiling, from oil receptacle, outside of pulley; it is very simple in construction, and therefore less liable to get out of order.

From the Wringer the clothes are taken to the "Hospital Supply Company's Automatic Drying Mangle." This machine has an iron cylinder which is heated by steam, and is 40 inches in diameter by 96 inches long. It is of high-polished iron, which gives a soft finish to the goods. It has four cloth-covered rollers, around which passes an endless apron made of ducking, which is one-eighth of an inch thick. The sheets are placed on these aprons and passed around underneath the mangle, and come out at the top of the mangle on the opposite side, being held against this hot cylinder for a distance of 106 inches, which completely dries and irons the sheets as they go through. This machine has a capacity of four sheets per minute. The journals are  $3\frac{1}{2}$  inches in diameter, which run into a babbitted box 8 inches long. The machine is fed by a  $\frac{3}{4}$ -inch pipe, with steam, which is held at a pressure of from 60 to 70 pounds while in operation. The Mangle on exhibition was sold during the Fair to the San Francisco Laundry Association of this city.

The La Grande Laundry and Palace Hotel also have these machines in operation.

There is another Mangle on exhibition in this exhibit that is made by the Adams Laundry Machinery Company, of Troy, N. Y. The hot roll is 64 inches long by 16 inches in diameter. This machine is provided with three cold rolls, covered with cloth to hold the linen against the hot cylinder as they pass through. The machine is well made and perfect in every respect, and is used in nearly all the laundries on the Coast.

The Wrist Band and Cape Collar Ironer.—This machine is an ingenious device with a hot roll about 3 inches in diameter and 8 inches long, heated by gas and running against a roll that is covered with cloth on which the goods are placed. The wrist-bands and collars are polished with a high gloss, and are done in a very easy manner.

The Sinclair Ironer.—This machine has a gas-heated roll about 10 inches long, which revolves, and underneath the roll there is a sliding table, on which the shirt is placed, and is passed under the roll, automatically, back and forth, until it is polished with a high smooth polish. This machine is finely finished in every respect, and has a capacity of about 600 shirts per day. It is used in almost every laundry in the city.

The Tyler Shirt Polisher.—This machine is operated by hand. It has a table which is movable, on which the shirt is placed (bosom upwards); then it has a flexible spring which is so hung as to admit the end of the spring, which holds the polisher on the shirt bosom, and furnishing the pressure to be worked to all parts of the shirt bosom, easily. The polishing irons used for this are the Mahoney Polishers of Troy, N. Y., which are used principally for new work. This machine has a capacity of about 200 shirt bosoms per day.

The Collar and Cuff Ironer.—This machine has a polished iron cylinder about 2 feet long by 4 inches in diameter, is covered thickly with cloth, and the collars and cuffs are passed between these two rollers, and, as they pass through, they fall into a scoop which is made in a circular form, bringing the collars and cuffs back to the operator. After passing through two or three times they are thoroughly ironed, dried and polished on both sides.

From this machine they are taken to the Improved Shaper. This is a small machine about 2 feet long, with a vulcanized rubber roller about 16 inches long and 3 inches in diameter. The collars and cuffs are inserted, and, by a pressure of the foot, they are rolled ready for wear, either much or little, at the will of the operator.

The Collar, Cuff and Shirt Dampener.—This machine consists of two metal corrugated rolls revolving into copper troughs which are kept full of water. Over these are two vulcanized rubber rolls about eight inches in diameter and covered with two plies of linen, which take the water from the corrugated rolls; and, as they revolve towards each other, it takes the water to the opening between the two rolls and is held there by the two rolls coming together.

The collars, cuffs and shirts are run through at this point between the rollers, which takes up this water, dampening the goods to any desired moisture. This is a simple device, so that the dampness of the goods can be regulated at the will of the operator by raising a handle up or down. This machine has almost unlimited capacity, as it depends wholly on the activity of the operator to feed it. It is used in the San Francisco, Contra Costa and Parisian Laundries of this city. The one at the Fair was sold to the United States Laundry while on exhibition.

The Baby Dampener, a similar machine to the above, but, as its name implies, of only about one-third the capacity, is used in small laundries.

The Starch Kettle is made with an ordinary steam jacket, of highly polished copper, which is tinned on the inside. It is connected with a steam pipe and exhaust at the bottom, and stands upon three iron legs about two feet high. They are made in all sizes, from five gallons upwards, and are used in all the laundries.

One noticeable fact of all of the above machinery is, that the gears are machine cut, which is a new and very improved method of laundry machinery.

The Blower is a small machine, with a countershaft attached, for supplying air to the Bunsen Burners, which are used in all ironing machines that are heated by gas.

The Wooden Dry-rooms are manufactured by the Company, and are strong and well made, of sugar pine backs and fronts, and paneled and moulded with redwood. They are hung from the top, and run very smooth and easy on one-inch track pipe. They are so constructed that when closed, the front panel constitutes a door to close the dry-room, and, when pulled open, the rear end of the racks fit into the same place into which the front was, and closes the dry-room so that the heat cannot get out while hanging the clothes on the bars or taking them off. The racks are also received in a guide at the bottom, which runs in a groove, so as to prevent the racks from swaying sideways.

The Iron Dry-Room.—Perhaps one of the most interesting exhibitions to the laundrymen is the iron dry-room, which is the invention of Mr. J. E. Chappell, the Manager of the Company. It is made similar to the wooden dry-room. The racks are made of No. 14 sheet-iron, one foot wide and six feet six inches high, on which is riveted 1¼-inch angle irons, running up and down the whole length, on to which is bolted galvanized iron pipes, which are used for hanging clothes on. The dry-rooms are constructed of both galvanized and plain iron, painted. These dry-rooms are heated by a coil of one-inch pipe running underneath the racks.

The iron dry-room is in use in the Contra Costa Laundry, and was placed there by this Company after their fire of 1889.

Best Display of Laundry Machinery. Grand Silver Medal.

For an Improved Hand Washer, "The Perfect Washer." Diploma.

PEDIGO PERFECTION WASHER COMPANY.—The Perfection Washer.

Diploma.

J. H. THEBIEN.—Pacific Washing Machine.

S. B. PAGE.—I X L Washer.

PAUL MAISONNEUVE.—Washing Machine (Model.)

JOHN DIXON.—Artificial Stone Wash Trays.

Diploma.

Respectfully submitted,

T. H. MACDONALD,

W. H. SMYTH,

P. H. REARDON,

OWEN PEGG,

Committee.

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## CLASS No. 8.

### Fire Apparatus and Appliances.

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AFTER duly examining articles in Class 8, we recommend the following:

W. T. Y. SCHENCK.—Display of Fire Department Apparatus.

Samples of "Eureka," "Paragon" and "Red Cross" Cotton Hose are exhibited. The Paragon Hose, being composed of separate plies or walls of cotton bound together into a solid body by means of a tying strand, which is placed during the operation of weaving, and which not only strengthens the hose but also prevents sand or grit from lodging between the separate plies of cotton. The result is a Hose, which, if the other covering is burned or chafed, the inner remains intact; and the hose is not rendered useless, as would be the case if the tying strand was left out.

The display in Hose Reels, Hose Carts, etc., is worthy of commendation. The articles are all home manufacture.

The Swinging Hose Reel is particularly well designed and finished, and for fire protection it is unequalled. Its handsome appearance fits it for use in any building and obviates the necessity of providing special closets for its use, as it can be placed on the walls, exposed to the view of the occupants, and is therefore much more likely to be remembered in case of fire. As the reel swings in a packed joint in the direction in which the hose is being pulled off, all friction of the hose on the reel end is prevented.

A Hand Hose Cart, for Fire Department use, exhibited, is well proportioned and strongly and lightly made, and the reel break on same is quite a novel feature.

A Fire Hydrant, with valve of novel design, is shown. This hydrant has the merit of simplicity of construction, ease of repairs to valve and unusual water capacity when valve is open. No sediment can lodge around the working parts of the valve or on its seat, and it is therefore less liable to get out of order. It is well suited for either village or city use.

Hand Chemical Fire Extinguishers of different sizes are shown. These machines are known as the Babcock Champion, and are handsome in appearance and show care in the construction of their parts. The apparatus for carrying the acid and discharging the same when required is admirable, on account of its simplicity of construction, ease of operation and non-liability to get out of order when laid away for future use.

A tubular Fire Department lantern, "The Eclipse," is shown, for which it is claimed that water from a fire-stream cannot get inside the glass, that no wind will blow it out, that it will not go out by a jar in running to a fire, and that in smoky rooms it will burn longer than any other made.

For Hose Reel, Pacific Coast Manufacture. Grand Bronze Medal.  
For Best Hydrant. Diploma.

MUTUAL PATENT MANUFACTURING COMPANY.—Fire Escape in Operation.

The exhibition of this escape was quite a feature of the Exposition, several descents being made each day from a platform erected near the roof. To add additional interest, a lady, on many occasions, came down in safety and apparent ease from the dizzy height.

\*S. R. HACKLEY.—Hackley's Patent Hose Coupling.

PACIFIC AUXILIARY FIRE ALARM COMPANY.—Fire Alarm Apparatus. (See Class 29.)

Respectfully submitted,

OWEN PEGG,  
P. H. REARDON,  
T. H. MACDONALD,  
W. H. SMYTH,  
Committee.

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## CLASS No. 9.

### Marine.

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HAVING duly examined the several exhibits in Class 9, we submit the following:

THE SIRIEIX MARINERS' COMPASS COMPANY—The Sirieix Compensated Compass.

The object of the Sirieix Mariners' Compass is to correct the deviations of the Compass needle from local attraction, such as the sub-permanent magnetism, the induction of soft iron, the heeling error, etc. It is well known that the proximity of soft iron, steel, wrought iron, nickel, cobalt and permanent magnetism in magnetic bodies will more or less disturb the normal position of the compass needle. In iron ships, wooden ships carrying a cargo of magnetic bodies, and ships provided with steam engines, iron masts, etc., the deviation of the needle is often so great and uncertain as to render it

almost useless and even dangerous to navigation. Many methods of correcting the defects of attraction in iron vessels have been devised and many compasses have been arranged with a view to compensate said attraction. Compensating magnets have been laid in the decks, vertical and horizontal bars placed in the binnacles around the compass needle. These arrangements are more or less effective; but, according to the experience of navigators, they corrected the deviation when the ship is upright, but failed to do so when the ship ceased to be horizontal.

The Sirieix Compass differs from other arrangements inasmuch as the compensation is set in a more compact distribution, and easier of manipulation and adjustment, and, moreover, is very effective. The bowl is divided into compartments—the one containing the needle attached to a floater immersed into non-congealing liquid and the other containing the compensating elements, both of which move at the same time and in the same plane on the gimbals. The compensation consists of a combination of bar magnets of a reduced size laid out on a disc, and of blocks of soft iron, all of which are movable on two set screws so as to allow the operator to raise or lower the disc carrying the compensation of the sub-permanent magnetism and to regulate the position of the soft iron blocks, intended to correct the effects of induction from soft iron. There is also a third screw, by means of which the disc is to be moved in such a manner as to bring the field of the compensation within the line of magnetic force of the ship. As may be verified in the model exhibited at the Fair, the adjustment, although very plain, is very effective; and it is very practicable, even if the operator be not an expert in the science and natural laws of magnetism.

The Sirieix Compass has been patented in the United States, in France and in England.

G. W. KNEASS.—Row Boat.

THEO. S. LAWLER.—Model of a Yacht.

I. HARUKUCHI.—Model of Japanese Steamship "Hiyei." This model was complete in every detail, and a beautiful specimen of ingenious and skillful workmanship. Diploma.

CECIL NIXON.—Model of American Steamship. Bronze Medal.

T. M. KENDALL.—Model of a Yacht. Diploma.

H. FASTENAU.—Models of Vessels in Glass Case.

ROBBIE & WALTER HANCOCK.—Miniature Schooner Ready for Sailing.

RUTHERFORD B. MOORE.—Model of U. S. Cruiser "Charleston."

L. LEWIS.—Model of Ship "Magnolia."

Respectfully submitted,

P. H. REARDON,  
T. H. MACDONALD,  
W. H. SMYTH,  
OWEN PEGG.

## CLASS No. 10.

### Sewing Machines, Knitting Machines, Beading Machines and Looms.

YOUR Committee, to whom was given the pleasing duty of examining articles in Class 10, herewith present their report:

J. L. HICKS.—Deserves the Award for the Best Display of Sewing Machines  
“Helpmate.” Silver Medal.

H. A. HEBARD.—Exhibited the Love Combined Button-hole and Sewing  
Machine. Silver Medal.

I. S. COHEN.—Exhibited the Standard, Eldridge, Household, New Improved  
Goodrich, and an Improved Combination Eyelet and Button-hole Machine.  
Bronze Medal for the last.

MRS. E. L. BASCOM.—“Daisy” Embroidery Needle. Diploma.

J. H. SQUIRES.—Embroidery and Tufting Machine. (See Class 34.)

Respectfully submitted,

W. B. ISAACS,  
JAMES PATTERSON,  
G. B. MERRIAM,  
ABNER DOBLE,  
J. G. SHEPARD,  
Committee.

## CLASS No. 11.

### Agricultural Machinery.

YOUR Committee, appointed to examine and report upon articles in Class 11, of the present exhibition, submit the following:

BAKER & HAMILTON.—Agricultural Implements and Machinery, consisting of one Eureka Side-hill Gang Plow, one Eureka Side-hill Plow, one Eureka Deep-tiller Sulky Plow, one Eureka Tule Sulky Plow, one Eureka Vineyard Gang Plow, one Peerless 4-gang Plow, one Peerless 3-gang Plow, five Benicia Steel Beam Plows, 14 Benicia Wood Beam Plows, one Benicia Wood Beam Side-hill Plow, one Benicia Wood Beam Orchard and Vineyard Plow, one Benicia Orchard and Vineyard Cultivator, four Benicia Garden Barrows, one Steel Frame Orchard and Vineyard Harrow, one Benicia Iron Age 5-tooth Cultivator, one Benicia No. 1 Barley Crusher, one Benicia No 1 Gem Seed Sower, one Benicia 3-section Steel Frame Harrow, one Benicia Eureka 2-section

Wood Frame Harrow, all of California Manufacture. Also six "Princess" Chilled Plows, five "Gale" Chilled Plows, one Gale "Big Injun" Sulky Plow, one "Tiger" Mower, one "Tiger" Sulky Rake, one Hollingsworth "Tiger" Sulky Rake, one 6-foot Climax Disc Harrow.

For best display of Agricultural Implements. Gold Medal.

J. A. BILZ.—One-horse Vineyard Plow, also Vineyard Singletree.

SEBERNE STEELE.—Hawkeye Grub and Stump Puller.

Evidently a powerful and effective machine for clearing land. Diploma.

T. H. B. VARNEY.—Agricultural Implements.

TRUMAN, HOOKER & Co.—General Display of Agricultural Implements, including a portable farm engine.

For best Gang Plow, "Bradley." Diploma.

For best Mower, "McCormick." Diploma.

For best Hay Stack, "Eclipse." Diploma.

For best Hay Elevator, "Oliver," Derrick. Bronze Medal.

For best Hay Rake, "Eclipse." Diploma.

PACIFIC MANUFACTURING COMPANY.—Fine Display of Lawn Mowers.

Diploma.

DEERE IMPLEMENT COMPANY.—Agricultural Implements.

This was a large and interesting exhibit, including "New Deal" Gang Plows, Gazelle Sulky Plows, Single Silver-plated Plows, Deere's Side Hill Plows, Deere's Single Plows, Chilled Bottom Plow, Vineyard Plows, Deere's Broadcast Seed Sower, Deere's Disc Harrow with Seed Attachment, Columbus Riding Cultivator, Shaker Potato Digger, Reindeer Walking Cultivator, Antelope Walking Cultivator, Deere's Garden Seed Drill, McGee's Garden Cultivator, Deere's Corn Planter with Check Rower, Deere's Smoothing Harrow, Deere's 12-inch Road Plow, 5-tooth Iron Age Cultivator, Gilpin's Sulky Plow.

For best Potato Digger, "Shaker." Silver Medal.

For best Riding Cultivator, "Columbia." Bronze Medal.

For best Plow for general purposes. Diploma.

For best Sulky Plow, "Gilpin." Diploma.

R. J. KNAPP.—Side Hill Plow.

This we consider the best. Diploma.

MOSHER, CHANDLER & Co.—Fruit and Orange Grader.

This important help to the fruit-grower deserves commendation.

Silver Medal.

E. D. SHARPLESS.—Improved Cream Separator.

This exhibit was in operation each evening during the Fair, and attracted much attention, thousands of gallons of milk being subjected to the separating process.

Silver Medal.



\*AMOS WHITELEY & Co., Springfield, Ohio.—Mower.

The special feature of this mower is the extreme strength of the guard and pitman, which was illustrated at various times by cutting off young trees from one to three inches in diameter, ax handles, and such other trifles, with ease and without apparent injury.

PAUL MAISONNEUVE.—Fruit Pitting Machine “Champion.” Diploma.

\*J. B. RITCHIE.—Browning’s Scientific Churn.

\*E. S. GERON.—California Side Hill Plow.

Respectfully submitted,

J. McM. SHAFER,

G. W. McNEAR,

D. J. KENDIG,

Committee.

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## DIVISION II.

### MANUFACTURED PRODUCTS.—METALS.

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#### CLASS No. 12.

##### Iron, Steel and Lead.

HAVING examined the articles in Class 12, we submit the following:

CALIFORNIA WIRE WORKS.—Display of Wire Goods, Ropes, etc., of California Manufacture. Grand Silver Medal. (See also report in Class 5.)

GEO. W. GIBBS & Co.—Sample of Matthewson Patent Joint for Iron Pipe. Diploma.

THOS. DOYLE.—New System of Horse-shoeing and Treatment of Horses’ Feet. Entered too late for competition, but deserving Honorable Mention.

JOSHUA HENDY MACHINE WORKS.—Wood Pulleys. Diploma.

FOLDING IRON GATE AND GUARD COMPANY.

Committee recommend this exhibit as an article of California Manufacture. Silver Medal.

U. S. CONSTRUCTION PIPE MANUFACTURING COMPANY—Combined Wrought-iron and Cement Pipe for General Purposes.

Respectfully submitted,

J. G. SHEPARD,

ABNER DOBLE,

G. B. MERRIAM,

W. B. ISAACS,

JAMES PATTERSON,

Committee.

## CLASS No. 13.

### Cooking, Heating and Ventilating.

AFTER an examination of the articles in the list prepared for us, as belonging to Class 13, we recommend awards as follows:

GEO. W. SHREVE—Improved Steam Cooker. Silver Medal.

J. DE LA MONTANYA—Stoves, Ranges, Grates and Furnaces.  
Grand Bronze Medal.

GASKILL & REGAN—Stoves and Ranges.

SHERMAN S. JEWETT & Co.—Steel Ranges, Stoves, Radiators, Gasoline Stoves and Family Ranges, the latter of California manufacture.

For best display. Grand Silver Medal.

FRED JANTZEN—Oil Stoves. Bronze Medal.

PROGRESS GAS STOVE COMPANY—Display of Gas, Cooking and Heating Stoves. Diploma.

SCHUSTER BROS.—Display of Stoves, Ranges and Gas Stoves. Diploma.

WIESTER & Co.—Vapor and Gasoline Stoves, Gas Cooking Range and Improved Water Backs. Silver Medal.

C. W. WATSON—Improved Gas Grates of his Invention. Diploma.

SAN FRANCISCO GAS LIGHT COMPANY.—A large and fine display of Gas Cooking Stoves and Ranges, and Gas Heating Stoves. A practical test of these stoves was made on several occasions, and, at one, a number of newspaper men visiting the Fair were invited by the Company's courteous manager, Mr. C. W. Watson, to witness the cooking and partake of a dinner prepared on one of their stoves.

The following account was published in a journal the next morning:

#### AN IMPROMPTU BANQUET.

The other evening a number of newspaper men visiting the Fair were treated to an agreeable surprise in the form of an invitation to dinner. The host of the occasion was the San Francisco Gas-Light Company, and the excellent and varied *menu* was prepared in the presence of all the diners, on one of the Company's gas stoves. There were just a dozen at table, and they sat down ten minutes after the invitations had been issued, and just that time after the *chef*, Albert Franck, had been notified to prepare a dinner.

The gas stove stood in the center of the Company's exhibit and within a few feet of the guests. The soup, or, as the neat *menu* properly termed it, the "potage," was put on the table steaming hot and excellent in quality. While the guests were thus whetting or wetting their appetites, the fish was

being prepared, and in twelve minutes from the time the soup was first placed on the table, it was replaced by a dainty dish of soles *au gratin mariniere*. Celery stood on the table as a relish, and in twenty-four minutes from the commencement of the dinner, a *relève* of mignon tenderloin, with mushrooms, was served to the guests. Fifteen minutes more were required to place before the diners, all from the same stove—all just cooked—an entrée of sweetbread, larded jardiniere and stuffed tomatoes, string beans and green peas. In another eighteen minutes, the guests were invited to discuss canvas-back ducks, and the dinner wound up with salad, punch, fruit and *café noir*.

In fifty-seven minutes, in the presence of a dozen people, an excellent dinner, a much more varied one than is ordinarily partaken of by the average household, had been cooked and served, with a consumption of only thirty-five feet of gas, costing seven cents.

For Gas Cooking Stoves.

Silver Medal.

For Gas Heating Stoves.

Bronze Medal.

MRS. HENRY CONE.—Heat Regulator for Stoves.

This device is applicable to any stove, and the lady's own invention.

Silver Medal.

JOHN F. MYERS.—General Display of Stoves and Ranges for Wood, Coal, Gas, or Gasoline Oil Lamps, etc.

For General Display.

Silver Medal.

For Gas Heating Stoves.

Bronze Medal.

ADAMS & PRITCHARD.—Steel Ranges, Laundry Stove, Hot Water Boilers and Improved Broiler.

For Steel Ranges.

Silver Medal.

NOVELTY HARDWARE COMPANY.—Kitchen Utensils and Odorless Fry-Pan and Broiler.

For the latter.

Bronze Medal.

J. C. FULLER.—Daggett's Patent Roaster and Baker.

Diploma.

TAYLOR GOODRICH.—Ranges, Stoves and Hot Air Furnace, Copper, Tin and Planished Ware.

Respectfully submitted,

ALBERT PISSIS,

A. PAGE BROWN,

CHAS. I. HAVENS,

ANDREW WILKIE,

GEORGE F. DUFFEY,

Committee.

**CLASS No. 14.****Hardware, Cutlery, Firearms, Etc.**

AFTER an examination of articles in Class 14, we recommend as follows:

R. LIDDLE & Co.—Display of Guns, Fishing Tackle and Sporting Goods.  
Silver Medal.

GEO. W. SHREVE.—Exhibit of Guns. Diploma.

A. E. McMILLAN.—Mitre Box, his Invention and Manufacture.  
Diploma.

NOVELTY HARDWARE COMPANY.—Display of Mechanics' Tools.  
Diploma.

C. F. WOODS.—Rubber Stamps.

FRED WATSON, Colusa, Cal.—Hunting and Skinning Knives.

These knives are hand-made, of fine workmanship, and superior temper.  
Diploma.

Respectfully submitted,

W. B. ISAACS,  
ABNER DOBLE,  
G. B. MERRIAM,  
JAMES PATTERSON,  
J. G. SHEPARD,  
Committee.

**CLASS No. 15.****Fire and Burglar-Proof Safes, Locks, Etc.**

[Consolidated with Class No. 16.]

**CLASS No. 16.****Brass Work, Gas and Lamp Fixtures, Plumbers' Goods, Etc.**

OF the articles submitted to our judgment and examination, we recommend as follows:

W. T. GIBBS.—Doud's Permutation Locks. Diploma.

PIERCE & Co.—Cash Registers, with Check, Printing and Adding Device attached.  
Grand Bronze Medal.

FRED. JANTZEN—Coal Oil Lamps. Diploma.

W. D. SCOTT—Air Vents for Kegs and Barrels.

This useful and improved article for dealers in fermented products is Mr. Scott's invention and manufactured here. Diploma.

RAPID SAFETY FILTER COMPANY—Rapid Safety Filters.

One of the exhibits deserving a prominent praiseworthy mention is this Filter for the purification of large and small bodies of water. Too much cannot be said of this Filter. We believe it to be of surpassing merit, and, without doubt, the most rapid filter ever placed here on exhibition.

We have looked carefully into the construction of this exhibit, being induced so to do in consequence of the great importance and necessity of filtering water intended for human consumption. We find it so rapid in its operation and the water filtered thereby so pure that we cannot withhold from it our meed of praise. Its excellence lies in the fact that it furnishes all the filtered water required in a household for domestic use, both for cooking and drinking purposes; also, in the fact that it is connected directly with the service pipe, and the water is kept supplied by automatic action, the filter doing its work constantly without requiring any attention whatever from the consumer, and the Company looking after it once a month.

It is a most deserving and serviceable invention, and we recommend that it be awarded. Special Grand Silver Medal.

A. S. GRAFF & Co.—Large and Fine Display of Coal Oil Lamps, with Graff's Patent Burner, of California manufacture. Silver Medal.

JOHN F. MYERS.—General display of Coal Oil Lamps and Stoves. Silver Medal.

WIESTER & Co.—Water Filters for Attachment to Faucets. Bronze Medal.

Respectfully submitted,

GEORGE F. DUFFEY,  
A. PAGE BROWN,  
ANDREW WILKIE,  
ALBERT PISSIS,  
CHAS. I. HAVENS,  
Committee.

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## CLASS No. 17.

**Crates and Mantels—Marbles, Artificial Stone, Earthenware, Glassware, Etc.**

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THE undersigned jurors, appointed to examine articles in Class 17, herewith submit the result of their examination, and trust it will meet with your approval.

CHARLES MESTON.—White Enameled Letters and Plates. Diploma.

UNION PRESSED BRICK AND TERRA COTTA COMPANY.—Display of Pressed Brick and Terra Cotta, made at their Extensive Works at Vallejo, and arranged in an attractive manner near the main entrance of the Pavilion.

Grand Silver Medal.

CALIFORNIA MARBLE AND BUILDING STONE COMPANY.—Marble Mantels and Interior Marble Work. Monumental Work and Cut Stone for Architectural Work.

A large and well arranged display from their quarries at Colton, San Bernardino County.

Grand Silver Medal.

W. D. PERINE.—Samples of Roofing Slate and Model of a House.

The slate was from Chili Bar, El Dorado County. Silver Medal.

CALIFORNIA ADAMANT WALL PLASTER COMPANY.—Adamant Wall Plaster and Material.

This material and its application was well shown in a room specially prepared for that purpose.

Silver Medal.

GLADDING, McBEAN & Co.—Architectural Terra Cotta.

This large exhibit occupied about forty feet in length of wall space and filled from floor to ceiling with samples of artistic work from their manufactory at Lincoln, Placer County.

Grand Silver Medal.

INYO MARBLE COMPANY.—Display of Manufactured Marble from their recently-constructed works on the Truckee River.

The Marble was from the Quarry at Keeler, Inyo County.

Silver Medal.

JOHN DIXON.—Wash Trays of Artificial Stone.

Diploma.

Respectfully submitted,

ANDREW WILKIE,

CHAS. I. HAVENS,

A. PAGE BROWN,

ALBERT PISSIS,

GEORGE F. DUFFEY,

Committee.

## DIVISION III.

MANUFACTURED PRODUCTS—WOOD, OR WOOD  
AND IRON.

## CLASS No. 18.

Carpenters' Joiners' Carvers' and Stair Builders' Work, Orna-  
mental Glass Painting, etc.

AFTER an examination of the articles in the list prepared for us we commend awards and also call attention to the special reports on articles for which no provision is made in the Premium List.

EUREKA VENTILATING COMPANY.—Abrahamson's Patent Ventilators.

These various appliances were shown in a large and well-constructed model, and the inventor, in his description, says the system combines all the necessary elements to make it thoroughly scientific and sanitarily complete, and comprises a variety of ventilators suitable for walls, both wood and brick, windows, transoms, skylights and doors. They are divided by a partition making two channels, one for the warm air to go out and the other for the cold air to come in, and are so arranged by perforated metal being placed inside of each of these compartments or channels that the change in the atmosphere takes place so gradually as to be almost imperceptible. The theory of the system is, that as the warm air passes out one of these compartments the same amount of air gently comes into the room through the other compartment, near the top of the room. When the cold air enters, being colder than the air in the room, it settles to the floor and displaces and causes the warmer air to rise, consequently keeping up an almost imperceptible circulation of fresh air; and a room can be perfectly ventilated and still no draught. This system has been in practical test for a number of years. The Ventilators are not only draught-proof but exclude dust, rain or insects.

Bronze Medal.

C. H. BURR.—Weather Strips.

Diploma.

CHARLES A. HARE.—Gardner's Sash Balance and Attachments.

Bronze Medal.

L. U. HOFFMANN.—Sign and Pattern Letters.

Diploma.

H. E. BLACOW.—Extension Step Ladder.

Diploma.

SANBORN, VAIL & Co.—General Display of Picture Frames, Mouldings,  
Mirrors, Engravings, Mantel Bric-a-Brac and Art Work.

Gold Medal.

JOHN MALLON.—Art Stained, Ground Cut and Embossed Glass. As heretofore, Mr. Mallon made a large and fine display of his special work for architectural purposes. Gold Medal.

THOMAS CARSON.—Fancy Carved Table. Bronze Medal.

JOHN J. NEWSOM.—Metallic Paneled Door. Diploma.

SWINGING WINDOW COMPANY.—Sliding and Swinging Window. Bronze Medal.

H. PAPE.—Wood Clock Frame, and Jewelry Case. Diploma.

GEO. F. ATKINSON.—Turned Articles of California Redwood. Bronze Medal.

CALIFORNIA VENEER WORKS.—Veneers of Native Woods.

The exhibit made by the California Veneer Works is deserving of more than a passing notice. Although the veneer department of this exhibit is not classified in the Premium List, the work displayed by this Company exhibits skill and enterprise deserving the highest commendation. The manufacture of veneer on this Coast is a new enterprise, and this Company has invested in it a large capital, and has in operation an extensive plant.

Already this energetic Company has created a large and growing demand for these beautiful native wood veneers, not only in the East, but in foreign lands; and, as soon as their varied beauties and adaptability for all the purposes for which veneers can be made use of becomes known, the influence of this Company as a disseminator of a Pacific Coast production will extend world-wide. The specimen of carving alone in our own beautiful redwood, as shown in the elegant samples and specimens on exhibition, display great artistic taste.

The mantel in the exhibit of the California Veneer Works is also worthy of the highest award, both for the conception of its design and the excellence of its workmanship.

The parlor suite of furniture exhibited by the above Company, being made entirely of redwood, carved and veneered, is a practical illustration of the superiority of this California wood over all others for interior decorations, fine furniture, cabinet work and piano cases.

This entire exhibit is a genuine California production, and your Committee unanimously recommends that a Premium be awarded.

Grand Silver Medal.

CALIFORNIA SASH BALANCE COMPANY.—Marshall's Improved Sash Balance.

Your Committee having thoroughly examined the exhibit of the California Sash Balance Company are convinced that the claims made by said company for its device, as set forth at length in the circular accompanying this report, can be substantiated in full. The exhibit of this company consisted of two Window Frames such as are in general use in this city, completely equipped with the company's device; and, although no weights, cords, pulleys or boxes were used, the sashes could be raised or lowered and locked securely at any point with a minimum of exertion. The device, upon examination, proved



simple in the extreme and equally effective. It is conceived and carried out on true mechanical principles, and beyond a doubt will do the work, and do it well, that the Inventor intended it to do. It is improvements in the simple things of life in which the general public, poor as well as rich, are deeply interested, that are deserving of the most credit; and this device, doing away with, as it does, annoyances in the hanging of windows that have existed for many years, is entitled to the utmost praise. We therefore commend it to you as deserving of the highest award in your gift, and unhesitatingly say that if ever a device or invention exhibited at the Mechanics' Fairs held in this city has been worthy of a premium, the California Sash Balance Company undoubtedly is.

Grand Silver Medal.

A. PAGE BROWN,  
 CHAS. I. HAVENS,  
 ANDREW WILKIE,  
 GEORGE F. DUFFEY,  
 ALBERT PISSIS,  
 Committee.

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## CLASS No. 19.

### Musical Instruments.

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WE, the undersigned Jurors on Class 10, after a careful examination of the articles in the above classification, recommend that awards be granted to the following:

**THE BANCROFT COMPANY.**—Pianos and Organs.

These instruments were part of the general display of Printing, Books, School Furniture, etc., made by that House.

**BENJAMIN CURTAZ & SON.**—Large and Fine Display of Pianos.

The space occupied by this firm was elegantly fitted up and attracted much attention. First-class performers each evening entertained visitors with a piano recital of choice compositions. For best general display of Musical Instruments.

Grand Bronze Medal.

**HERMAN MULLER.**—Zithers and Stringed Instruments of California Manufacture.

These instruments evinced much skill and taste in their workmanship and finish, Mr. Muller being a skilled artisan in that line of work.

Silver Medal.

**TODD & DOUGLASS.**—Douglass Banjos.

These banjos are made on an entirely different plan from the ordinary kind, the improvement being a solid back similar to a guitar yet retaining the peculiar tone of the banjo with increased power and sweetness. Several

skilled players were on hand every evening to display the qualities of the instruments, and always attracted a crowd to listen. The invention is patented and the banjos made here. Silver Medal.

W. G. BADGER.—Pianos and Organs.

This was an attractive exhibit of Pianos and Organs, from celebrated makers in the Eastern States, arranged in an elegant booth. Several noted players from time to time entertained visitors and showed the qualities of the instruments, pleasantly varied on several occasions by accompaniments to solos on a violin or cornet.

For best general display of Pianos and Organs. Silver Medal.

CRESS UNGER.—Banjos of his own manufacture.

The workmanship of these banjos was especially fine.

Respectfully submitted,

MARTIN SCHULTZ,  
BURR NOBLE,  
CHARLES SCHULTZ,  
Committee.

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## CLASS No. 20.

### Vehicles and their Attachments, Children's Carriages, Hobby Horses, etc.

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WE, the undersigned jurors appointed by the Managers of the Exposition to examine and recommend awards in Class 20, have met from time to time, and, after careful deliberation, recommend the following:

[It is to be regretted that the limited time allowed this competent Committee for examination of the large display in this Class, did not permit them to give a more detailed description of the superior workmanship of our home-manufactured carriage work.]

LARKINS & Co.—General Display of Carriages, consisting of Landaus, Coupés, Victorias, Wagonnettes, Carts, Rockaways and Buggies.

We recommend the highest award to this display, as we consider it, taken as a whole, the finest ever made at the Exhibitions of the Institute.

For best Display. Gold Medal.

O'BRIEN & SONS.—General Display of Carriages, including one Kensington Oak and Walnut Wagon, Phætons, Surrey Buggies, Victoria, Brougham, Landau, Rockaways, Landalette, Carts, etc.

For best Hack. Silver Medal.

For best Coupé. Silver Medal.

For best Boy's Pony Carts. Diploma.

For best Top Buggy. Silver Medal.

- For best Open Buggy. Silver Medal.  
 For best Open Rockaway. Bronze Medal.  
 For best Unfinished Woodwork. Silver Medal.
- T. H. B. VARNEY.—Display of Bicycles. Silver Medal.
- JOHN F. EWING.—Milk Wagon. Silver Medal.
- THOMAS MAIER & Co.—Liquor Wagon. Diploma.
- J. A. BILZ.—Village Carts with Canopy Tops; Training Cart with Pole and Shafts and Pole Cart with Tops.  
 For best Village Cart. Bronze Medal.
- TRUMAN, HOOKER & Co.—Farm Wagon, Eastern make. Diploma.
- EWELL BOTTLED MILK Co.—Six-horse Milk Wagon; also Single-horse Milk Wagon.  
 For thorough-brace Milk Wagon. Diploma.
- E. H. HOLMES & Co.—Standard Cab and Brougham.
- M. LUXEMBERG.—Folding Baby Carriage. Diploma.
- W. B. WADMAN.—Revolving Advertising Chariot.
- STUDEBAKER BROS. MANUFACTURING Co.—General Display of Carriages, Eastern make, consisting of a Victoria, Landau, Brougham, Vis-à-Vis, Phaeton, Buggy, Dog Cart, etc.; also a Russian Sleigh.  
 For best Display of Imported Carriages. Grand Silver Medal.
- MERSEREAU & SONS.—Two Carts, one with Canopy Top, and one Open Buggy.
- \*MORTON BROS.—Special Delivery Wagon, complete, with Horse and Harness attached.
- \*CHAS. E. LARRABEE.—Swinging Carriage for the Amusement of Children. Diploma.
- \*THE COLUMBUS BUGGY COMPANY.—Empress Carriage, Park Surrey, English Dog Cart, Lady's Phaeton, Double Loop Phaeton, Buggies, and a Horse with Gold Mounted Harness.
- \*PETERS DASH COMPANY.—Buggy Dashes and Fenders.
- BAKER & HAMILTON.—Two and Three-Seated Spring Wagons with Top, Two-Seated Buckboard with Extension Top, Four-Spring and Grocery Wagon, Grocery Wagon, Modoc Road Cart, Benicia Tip Cart, with anti-horse motion, Wagon Brake.  
 For best Four-Spring Two-Seated Wagon. Diploma.  
 For best Buckboard. Diploma.
- \*WATERHOUSE & LESTER.—One Broncho Bicycle.
- \*PACIFIC COAST MANUFACTURING COMPANY.—Two Road Carts, with anti-horse motion, three sets Cart Wheels in the wood, and one Cart.

WESTERN TOP COMPANY.—Four Buggy Tops, one Canopy Top, one Buggy Body.

For Buggy Tops.

Diploma.

FRANK CULVER.—Wheel Brake Shoe.

Respectfully submitted,

H. BERNARD,

J. M. CAMP,

J. W. FARREN,

A. T. BECROFT,

J. W. SOHST,

Committee.

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## CLASS No. 21.

### Furniture, Upholstery, Etc.

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WE, the undersigned Committee, appointed by your Honorable Body to recommend awards in Class 21, would report, after careful consideration, as follows:

W. & J. SLOANE & Co.—Parlor, Library, Chamber and Dining-room Furniture, Carpeting, Draperies, etc.

This we consider the best display of furniture; and great credit is due the firm for the magnificent and costly display.

For best Display of Furniture and Carpeting.

Gold Medal.

BURR FOLDING BED COMPANY.—The Andrews, and the Burris Folding Beds, Ross' Table Washstand, and the Marks' Adjustable Reclining Chair.

For the Andrews Bed.

Bronze Medal.

For the Marks Reclining Chair.

Diploma.

LOUIS SEKOFSKI.—Patent Secretary Desk.

Diploma.

J. P. MIGHELL.—Drop and Roller Top Cabinets.

Diploma.

PACIFIC SPRING AND MATTRESS COMPANY.—General Display of California Made Furniture, Mattresses, Pillows and Iron Bedsteads.

We make mention of this exhibit as worthy of special notice, as your Committee believes in home industry.

Silver Medal.

E. H. MARWEDEL.—Brass Bedsteads, Window Shades and Curtain Poles.

Bronze Medal.

T. TUCKER.—“La Unique,” a new art for decoration of walls and ceilings. This occupied a space 40 feet in length, and was a very neat piece of workmanship.

Silver Medal.

F. S. CHADBOURNE & Co.—Antique Furniture.

A very costly and beautiful display.

Special Grand Silver Medal.

HEYWOOD BROTHERS & Co.—Display of Rattan Furniture.

Special Silver Medal.

THE BANCROFT COMPANY.—Display of School Furniture.

\*P. PERRINE.—Hammoquette Reclining Chair.

W. M. LOUDON.—Folding Tables for ladies' use.

Respectfully submitted,

GEO. W. ELDER,

R. H. DALEY,

JOHN BRYANT,

Committee.

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## CLASS No. 22.

### Billiard Table.

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THE undersigned jurors on Class 22 recommend as follows:

BRUNSWICKE-BALKE-COLLENDER COMPANY.—Billiard Tables and Bar Room Fixtures.

This was a very neat and costly display, arranged in an attractive manner.

Grand Silver Medal.

Respectfully submitted,

R. H. DALEY,

JOHN BRYANT,

GEO. W. ELDER,

Committee.

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## CLASS No. 23.

### Wooden Ware, Brushes, Wire Goods, Willow Ware, etc.

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AFTER a careful examination of the articles comprising No. 23, we present the accompanying:

DAVID WOERNER.—Cooperage.

This was a very elegant assortment of Wine Casks, Barrels, Beer Kegs, etc.

Grand Silver Medal.

BUCHANAN BROS.—Display of Brushes and Feather Dusters.

These brushes were of home manufacture, many being made in the building during the exhibition.

For Brushes.

Silver Medal.

For Feather Dusters.

Bronze Medal.

LEBENBAUM BROS.—“Automatic” Ice Cream Freezers and “Gold Medal”  
Carpet Sweepers. Diploma for each.

SCHUSTER BROTHERS.—Beer Pump Lemon Squeezer and Cork Drawer,  
combined. Diploma.

Respectfully submitted,

JOHN BRYANT,  
GEO. W. ELDER,  
R. H. DALEY,  
Committee.

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## DIVISION IV.

### MANUFACTURED PRODUCTS—ANIMAL AND VEGETABLE FABRICS.

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#### CLASS No. 24.

##### Boots, Shoes, Leather, Rubber Goods. Etc,

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THE undersigned, a Committee of Award on Class 24, beg leave to recommend the following:

LEATHER FEDERATION OF CALIFORNIA PRODUCTS.—Boots and Shoes; Upper Leather, Grain, Calf, Veals, Kips and Sides; Sole Leather, Heavy, Medium and Light; Harness Leather, Heavy Trace, Medium and Light; Skirting, Red and Fair; Alum Leather, Yellow and Red; Buggy Collar Leather; Russet Leather; Chapparal Leather; Walrus Leather; Glove Stock, Buckskin in all grades and colors, Dog Skin in Brown; Mats, Angora, all grades and colors, Dog Skin, Lynx, Coyote, Deer and Wildcat; Horse Hide, largest in the world, once worn by the Stallion “Pointsman,” live weight, 2,600 pounds.

All tastefully arranged in cases and on stands.

Much credit is due this association for its efforts and success in obtaining exhibits of leather and similar goods and their care of the same; and your committee suggest that the Institute make suitable recognition of the same.

In accordance with the above recommendation and desire of the Managers, at a meeting held October 24th, the following preamble and resolution was adopted unanimously, the same to be suitably engrossed and presented to the association in lieu of the usual premium:

“In consideration of the fact that the *Leather Federation of California Products*, through its energetic and active officers and members, has collected, suitably arranged and placed on exhibition, the largest, most comprehensive and valuable display of leather and its manufactures, ever before made on this Coast, or in the world, as far as quality is concerned, be it

“*Resolved*, That the *Mechanics’ Institute*, by its authorized Trustees and Officers, does hereby tender to the *Leather Federation of California Products*, its thanks, for their energy and effort in securing and placing before the public at the Twenty-fifth Industrial Exposition, so fine and comprehensive exhibit of an important industry.

“The display is an honor to California and the Leather Federation; and our people look upon it with pride as showing in a practical and instructive manner the extraordinary quality and variety of our leather and its manufactures when prepared by the skill and labor of competent workmen, and exemplifies in the most convincing way the advantages of this State for the investment of capital in the development of her great resources.”

KULLMAN, SALZ & Co.—Sole Leather, Welt Leather, Grain Leather, Buff Leather, Harness Leather, Fair Skirting.

For best Harness Leather.

Bronze Medal.

For best Boot Grain, Buff and Welt Leather and Cut Bottom Stock.

Bronze Medal.

PORTER, SCHLESSINGER & Co.—Ladies’ Boots and Shoes.

For best Ladies’ and Misses’ Hand-made Shoes, Pacific Coast Manufacture.

Silver Medal.

CAHN, NICKELSBURG & Co.—General Display of Boots and Shoes.

For the best general display of Boots and Shoes, Pacific Coast Manufacture.

Silver Medal.

For best Men’s Hand-made Boots and Shoes, Pacific Coast Manufacture.

Bronze Medal.

BUCKINGHAM & HECHT.—Men’s and Women’s Boots and Shoes.

CHRISTIAN HELLWIG.—General Display of Leather, Skins and Hides. Mammoth Hide of Stallion “Pointsman,” Buckskin, Glove Leather and Colored Glove Leather.

For best Kid, Buckskin and Glove Leather.

Silver Medal.

H. N. COOK.—Leather Belting and Pacific Coast Tanned Leather.

For best Leather Belting.

Silver Medal.

For best Rawhide Goods.

Bronze Medal.

FRENCH & LINFORTH.—Gandy Cotton Duck Belting.

Diploma.

An excellent exhibit.

NEVILLE & Co.—Belting (Leviathan.)

Diploma.

An excellent exhibit.

W. F. BOWERS & Co.—Rubber Goods of Pacific Coast Manufacture.

A very excellent exhibit.

(Gold Medal (see Class 5.)

ROSENTHAL BROS. & Co.—Boots and Shoes, Pacific Coast Manufacture, Eastern and Imported.

For best display of Ladies' and Misses' Shoes and Slippers of Eastern Manufacture. Silver Medal.

J. C. JOHNSON & Co.—Set Double Carriage Harness, and Whips. Silver Medal.

W. S. HALPRUNER.—Anatomical Shoe Lasts.

\*D. W. THOMPSON.—Silver Mounted Saddle, Bridle and Equipments.

\*E. O. WIENER.—Water-proof Boots and Shoes.

TRUMAN, HOOKER & Co.—Sherwood's Novelty Harness for Vineyard and Orchard Use.

CHARLES BENNETT.—Calf, Veals, Kips and Sides Leather of excellent quality. Diploma.

ANTON KREIG.—Sole Leather.

For the best. Bronze Medal.

A. B. PATRICK & Co.—Sole Leather, Harness Leather, Skirting, Red and Fair.

For best general display of Pacific Coast Tanned Leather. Grand Silver Medal.

FILER, THORN & Co.—Chapparral Leather, Russet, Buggy Collar Leather, Upper Leather Sides.

For best Fair Leather. Bronze Medal.

STEIN BROTHERS.—Upper Leather, (Sides and Kips.)

MATTEN & GEBHARDT.—Calf, Veals, Kips and Skins.

For best Calf Skins. Bronze Medal.

JOHN RILEY.—Kips, Side Leather, Sides Finished and Partly Finished.

For best Kip and Side Leather. Bronze Medal.

FRANK McALEAR.—Alum Leather, Red and Yellow; Skirting, Red.

For best exhibit of Alum Tanned Leather. Bronze Medal.

FRANK BROTHERS.—Walrus Leather, Sole Leather.

RAFFERTY & HOFF.—Calf Skins, Veal Skins and Kip Skins.

Respectfully submitted,

MARION LEVENTRITT,

H. KULLMAN,

F. CUMMINGS,

F. W. SUMNER,

THOS. R. HAYES,

Committee.



**CLASS No. 25.****Hemp, Cordage, Paper Furs, Silk, Hair, Etc.**

THE undersigned jurors on Class 25, having examined the articles submitted for our inspection, recommend as follows:

PACIFIC ROLL PAPER COMPANY.—Display of Paper and Hosking's Paper Holders and Cutters.

For best display of Paper, California Manufacture. (See Class 5.)  
Silver Medal.

J. F. WYMAN.—Fay's Water-proof Manilla Paper for Building Purposes, and for Carpeting and Rugs. Silver Medal.

J. C. JOHNSON & Co.—Carriage Robes.

SAN FRANCISCO CHRONICLE.—Paper for Cylinder Press. (See Class 5.)

JACOB NOWAK.—Skins of Animals killed and dressed by himself.  
Bronze Medal.

CHRISTIAN HELLWIG.—Land Otter, Sea Otter, Skins Dressed, Angora Goat Mats, Deer Skin Mats, Dog Skin Mats, Lynx, Wild-cat and Fox Mats.

For best sample of Furs, Cleaned and Dressed. Diploma.

For best Goat and Sheepskin Mats. Bronze Medal.

WM. LICHTENBERG.—Ramie Cloth.

PARAFFINE PAINT COMPANY.—Ideal Roofing, Sheathing and Lining Paper, Water-proof Wrapping Paper. Silver Medal.

Respectfully submitted,

THOS. R. HAYES,  
F. W. SUMNER,  
F. CUMMINGS,  
H. KULLMAN,  
MARION LEVENTRITT,  
Committee.

**CLASS No. 26.****Woolen Dress Goods, Etc.****CLASS No. 27.****Gentlemen's Furnishing Goods, Etc.****CLASS No. 28.****Ladies' Furnishing Goods, Dresses, Cloaks, Millinery, Etc.**

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(Classes No. 26, 27 and 28 Consolidated.)

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YOUR Committee, appointed to examine articles in Classes 26, 27 and 28, have complied with your request, and herewith submit the following:

**CLASS 26.**

W. & J. SLOANE & Co.—Carpets, Rugs and Draperies.

This was a fine display, with no competition. (See Class 21.)

MARYSVILLE WOOLEN MILLS, (Levi Strauss & Co., Agents.)—General Display of Woolen Goods, California Manufacture.

This was of especial merit and worthy of mention.

Grand Silver Medal.

CHARLES LYONS—Made a fine and large display of Cloths for Gentlemen's Wear.

Diploma.

**CLASS 27.**

LEVI STRAUSS & Co.—Riveted Overalls and Spring Bottom Pants.

This was a meritorious display, the goods being manufactured in the Pavilion by 20 expert women operatives taken from their factory on Bush street, where 400 are regularly employed. The exhibit of this firm was deservedly a center of attraction and well worthy of a high award.

Grand Silver Medal.

C. P. HEININGER.—Display of Walking Canes. (See Class 32.)

Bronze Medal.

J. M. LITCHFIELD.—Military Goods and Regalias, Banners, etc.

This large and elegant display of military and society goods was the largest and finest of its class ever made in the Pavilion, and deserves recognition.

Silver Medal.

J. H. KRUEGER.—Display of Canes.

## CLASS 28.

J. MAGNIN.—Ladies' Underwear, Manufactured in the Pavilion.

This Display attracted much attention and was constantly surrounded by interested spectators. About 25 girls, with the most improved sewing machines, were at work in the Pavilion each day and evening, in the manufacture of the finest and daintiest lingerie for ladies' use. Much praise is due Mr. Magnin for his enterprise and encouragement of white labor in home productions.

Grand Silver Medal.

GEO. E. MOSS.—Ladies' Gloves, Parasols and Umbrellas, California make.

This was a fine and meritorious display. Silver Medal.

MRS. M. H. OBER.—

Had a first-class Display of Ladies' Furnishing Goods, Union Flannels, Corsets, Waists, etc. Bronze Medal.

MME. A. HAMELIN.—Corsets.

This was the best display, and merits the award. Silver Medal.

W. M. LOUDON.—Studebaker's Adjustable Tailor Square, and Papier Mache and Leather Forms, for men and boys, plain and jointed.

Both very good. Bronze Medal.

J. M. BARTMAN.—Bartman Bros.' Corset Steels.

Worthy of special mention. Diploma.

MISS CLOTILDE WIEGAND.—Paper Flowers, made in the Pavilion.

This young lady made a good and artistic display of her handiwork, and deserves an award for the best. Bronze Medal.

MRS. J. M. CUMMINGS.—Dress-fitting Machines.

Respectfully submitted,

MRS. DR. EDNA R. FIELD,

MRS. J. Z. DAVIS,

MRS. W. R. GALLAGHER,

SAMUEL IRVING,

JOHN REID,

Committee.

## DIVISION V.

### ELECTRICAL, SCIENTIFIC AND DECORATIVE ARTS.

#### CLASS No. 29.

##### Electricity and Electrical Appliances.

THE undersigned Jurors on Class 29 herewith, respectfully, after a careful examination, beg leave to submit their report, as follows:

Owing to the fact that the exhibit of the California Electric Light Company and the Edison General Electric Company being so near equal, we pass making any recommendations for the "Best General Display," leaving the matter with the management.

CALIFORNIA ELECTRIC LIGHT COMPANY.—General Display of Electric Appliances and Electric Lighting.

For general display of Electric Light and Apparatus.

	Grand Silver Medal.
Best Cut-out.	Bronze Medal.
Best Resistance Coils.	Bronze Medal.
Best Current Meter.	Silver Medal.
Best Galvanometer.	Bronze Medal.
Best Volt Meter.	Bronze Medal.
Best Dynamos and Machines.	Silver Medal.

EDISON GENERAL ELECTRIC COMPANY.—Large and comprehensive Display of Electric Lighting and Appliances, including an Illuminated Revolving Christmas Tree and Column of Light. The last was paid for by the Management and placed in the center aisle near the entrance as a special attraction.

For general display of Electric Light and Apparatus.

	Grand Silver Medal.
Best Arc Lamp or Incandescent Circuit.	Grand Silver Medal.
Best Photographic Lamp.	Bronze Medal.
Best Fittings for Lamps.	Bronze Medal.
Best Safety Catches.	Bronze Medal.
Best Switches.	Bronze Medal.
Best Troughs, Tubes, etc.	Bronze Medal.
Best Incandescent System, low tension.	Silver Medal.

PARAFFINE PAINT COMPANY.—Coating and Insulating Material.

Bronze Medal.

- J. W. KLUMPKE.—Electric Bells. Bronze Medal.
- PACIFIC ELECTRICAL STORAGE COMPANY.—Storage Batteries and Apparatus for Lighting and Power.
- For best Electric System for Domestic Lighting. Silver Medal.
- Best Storage Battery. Silver Medal.
- C. GOULD.—Improved Electrical Alarm Clock. Bronze Medal.
- GUS DWORZEK.—Small Electric Motor (Amateur Work). Bronze Medal.
- \*SIMEON COLLING.—Electric Bells and Electric Bath Battery.
- L. GOLDSTONE.—Electrical Automatic Street Indicator. Bronze Medal.
- NATIONAL ELECTRIC DEVELOPMENT COMPANY.—500-light Dynamo in operation, and a large display of Electric Appliances, Machines and Electric Light.
- For best Incandescent, Alternating Transformer System. Silver Medal.
- PACIFIC AUXILIARY FIRE ALARM COMPANY.—Auxiliary Fire Alarm Apparatus, illustrating the system in operation in this City. Silver Medal.
- ELECTRICAL ENGINEERING COMPANY.—California Manufactured Dynamos and Electrical Appliances.
- For best California Manufactured Dynamos. Silver Medal.
- (Special Award by the Managers.)
- \*H. GONFOW.—Automatic Electric Battery.

Respectfully submitted,

JNO. M. KLEIN,  
E. CLARK,  
E. G. EISEN,  
D. D. WASS,  
SAM'L B. RANKIN,  
Committee.

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## CLASS No. 30.

Scientific Apparatus, Etc.

## CLASS No. 31.

Surgical and Dental Instruments and Appliances.

## CLASS No. 32.

Gold, Silver-Plated Ware, Watches, Clocks, Jewelry and  
Bronzes.

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(Classes No. 30, 31 and 32 Consolidated.)

THE Committee appointed by your honorable Board to investigate the respective merits of the several exhibits in Classes 30, 31, 32, and to propose

awards in favor of the most meritorious among them, has the honor to report that it found great satisfaction in the fulfillment of its duty, owing to the real merits of the several exhibits.

### CLASS 30.

The display of surveying, engineering, optical and scientific instruments on exhibition is very creditable to the Pacific Coast; and it is with great satisfaction that your committee finds itself enabled to state that these instruments are equal in excellence to those made by the best known Eastern manufacturers.

We would respectfully propose that awards be given to

JOHN ROACH.—Display of Optical and Surveying Instruments.

Grand Silver Medal.

STARKE & KAMMERER.—Display of Engineering and Surveying Instruments.

Grand Silver Medal.

DANIEL WAIDE.—Detroit Computing Scales.

The "Detroit Computing Scales" have been carefully inspected by your committee, and found to possess great merit. The combination of parts are the result of deep and intelligent thought; the mechanical execution is beautiful, correct, and the system of computation in connection with the weighing devices is very ingenious and useful.

AMERICAN CRYSTAL LENS COMPANY.—Spectacles and Eye Lenses in Frames.

The display of spectacles and eye lenses in frames made by the American Crystal Lens Company is very creditable and tasteful. The persons in charge of the exhibit show every attention to the many visitors, and never tire of explaining the merits—which are real—of their optical goods and display.

DEERE IMPLEMENT COMPANY.—Weighing Scale.

This exhibit consists of a "Fancy Howe Scale," to be found in the compartment occupied by the "Deere Implement Company." This scale has several new and improved features, some of which are more correct weighing, the dispensing with the separate circular weights, and the addition of an upward standard destined to measure the height of the person being weighed. Altogether, the "Fancy Howe Scale" is not only fancy, but is full of real merit.

DR. G. W. LEEK.—Dental Specimens and Tools.

This exhibit consists of an elegant display of artificial appliances to substitute the loss of dental organs in the mastication of food, revealing superior workmanship; and great credit is due to the exhibitor for the effort put forth and the large sum of money expended in revealing to the intelligent patrons of the Mechanics' Fair, the science and progress that has revolutionized the art of dentistry. We call especial attention to the gold crowns, pivot teeth, artificial full upper and lower sets of teeth, manufactured with rubber bases, and metallic; also, to the "bridge-work," which consists of a whole set of

teeth being held in the mouth without the aid of a plate covering the entire roof of the mouth, by simply using one or more roots as a means of anchorage. We regret that only one office has made an effort to exhibit the extraordinary progress the dental science has made from year to year.

The Committee recommends an award to Dr. G. W. Leek for the best specimens of dentistry. Silver Medal.

### CLASS 32

KATE M. BREEN.—Jewelry.

This exhibit of Miss Kate M. Breen is novel and attractive, as is evidenced by the attention it is receiving. It consists of moonstones (Niagara Falls) polished, and made up into jewelry, such as earrings, pins, bracelets and chains; also, alligator teeth, (natural) polished and colored, made into chains, etc. Diploma.

C. P. HEININGER.—Shell Jewelry.

This was a fine and attractive display, made principally from the abalone shell. Diploma.

THE UNITED STATES WATCH CLUB COMPANY.—Watches, Diamonds, etc.

This is a very valuable and attractive display of diamonds, watches and jewelry. The designs of the watch cases are numerous and pleasing; the movements contained in them of standard makes. The diamonds are mounted in earrings, pins and rings, and are of good size and quality. Too late for competition.

\*D. E. STRATTON.—Clock.

This gentleman has shown great ingenuity, skill and merit in his display of a clock. It is hand-made, and in design is artistic, while in its construction it gives evidence of the great time and labor spent upon it. Diploma.

Respectfully submitted,

A. VANDER NAILLEN,  
NAT. S. COULSON,  
GEO. STUART SIMONS,  
Committee.

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### CLASS No. 33.

#### Printing.

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Your Committee on Printing would respectfully report that they have examined the entries made in time for competition, and also those entered too late, and recommend as follows:

THE BANCROFT COMPANY.—Display of Publications and Printing.

For the best Specimens of Book Printing. Grand Bronze Medal.

PALMER & REY.—Printing on Presses manufactured by them.

VALLEAU & PETERSEN.—Printing Press and Work done in the Pavilion.

For best Printing from Wood Cuts. Diploma.

\*DEWEY & Co.—Illustrated Newspapers, Engravings, Books, etc.

\*LAMBERT BECKER.—Specimen Copy of the Pacific Coast Zither Journal.

BRUNT & Co.—Society Cards, Souvenirs, Badges, Fine Printing, and work done in the Pavilion.

For best Printing done in Pavilion. Silver Medal.

For Society Badges. Diploma.

JOSEPH TURNER.—Framed Prose and Poetry of his own Composition.

DANIEL WAIDE.—Bradley's Automatic Roll Paper Printer.

THE WASP.—Display of Lithographic Work.

We would suggest that in future the Premium List be modified to make some recognition of work done out of the Pavilion.

Respectfully submitted,

CHAS. A. MURDOCK,

GEORGE SPAULDING,

WM. M. CUBEY,

Committee.

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## CLASS No. 34.

### Hairwork, Needlework, Embroidery, Shellwork, Patterns, Etc.

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Your Committee on Class 34 respectfully report and recommend as follows:

L. GRASSLEY & Co.—Display of Gold Embroidery. Bronze Medal.

J. H. SQUIRES.—Embossed Worsted Work done in the Pavilion.

This exhibit is large and creditable. Diploma.

MRS. J. H. SLATER.—Knitted Bedspread and Pillow-shams.

This is an exhibit of "Spanish Work," and deserves special mention.

Diploma.

MISS MARY INGALLS.—Night Dress, Chemise, Drawers and Corset Cover.

The set is very perfect in design and finish, and in every way desirable for use. Diploma.

MRS. M. L. LANDERKIN, Sacramento.—Assortment of Hair Work. She also exhibits Skeleton Leaves and a sofa cushion of merit.

For Hair Work. Diploma.

MRS. C. B. HERVEY.—Crazy Quilt. Diploma.

MRS. WM. SCHENDEL.—Crazy Quilt. Diploma.



- MISS MARY MARX.—Exhibit of Knitted Bedspread and Sham.  
Of very fine workmanship and merit. Diploma.
- MRS. A. D. FILLEBROWN.—Knitted Bedspread. Diploma.
- MRS. O. W. KEITH.—Set of Baughfman's Adjustable Tailor System of Dress Cutting. Diploma.
- MRS. WM. SEA.—Embroidered Table Scarf, of considerable merit. Diploma.
- MISS NELLIE BRACKETT.—Lace Edge Pillow-sham. Diploma.
- MISS M. E. BLEAM.—Toilet Set of Hand Embroidery.  
This is a good exhibit and worthy of special notice. Diploma.
- MRS. L. McDONALD.—Embroidered (cross stitch) picture.  
Subject, "Moses in the Bulrushes." Diploma.
- MRS. D. M. JACKSON.—Embroidery in frame (best fine embroidery exhibited.) Diploma.
- MRS. S. DINSMORE.—Silk Bed-quilt, Embroidered with Flowers. Diploma.
- MRS. LAURA KIMBALL.—Lace Dress.  
This is an excellent specimen of fine crochet work. Occupied one year in making. Diploma.
- MISS A. D. MELTON.—Old Gold Scarf, Blue Silk Cushion, Linen, Doylies, Linen Tray Cover, set of Crochet Table Mats (all Spanish work.)  
This is a most excellent display of useful articles. For its special merit we recommend Grand Bronze Medal.
- MISS EMMA D. PETERSON.—Paper Flowers. Diploma.
- MRS. J. H. ROSS.—Pillow Shams and Bed Spread. Diploma.
- M. S. WEBB.—Embroidered Chair. Diploma.
- MRS. C. WILSON.—An Embroidered Table Cloth (Applique.)  
There is a great amount of labor on this Exhibit. Diploma.
- MRS. WM. STRACHAN.—Lace Pocket Handkerchief.  
The sewing is very fine and deserving of special mention for Excellence. Diploma.
- MRS. E. M. SCOTT.—Silk and Satin Bedquilts, with Portraits inserted. Diploma.
- MISS ANNIE HANSON.—Embroidered Bedquilt and Shams.  
This work is excellent. Diploma.
- MRS. W. C. SMITH.—Two Reception Aprons for Young Ladies.  
These are hand made and her own design, executed in Persian Embroidery, and all worthy of special notice for design and novelty of the style of work. Diploma.

- MISS AGGIE MULLEE.—Bedquilt.  
We award to her for best Quilt in the Exhibition, very beautiful, a  
Diploma.
- MRS. S. REED.—Crazy Quilt, by a lady 73 years old. Diploma.
- MISS ELIZABETH VESTY.—An exhibition of Skeleton Leaves and Sea Mosses;  
also Hand-made Point-lace, made in San Francisco.  
This a very beautiful Exhibit, and has attracted much admiration for its  
beauty of design and superior display.  
For Skeleton Leaves and Flowers. Diploma.  
For Hand-made Point-lace. Silver Medal.
- MRS. AGNES McCLOUD.—Best Floor Mat, Hand-made. Diploma.
- MISS LAURA GIBBONS.—Pin Cushion, Tidies, Muffler, Basket, etc.  
This is a beautiful display and tasteful in design. We consider it  
worthy of special notice. Diploma.
- MRS. A. L. MANCHESTER.—Best Pair of Slippers, of worsted, hand-knit.  
These Slippers are of beautiful and durable finish. A "Child's Sack"  
crochet of fine Saxony wool, very useful, was also in the Exhibit; but it was  
too late for competition.
- MRS. ANNA SCHWARK.—Hair Work and Wax Work.  
This exhibit is worthy of special notice, but came too late for competition.
- MRS. J. H. DRIVER.—Crochet Bedspread, Irish Flax.  
Too late for competition.
- MRS. H. K. HALL.—Fancy Silk Coverlid for Bed.  
This exhibit came too late for competition, but is worthy of special notice.
- MRS. W. BASHORE.—Crazy Quilt. Diploma.
- MRS. G. BRAY.—Knitted Bedspread. Diploma.
- MRS. AMELIA OCHS.—Star Tidies, Variegated Silks. Diploma.
- MISS R. RAYNARD.—Crochet Wool Work and Perforated Card-board Models.  
Diploma.
- MISS J. LAWSON.—Quilt Patch-work Embroidery; Cards of Paper Ornaments  
on Velvet. Diploma.
- MRS. MARY JOHNSON.—Bedquilts, Knitted and Crochet. Diploma.
- MISS FANNIE STEINER.—Bedspreads, Plush, Satin and Crochet.  
Diploma.
- MISS ANNIE CULLIGAN.—Mantel Cover. Diploma.
- MRS. WM. BRODERSEN.—A Natine Bedspread. Diploma.
- MRS. MARIA A. MERRILL.—Knit Quilt and a Silk Quilt. Diploma.
- MRS. L. CUNEO.—Fancy Bedquilt and two Pillow-shams. Diploma.
- MRS. J. A. MCKENZIE.—Two Bedspreads, Crochet. Diploma.
- MRS. F. M. TEWKESBURY.—Crazy Quilt, and Wreath made of Feathers.  
Diploma.

MISS J. TEUBNER.—One Crazy Quilt.

Too late for competition.

H. E. DAVENPORT.—Sofa Cushion, Rainbow Worsted Work.

Too late for competition.

MRS. R. C. LUCE, (87 years of age.)—Knitted Bed Spread, 700 pieces, showing the skill and ability of middle life. Diploma.

MISS GRACIE GOLDSTEIN, (13 years of age.)—An Apron in Crochet, showing the skill and patience of mature years. Diploma.

The last two Exhibits link together the labors of youth and age, associating pleasant memories.

Your committee have found much pleasure in the duties assigned them, and in the excellence and elegance of many of the Exhibits, in beauty of design and execution. Hoping, in the coming year, others more able will be selected to perform similar duties, we respectfully submit our report.

MRS. C. WATERHOUSE,

MRS. W. S. HEGER,

MISS FLORA DURDEN,

Committee.

**DIVISION VI.****FINE ARTS.**

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**CLASS No. 35.****Painting in Oil and Water Colors.****CLASS No. 36.****Ceramic Arts.****CLASS No. 37.****Sculpture, Statuary and Carving.****CLASS No. 38.****Engraving, Penmanship, Etc.****CLASS No. 39.****Photography.**

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[Classes 35, 36, 37, 38 and 39 consolidated for examination by one Committee.]

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Your Committee on Classes 35, 36, 37, 38 and 39 beg leave to report as follows:

In performing our duties in the Fine Arts Department we have found that, while a very liberal number of premiums have been offered, the full number of our local artists have not exhibited this year. In dealing with what is before us, we have taken into consideration the branch of art, and the quality in that branch, in grading the respective claims to the awards.

In Water Colors we found the two most important exhibits about balanced by their respective qualities, which, however, are in directly opposite directions; so we did not think it just to give the preference to either, but have given an equal award to each.

In Portraiture we find few examples, and the display in that important branch far below the known capacity of our local artists.

In Class 39, Photography, we find Marceau's exhibit to contain an advance in elegance of style and grace of pose. We also give much credit to Fowzer for good quality of photo work.

We also consider that the general exhibit of Oscar Foss, in a complete display of the finest kinds of apparatus, lenses and examples of photography, is very fine.

CLASS 35.

OIL PAINTINGS.

BEST AND LARGEST DISPLAY BY LOCAL ARTISTS.

First Premium, William Keith.....	Gold Medal and	\$80 00
Second Premium, R. D. Yelland.....	Silver Medal and	60 00
Third Premium, A. Bolognese.....		50 00
Fourth Premium, S. M. Brookes ..		40 00
Fifth Premium, E. Narjot ..		35 00
Sixth Premium, C. R. Peters... ,.....		30 00
Seventh Premium, Alice B. Chittenden.....		25 00
Eighth Premium, A. Joullin.....		20 00
Best Specimen Genre Painting, A. Bolognese, Cat. Nos. 173 and 176.		30 00
Best Specimen Landscape Painting, R. D. Yelland, Cat. Nos. 149, 151 and 152.....		30 00
Best Specimen Portrait Painting in 1890, Charles Carlson, No. 85 ...		25 00
Best Specimen Marine Painting, C. R. Peters, No. 60 and 61..		25 00
Best Specimen Still Life Painting, S. M. Brookes, No. 124.....		25 00
Miniature Painting on Ivory, S. M. Brookes .....	Bronze Medal	
For Miniature (Enamel), Madame G. Hofer.....	Silver Medal	

SPECIALS.

Display by Amateurs, Miss M. Williams .....	Diploma and	\$10 00
Display by Amateurs, Mrs. M. E. Laudén.....	Diploma and	10 00

We give a special prize of \$20 to Lee Lash for merit in Pictures, numbered on Catalogue as 90 and 87; also same to S. W. Shaw for No. 86 on Catalogue; also same to J. B. Wandesforde for meritorious Landscapes in Oil.

Also for merit in Oil Painting, "Peaches and Flowers," Miss E. M. McLellan, Catalogue Nos. 72 and 417. Diploma.

WATER COLORS.

Second Premium, William Keith .....	Silver Medal and	\$35 00
Second Premium, J. B. Wandesforde.....	Silver Medal and	35 00
Third Premium, C. Jorgensen... ..		30 00
Fourth Premium, Madame G. Hofer.....		25 00
Fifth Premium, O. Kunath, Cat. 290 and 291.....		20 00

We give a special prize of \$15 to A. Bolognese for merit in Architectural Interior in Water Colors, No. 347, "Courtyard."

Best Specimen Marine Painting, H. R. Hopps.....	\$15 00
Best Display by Amateurs, T. E. Vassault, No. 332.....	10 00
Winter Scene, Water Colors, Hugo Fisher.....	5 00
For Flowers, Miss Helen Chamberlain.....	Diploma
Landscapes in Water Colors, Miss Stella Austin.....	Diploma
“ Snow Scene,” 348 on Catalogue, Clarkson Dye.....	\$5 00

## CLASS 36.

Painting on Velvet, Miss Teresa Anson.	
Painted Fire Screen, Mrs. Wm. Sea.	
Painting on Porcelain, A. Verhaagen.....	Bronze Medal
Panel Screens, Mrs. J. D. Gibbs.	
Best Specimen of Painting on Porcelain by a Local Amateur, 12 Pieces, Mrs. Julia H. Crosett.....	Bronze Medal
Decorated China, Ceramic Ware and best Painting on Wood, C. W. Farnham .....	Bronze Medal
Kid and Gauze Fans, Hand Painted, Miss Susan Sroufe.....	Bronze Medal
Best Painting on Velvet, Miss Mary Johnson.....	Bronze Medal
Velvet Scarf, Hand Painted, Miss Grace Stewart.	
Best Painted Plaque, Miss Amelia Ochs.....	Bronze Medal
Botanical Specimens, E. A. Penniman.....	Diploma
Kensington Painting, Miss Gussie Burger.....	Diploma
Pictures in Wood Mosaics, Mr. Edouard Heynold.....	Bronze Medal
Pictures in Wood Mosaics, Mr. Max Schmidt.....	Bronze Medal

## CLASS 37.

## SCULPTURE, STATUARY AND CARVING.

Very Fine Display of Wood Carving, L. U. Hoffman.....	Silver Medal
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BEST MODELING OR WORK OF SCULPTURE OF ORIGINAL DESIGN BY A  
LOCAL ARTIST.

First Premium, F. Happerburger, Cat. No. 422, “ Last Arrow”...	Gold Medal
Second Premium, R. Schmid, Cat. No. 426, “ Bust of Karl Formes ”.....	Grand Silver Medal
Third Premium, F. Marion Wells, Catalogue No. 421, Statue “ Marshall ”.....	Silver Medal
P. J. PLATZER.—Display in Marble of Baby in Cradle, Small Arch, and Bust of A. Lincoln.	

## CLASS 38.

Best Original Crayon Drawing (Plain), Oscar Kunath.....	Diploma
Best Original Crayon Drawing (Colored), O. Kunath, Cat. No. 289..	Diploma

- Crayon Portrait, "California Diamond," Oliva Kingsland,  
 Cat. No. 325..... Diploma  
 Best Original Pen Drawing, Heald's Business College..... Diploma  
 Best General Display of Penmanship, Heald's Business College..Silver Medal  
 Best General Display of Drawing, School of Design..... Silver Medal  
 Best Specimen of Penmanship, Heald's Business College.....Bronze Medal  
 Superior Penmanship, Fielding Schofield. .... Bronze Medal  
 Best Specimen of Pen Lettering and Engrossing, T. R. Southern..Bronze Medal  
 Best Specimen of Card Writing, T. R. Southern... ..Diploma  
 Architectural and Freehand Drawing, A. I. A. Sketch Club....Bronze Medal  
 Best Original Architectural Drawing, H. G. Hamada.....Silver Medal  
 To Set of Plans for original designs of an Exhibition Building,  
 275x412 feet: Plans marked "Junius," Samuel C.  
 Benson.....Gold Medal and \$50 00  
 To San Rafael Technical School, Architectural and Mechanical  
 Drawing.....Diploma  
 To I. M. Salazar, Pupil of San Rafael Technical School, for  
 Architectural Drawing... ..Diploma  
 To S. K. Colby, Pupil of San Rafael Technical School, for  
 Mechanical Drawing.....Diploma  
 To Pupils of School of Design:  
 To Draughtsman of the "Discobolus," marked 8.. ....Diploma  
 To Eleanor McFarland, Sketches of Head.....Diploma  
 To Miss M. Froelich, Oil Studies.. .... Diplomat  
 To Takahashi, for Water Color Sketch. ....Diploma  
 To Pupil of Mechanics' Institute Evening Classes:  
 C. B. Paine, Freehand Drawing.....Diploma  
 J. B. Slinn, Silhouettes and Profile Drawing.

CLASS 39.

- Best General Display of Photographs, Theo. C. Marceau.....Gold Medal  
 To Jacob Fowser, for Photographic Work of Excellent Quality....Silver Medal  
 Best Specimen of Views and Interiors, J. W. Stateler.....Silver Medal  
 Best Display of Photo Apparatus, Oscar Foss .....Silver Medal  
 Cabinet Cards and Photos, Abell & Priest.....Diploma  
 W. B. TOWNSEND.—Amateur Photography. ....Diploma.  
 JAMES FISH & Co.—Photographs Finished in Crayon.

Respectfully submitted,

GEO. H. BURGESS,  
 WARREN WILKINSON,  
 ED. W. TOWNSEND,  
 GEO. R. WELLS,  
 Committee.

## DIVISION VII.

## CHEMICAL AND FOOD PRODUCTS.

## CLASS No. 40.

## Chemical and Pharmaceutical Products.

Your Committee on Exhibits in Class 40 beg leave to report as follows: In this Class we find a large number of medicinal compounds unaccompanied by their composition, and your Committee find it impossible to intelligently pass on their merits or demerits. From our general knowledge of such decoctions, we deem them unworthy of a place in the Mechanics' Fair. Such materials are empirical mixtures, and their compounders are, as a rule, entirely ignorant of their physiological and chemical effects on the human system. Consequently, we take no note of such exhibitions.

C. H. WEBB.—Hæmony Blood Purifier.

A. HAAS.—Bone Charcoal and Fertilizer. Silver Medal.

MUTUAL MANUFACTURING COMPANY.—Yankee Baking Powder, Extracts of California Manufacture.

For Extracts. Silver Medal.

JNO. HORSTMANN.—Bicarbonate of Soda, Borax and Lavarine.

Silver Medal.

PARAFFINE PAINT COMPANY.—“P. & B.” Preservative Paints.

Terredo-proof Pile Covering. Silver Medal.

CHAS. E. HIRES.—Hires' Root Beer.

OSCAR MAYER.—Morse's Anti-headache Wafers.

\*JOS. N. SOUTHER MANUFACTURING COMPANY.—Dr. Abernethy's Green Ginger Brandy.

BARTLETT SPRINGS MINERAL WATER Co.—Bartlett Springs Mineral Water.

Diploma.

STRATTON & WHELDON.—Compound for Cleaning Carpets, etc.

Diploma.

A. H. SMITH & Co.—Cologne and Sachet Powders, Anti-Obesity Tea.

For Cologne and Sachet Powders. Diploma.

BALDWIN'S GERM EXTERMINATOR Co.—Baldwin's Germ Exterminator.

J. H. L. TUCK.—Subsoil Irrigator and Phylloxera Destroyer.

BOGLE'S QUAKER MEDICINE Co.—Quaker Balm, Salve and Pills.



MRS. J. AITKEN. — Magic Corn and Bunion Salve; also Furniture Polish and Eye Water.

MRS. DR. PLATT. — Jo He, "Lone Star" Magic Oil.

RADAM'S MICROBE KILLER Co. — Microbe Killer.

J. P. FORBES & Co. — Castalian Mineral Water. Diploma.

W. S. HALPRUNER. — Liniment and Patent Corn Salve.

J. L. SCOFIELD. — Miss Beache's Curling Fluid.

FORBES & PUYOOU. — Cosmetics.

WELCH INHALER AND MEDICINE COMPANY. — Welch's Inhaler.

J. WOLFF. — Adams' & Sons Chewing Gums.

E. M. WILSON. — E. M. Wilson's Vaporizing Inhaler.

ANDERSON'S SPRINGS. — Mineral Water, Catarrh Snuff and Gargle. Diploma.

MOSHER, CHANDLER & Co. — I X L Compound Vine and Tree Wash.

COBURN, TEVIS & Co. — Pure Olive Oil; Coburn's Olive Oil; Black Harness; Oil; C. and S. Axle Grease; Peerless Axle Grease; Sperm Peerless Lubricating Compound; Lubricating Oil—all California Products.

For Olive Oil. Silver Medal.

For C. and S. Axle Grease. Diploma.

For Lubricating Oil. Diploma.

ENOCH MORGAN & SONS. — Sapolio.

JAMES C. WEST. — Boiler Scale Compound. Silver Medal.\*

HEUTER BROS. — Varnishes and Glycerine, both California Manufacture.

For Varnishes. Silver Medal.

For Glycerine. Diploma.

JAMES RUTLEDGE. — Morris Poultry Cure.

\*GIANT POWDER Co. — Nobel's Explosive Gelatine; Gelatine Dynamite; Giant Powder; Judson Powder.

G. W. THOMPSON. — Soda Water and Apparatus.

JOHN T. CUTTING COMPANY. — Cleveland Baking Powder; Prescott's Enameline Stove Polish; James Ryles' Pearline.

For Baking Powder. Bronze Medal.

For Stove Polish. Diploma.

Respectfully submitted,

THOMAS PRICE,

L. R. ELLERT,

W. B. RISING,

Committee.

**CLASS No. 41.****Groceries, Meats, Flour, Etc.**

THE undersigned Committee appointed to examine articles in Class 41, have performed that duty, and submit the following for your approval:

MANHATTAN FOOD COMPANY.—Manhattan Food for Horses, Poultry, Pigs and Cattle. Diploma.

W. A. PETTIJOHN.—Breakfast Gems, manufactured in the Pavilion. Silver Medal.

PACIFIC CONDENSED MILK, AND COFFEE CANNING COMPANY, of Los Angeles.—Condensed Canned Milk and Coffee. Silver Medal to each.

J. WOLFF.—Royal Dutch Cocoa, Amsterdam, Holland. Diploma.

J. WOLFF.—Baker & Co. Flavoring Extracts, Portland, Maine. Diploma.

JOHN T. CUTTING Co.

Condensed Milk, Unsweetened, Highland Brand. Diploma.

King's Quick-rising Buckwheat Flour. Diploma.

Canada Sap Maple Syrup, by the National Syrup Co. Silver Medal.

WM. S. TOWNSEND.

California Glace Fruits. Grand Silver Medal.

Candies, and the manufacture of Candies. Diploma.

H. H. H. HARKEY.—Display of Teas, Coffees and Spices. Diploma.

T. A. SNIDER PRESERVE Co.

Tomato Home-made Catsup. Diploma.

Tomato Soup. Diploma.

Lancastershire Sauce, Snider's Salad Dressing, Chili Sauce.

MUTUAL MANUFACTURING Co.—Spices. Bronze Medal.

D. S. CIPHERS.—Pop Corn and its Manufacture.

BECK & SONS.—Display of Log Cabin Maple Syrup. Diploma.

Respectfully submitted,

W. B. RISING,  
L. R. ELLERT,  
THOMAS PRICE,  
Committee.

## DIVISION VIII.

### NATURAL PRODUCTS.

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#### CLASS No. 42.

**Wines and Brandies of California Production, from California Vineyards.**

#### CLASS No. 43.

**Fermented Products.**

#### CLASS No. 44.

**Tobacco.**

#### CLASS No. 45.

**Geology, Mineralogy, Zoology, Botany, etc.**

#### CLASS No. 46.

**Farm Products.**

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[Classes Nos. 42, 43, 44, 45 and 46 Consolidated.]

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#### CLASS 42

THE Jurors appointed to examine and recommend awards in Classes 42, 43, 44, 45 and 46, have complied with your request, as well as the limited time would allow, and submit the following:

H. W. CRABB.—Display of California Wines and Brandies from the Tokalon Vineyard, Napa County.

For the finest display of California Wines and Brandies a Gold Medal was offered in the Premium List. We regret that but one Vineyard displayed sufficient enterprise to make an exhibit, and it is with us a source of still greater regret that the numerous brands of Wine and the exhibit of Brandies was of a quality so much below the average standard of California excellence that we deem it our duty to pass the exhibit with the foregoing remarks.

In accordance with the Premium List, the Board of Managers awarded Mr. Crabb, for the best display of Wines and Brandies. Gold Medal.

HENRY POSTEL & Co.—Orange Cider.

We deem this worthy of a Diploma.

COBURN, TEVIS & Co.—Mott's Cider (Westchester County, New York) is of an indifferent nature and does not require any commendatory comment.

AMERICAN CHAMPAGNE COMPANY.—American Champagne manufactured in California from pure old Grape Wine, the carbonic acid being produced by fermentation through the "Reihlen Process." For Exhibition only.

A. FINKE'S WIDOW.—California Champagne.

Too late for competition.

### CLASS 43.

FREDERICKSBURG BREWERY.—Export and Draught Lager Beer.

JOHN WIELAND.—Export and Draught Lager Beer.

In regard to the competition between the John Wieland and Fredericksburg Breweries for the Gold Medal, your committee have been unable to determine to which one it should be awarded. Both Breweries furnished us with admirable Beers, both Draught and Export, and we feel that justice can only be done to the respective Breweries by awarding to each Brewery

A Grand Silver Medal.

By mutual consent, the Managers awarded to the John Wieland and Fredericksburg Breweries a Gold Medal.

WILMERDING & Co.—Peruvian Bitters.

JAS. H. GATES & SON.—Dr. Hall's Pepsin Cascara Vitalizer.

LASH BITTERS COMPANY, (Sacramento, Cal.)—Lash's Bitters.

The Bitters exhibited do not call for any special mention, and your Jurors are of the opinion that awards for such patent preparations should be abolished.

J. H. BURNELL.—Albion Ale and Porter.

The Ale displayed by the Albion Company merits recognition, but the Porter that accompanied it was of such a character that it received the condemnation of the committee.

### CLASS 44.

PIERRE LORILLARD & Co.—Display of Tobacco.

The Chewing Tobacco entitled "Turtle" is entitled to a Premium.

Bronze Medal.

CLASS 45.

WM. E. ALLEN.—Display of Coal and a Castle made of that material.  
Mr. Allen is entitled to the award for the best exhibit of Coals of the Pacific Coast. Silver Medal.

JOHN S. HITTELL.—Samples of Building Stone.

CANADIAN ANTHRACITE COAL COMPANY.—Exhibit of Coal. Diploma.

INYO MARBLE COMPANY.—Marble from their quarries at Keeler, Inyo Co.  
(See Class 16.) Silver Medal.

ALEX. KELLER.—Mineralogical Specimens, Fossils, Stones for various purposes, and Geological Collection, Curios, etc.

As a reward for his patience and exhibit we would recommend a cash award. \$25.00.

CALIFORNIA MARBLE AND BUILDING STONE COMPANY.—Display of Marble and Building Stone. (See Class 16.) Grand Silver Medal.

W. W. SALE.—Collection of Bird's Eggs. Diploma.

KIMBALL BROS., San Diego.—Finished Specimens of Marble. Diploma.

A. J. FORBES & SON.—Best General Collection of Woods of the Pacific Coast. Grand Silver Medal.

MARC M. LICHTENSTEIN.—Collection of Rare Coins. Diploma.

REDINGTON & Co.—Display of Sponges. Diploma.

MISS ETTA BRAY.—A collection of 3,000 Buttons, all different. Diploma.

MISS MAGGIE RILEY.—Collection of Buttons, about 2,000. Diploma.

MISS FLOSSIE DEMING.—A collection of 3,000 Buttons, no two alike. Diploma.

Your Jurors would recommend that, at your next Exhibit, you offer a cash premium for a systematic arrangement of buttons (no two alike) on cards that will enable the general public to see what a diversity there is in such common appendages to our garments.

J. W. TOBIN.—California Woods, Natural, Polished and Stained. Diploma.

NEAL VAN DOORMAN.—Novelties made from Wood and Bark of the World's Fair Big Tree. Diploma.

C. P. HEININGER.—Abalone Shells and Jewelry. (See Class 32.)

CLASS 46.

H. W. CRABB, Oakville, Napa Co.—50 varieties of Wine and Table Grapes. Silver Medal.

For best display of Wine Grapes.

For best display of Table Grapes. Silver Medal.

E. A. MOORE, Reno, Nev.—Comb and Strained Honey.

Bronze Medal.

THE EWELL BOTTLED MILK COMPANY.—Display of Milk.

Many gallons of this necessary article were distributed to visitors each evening and Saturday afternoon. An interesting part of the exhibit was a refrigerator of Mr. Ewell's invention, having a glass front, wherein, by the aid of an ice machine, could be seen the formation of ice used in cooling the milk.

Diploma.

\*WESCOTT & Co.—Display of Garden Seeds, which were distributed to visitors at the close of the Exposition.

MARICOPA & PHOENIX RAIL ROAD COMPANY.—An exhibit of Small Dried Adriatic Figs from Salt River Valley, Arizona.

Diploma.

M. DENICKE.—Display of Dried Figs of superior quality, from Fresno, Cal.

Diploma.

BARON J. H. VON SCHRODER.—Display of Dried Prunes, "Petit Prune d'Agen," from Eagle Ranch, San Luis Obispo Co.

Diploma.

JOHN WIELAND.—Display of Hops.

Silver Medal.

CALIFORNIA COTTON MILLS, East Oakland.—Raw Cotton Fiber and Seed.

LEBENBAUM BROS.—Display of Jellies and Jams in glass, home-made.

Silver Medal.

ALAMEDA SUGAR Co.—Sugar made from Sugar Beet.

PROF. E. W. HILGARD, of the State University.—A Growing Ramie Plant.

In view of the adaptability of the Ramie Plant to California soil, and the excellent qualities of cloth that can be made from its fibres, your jurors think that efforts should be put forth by the Institute to acquaint the general public with its uses.

W. H. MURRAY.—Ramie Machine showing in practical operation the production of Ramie Fibre from the stalk by a dry process.

This Exhibit was visited by many interested in textile products of which the Ramie is so important, as from it a fibre is extracted which, under proper management, is superior to that of any other plant.

The fibre when prepared for the spinner is beautifully white, soft and glossy, closely resembling floss silk in appearance. It is much stronger than the best flax, and readily receives the most difficult dyes without injury to its strength or lustre. Velvets and laces made of Ramie will last a life time, and are almost as beautiful as if made of silk. In fact, whatever fabric is demanded, from the lightest gauze to the heaviest canvas, Ramie will supply.

The following commendations in regard to the exhibit will be of interest;

SAN FRANCISCO, October 16th, 1890.

*To the Directors of the Mechanics' Institute:*

GENTLEMEN:—Having seen the Ramie machine, exhibited by W. H. Murray at the Fair, in practical operation, and producing fiber from the

Ramie stalks, we are pleased to state, as manufacturers of cotton goods, jute bags and cordage, that we can work the fiber made by said machine and produce articles of commercial value therefrom. In proof of this fact we will soon be able to present to your honorable body samples of twine, rope and other goods.

Respectfully submitted,

J. Y. MILLAR, Secretary,  
WILLIAM RUTHERFORD, Superintendent,  
H. L. CENTER, Director,  
California Cotton Mills Co.

SAN FRANCISCO, October 17th, 1890.

*To the Directors of the Mechanics' Institute:*

GENTLEMEN:—We desire to inform your honorable body that we have witnessed this day the production of Ramie fiber by the machine exhibited at your Fair by W. H. Murray. The Ramie stalks from which the fiber was produced were grown in the experimental gardens of the State University at Berkeley, California.

We have seen the letter addressed to you by the managers of the California Cotton Mills, at East Oakland, and if these gentlemen are not mistaken in their conclusions, there will likely be many important, new and valuable industries established in our State on account of this Ramie machine.

Respectfully yours,

W. B. EWER, Publisher,  
F. P. McLENNAN, Wool Merchant,  
A. C. PRINGLE, Golden Gate Woolen Mills,  
A. P. BACON, San Francisco,  
M. B. DODGE, Machinist.

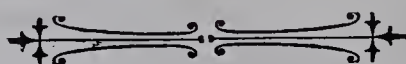
Respectfully submitted,

W. D. JOHNSON, M. D.  
WM. M. SEARBY,  
ROBLEY D. JOHNSON, M. D.,  
Committee.

## CLASSIFIED LIST

— OF —

# PREMIUMS AWARDED.



## GOLD MEDALS.

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Class.	Exhibitor.	Article.
2	C. H. Evans	Best Display of Pumping Machinery
5	W. F. Bowers & Co	Display of Rubber Machinery and Manufacturing Goods.
11	Baker & Hamilton	Best Display of Agricultural Implements
18	Sanborn, Vail & Co	Display of Paintings, Engravings and Art Work
18	John Mallon	Art, Ground, Cut and Embossed Glass
20	Larkins & Co	Best Display of Carriages
21	W. & J. Sloane & Co	Best Display of Furniture and Carpeting
35	William Keith	First Prize for Oil Paintings
37	F. Happersberger	First Prize for Sculpture "Last Arrow"
38	S. C. Benson	Best Original Design for Exhibition Building
39	Theo. C. Marceau	Best General Display of Photographs
42	H. W. Crabb	Best Display of California Wines and Brandies
43	John Wieland and Fredericksburg Breweries	Best Export and Draught Lager Beer.

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## GRAND SILVER MEDALS.

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Class.	Exhibitor.	Article.
1	Golden State and Miners' Iron Works	Thompson's Compound Steam Engine.
1	W. H. Ohmen	Best Automatic High Speed Compound Steam Engine
1	Joshua Hendy Machine Works	Best Display Steam Engines. Boilers and Steam Users Supplies.
2	Dow Steam Pump Works	Best Steam Pumps, Direct and Double Action.



Class.	Exhibitor.	Article.
5	Palmer & Rey	Best Printing Machinery and Supplies
5	A. S. Hallidie	Improved Wire Cable
5	Pacific Laundry Machinery Co.	Laundry Machinery in Operation
10	California Wire Works	Wire Rope and Wire Goods
13	Sherman S. Jewett & Co.	Best Display of Stoves and Ranges, and Stoves of California Manufacture.
16	Rapid Safety Filter Co.	Best Water Filter
17	Union Pressed Brick and Terra Cotta Co.	Display of Pressed Brick
17	Gladding, McBean & Co.	Architectural Terra Cotta
17	California Marble and Building Stone Co.	Cut Marble and Stone
18	California Sash Balance Co.	Marshall's Improved Sash Balance
18	California Veneer Co.	Redwood Veneers
20	Studebaker Bros. Manufacturing Co.	Best Display Imported Carriages
21	F. S. Chadbourne & Co.	Antique Furniture
22	Brunswick-Balke-Collender Co.	Best Billiard Tables and Bar Room Furniture.
23	David Woerner	Best Display of Cooperage
24	A. B. Patrick & Co.	Best Display Pacific Coast Tanned Leather
26	Marysville Woolen Mill, Levi Strauss & Co., Agents.	Best Woolen Goods, California Manufacture.
27	Levi Strauss & Co.	Riveted Overalls and their Manufacture
28	J. Magnin	Ladies' Furnishing Goods and their Manufacture
29	California Electric Light Co.	Display of Electric Light and Apparatus
29	Edison General Electric Co.	Display of Electric Light and Apparatus
29	Edison General Electric Co.	Best Arc Lamp, on Incandescent Circuit
30	John Roach	Best Display of Surveying and Optical Instruments
30	Starke & Kammerer	Engineering and Surveying Instruments
37	R. Schmid	Bust of Carl Formes
41	W. S. Townsend	Glacé Fruits
45	A. J. Forbes & Son	Display of California Woods

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SILVER MEDALS.

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Class.	Exhibitor.	Article.
1	Harding Electrical Manufacturing Co.	Gas Engine
1	Joshua Hendy Machine Works	Russell's Automatic Engine
1	M. B. Dodge.	Vertical Compound Steam Engine
1	J. T. Wilson	American Balanced Slide Valve
2	Dow Steam Pump Works	Best Deep-well Steam Pump
2	Dow Steam Pump Works	Best Miners' and Sinking Pump
2	Pacific Manufacturing Co.	Display of Hand and Windmill Pumps and Well-boring Tools.

Class.	Exhibitor.	Article.
3	C. F. Marwedel.....	Display of Machinists' Tools and Supplies
5	Leo Alexander & Co.....	Best Type-writer, "Smith Premier"
5	Samuel Hill Co.....	Edison Mimeograph
5	W. A. Pettijohn.....	Germea Mill in Operation
6	E. G. Denniston.....	Silver Amalgamated Plates
6	M. B. Dodge.....	Rock Breaker with Ore Sampler Combined
10	J. L. Hicks.....	Best Display of Sewing Machines
10	H. A. Hebard.....	Love Button-hole, and Sewing Machine
11	Deere Implement Company.....	Best Potato Digger
11	Mosher, Chandler & Co.....	Best Fruit and Orange Grader
11	G. D. Sharpless.....	Cream Separator
12	Folding Iron Gate and Guard Co.....	Iron Gate and Guard
13	Geo. W. Shreve.....	Steam Cooker
13	Wiester & Co.....	Vapor Gas and Gasoline Stoves
13	San Francisco Gas-light Co.....	Gas Cooking Stoves
13	Mrs. Henry Cone.....	Heat Regulator for Stoves
13	John F. Myers.....	General Display of Stoves and Lamps
13	Adams & Pritchard.....	Steel Ranges
14	Liddle & Co.....	Guns, Fishing Tackle and Sporting Goods
16	A. S. Graff & Co.....	Coal Oil Lamps with Graff's Patent Burner for same, California Manufacture.
16	John F. Myers.....	Coal Oil Lamps
17	W. D. Perine.....	Samples of Roofing Slate
17	California Adamant Wall Plaster Co.....	Adamant Wall Plaster
17	Inyo Marble Co.....	Display of Finished Marble
19	Herman Muller.....	Best Stringed Instruments, Zithers
19	W. G. Badger.....	Best Display of Pianos and Organs (Imported.)
20	O'Brien & Sons.....	Best Hack
20	O'Brien & Sons.....	Best Coupé
20	O'Brien & Sons.....	Best Top Buggy
20	O'Brien & Sons.....	Best Open Buggy
20	O'Brien & Sons.....	Best Unfinished Carriage Work (Coupé)
20	J. F. Ewing.....	Milk Wagon
20	T. H. B. Varney.....	Best Display of Bicycles
21	Pacific Spring and Mattress Co.....	Furniture and Bedding of California Manufacture.
21	T. Tucker.....	Decorated Ceiling and Wall "Unique."
21	Heywood Bros.....	Rattan Furniture
23	Buchanan Bros.....	Best Display of Brushes
24	Cahn, Nickelsburg & Co.....	Best General Display of Boots and Shoes, Pacific Coast Manufacture.
24	Porter, Schlessenger & Co.....	Best Display Ladies' and Misses' Hand Made Shoes, Pacific Coast Manufacture.
24	Rosenthal Bros. & Co.....	Best Display Ladies' and Misses' Boots, Shoes and Slippers (Imported.)

Class.	Exhibitor.	Article.
24	H. N. Cook	Best Leather Belting
24	J. C. Johnson & Co.	Best Harness
25	J. F. Wyman	"Fay's" Water-proof Manilla Paper
25	Paraffine Paint Co.	Sheathing and Water-proof Paper
25	Christian Hellwig	Best Kid, Buckskin and Glove Leather
25	Pacific Roll Paper Co.	Best Display of Paper, California Manufacture
25	J. M. Litchfield	Display of Military Goods, Regalias and Banners
28	Geo. A. Moss.	Ladies' Gloves, Parasols and Umbrellas, California Manufacture.
28	Madame A. Hamelin	Best Display of Corsets
29	California Electric Light Co.	Best Current Meter
29	California Electric Light Co.	Best Dynamos and Machines
29	Edison General Electric Co.	Best Incandescent System, Low Tension
29	Pacific Electrical Storage Co.	Best Electric System for Domestic Lighting
29	Pacific Auxiliary Fire Alarm Co.	Best Fire Alarm
29	National Electrical Development Co.	Best Incandescent Alternating Transformer System of Electric Lighting.
29	Pacific Electrical Storage Co.	Best Storage Battery
29	Electrical Engineering Co.	Best California Manufactured Dynamos
31	Dr. G. W. Leek	Dental Specimens and Tools
33	Brunt & Co.	Best Printing done in Pavilion
34	Mrs. Elizabeth Vestey	Hand-made Point Lace
35	R. D. Yelland	Second Premium, Oil Paintings
35	William Keith	Second Premium, Water Colors
35	J. B. Wandesforde	Second Premium, Water Colors
37	L. U. Hoffman	Display of Wood Carving
37	F. Marion Wells	Statue of "Marshall"
38	Heald's Business College	Best General Display of Penmanship
38	School of Design	Best General Display of Drawing
38	H. G. Hamada	Best Original Architectural Drawing
39	Jacob Fowzer	Photographic Work of Excellent Quality
39	J. W. Stateler	Best Specimen of Views and Interiors
39	Oscar Foss	Best Display of Photographic Apparatus and Material
39	Madame G. Hofer	For Miniature Painting
40	A. Haas	Bone Charcoal and Fertilizer
40	Jno. Horstmann	Lavarine
40	Paraffine Paint Co.	"P. & B." Preservative Paints, Terredo-proof Pile Covering.
40	Coburn, Tevis & Co.	Olive Oil
40	James C. West	Boiler Scale, and Compound
40	Hueter Brother	Varnishes, California Manufacture
41	W. A. Pettijohn	Breakfast Gem, Manufactured in Pavilion
41	Pacific Condensed Milk, and Coffee Canning Co.	Condensed Coffee
41	Pacific Condensed Milk, and Coffee Canning Co.	Canned Milk
41	National Syrup Co.	Canada Sap Maple Syrup

Class.	Exhibitor.	Article.
41	Mutual Manufacturing Co.....	Best Flavoring Extracts
45	W. E. Allen.....	Best Exhibit of Coals of Pacific Coast
45	Inyo Marble Company.....	Display of Marble
46	H. W. Crabb.....	Best Display of Wine Grapes
46	H. W. Crabb.....	Best Display of Table Grapes
46	John Wieland.....	Best Exhibit of Hops
46	Lebenbaum Bros.....	Best Jellies and Jams (Home Made)

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### GRAND BRONZE MEDALS.

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Class.	Exhibitor.	Article.
5	S. F. Chronicle.....	Stereotype Plates
6	Risdon Iron Works.....	Improved Garnier Concentrator
8	W. T. Y. Schenck.....	Best Hose Reel
13	J. De la Montanya.....	Stoves, Ranges, Grates and Furnaces
15	Pierce & Co.....	Cash Registers
19	B. Curtaz & Sons.....	Best General Display of Musical Instruments
33	Bancroft Company.....	Best Book Printing
34	Miss A. D. Melton.....	Display of Spanish Work (Embroidery)

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### BRONZE MEDALS.

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Class.	Exhibitor.	Article.
1	John Mailer.....	Improved Grate Bar
1	J. T. Wilson.....	American Steam Balanced Piston
2	Dow Steam Pump Works.....	Plunger Pump in Motion
2	Risdon Iron Works.....	Davidson's High Speed Steam Pump
5	M. E. Willis.....	Street Car Fare Box and Charge Gate
9	Cecil Nixon.....	Model of an American Steamship
10	I. S. Cohen.....	Best Combination of Eyelet and Button-hole Machine
11	Deere Implement Company.....	Best Riding Cultivator
11	Truman, Hooker & Co.....	Best Hay Elevator "Oliver Derrick"
13	Fred Jantzen.....	Oil Stoves
13	San Francisco Gas Light Co.....	Gas Heating Stoves
13	John F. Myers.....	Gas Heating Stoves
13	Novelty Hardware Co.....	Odorless Fry Pan and Boiler
16	Wiester & Co.....	Water Filters
18	Eureka Ventilating Co.....	Wall, Window, Transom, Skylight and Door Ventilators.
18	Chas. A. Hare.....	Gardner Sash Balance and Attachments

Class.	Exhibitor.	Article.
18	Thos. Carson.....	Fancy Carved Table
18	Swinging Window Co.....	Sliding and Swinging Window
18	G. F. Atkinson.....	Turned Novelties of California Woods
19	Todd & Douglass.....	Improved Banjos
20	J. A. Bilz.....	Best Village Cart
21	Burr Folding Bed Company.....	Andrew's Folding Bed
21	E. H. Marwedel....	Brass Bedsteads, Window Shades and Fixtures
23	Buchanan Brothers.....	Feather Dusters and Brooms
24	Cahn, Nicholsburg & Co.....	Best Men's Hand-made Boots and Shoes, Pacific Coast Manufacture.
24	Anton Kreig....	Best Sole Leather
24	Filer, Thorn & Co....	Best Fair Leather
24	John Riley.....	Best Kips and Side Leather
24	Matten & Gebhardt.....	Best Calf Skins
24	H. N. Cook.....	Best Rawhide Goods
24	Frank McAlear.....	Alum Tanned Leather
24	Kullman, Salz & Co.....	Best Harness Leather
24	Kullman, Salz & Co....	Best Boot, Grain, Buff and Bottom Stock Leather
25	Jacob Nowak.....	Dressed Skins and Furs
25	Christian Hellwig.....	Best Goat and Sheepskin Mats
26	C. P. Heininger.....	Walking Canes
28	Mrs. M. H. Ober... and Waists.	Display of Ladies' Furnishing Goods, Union Flannels
28	W. M. Loudon....	Studebaker Tailor Square, Paper Patterns and Forms
28	Miss Clotilde Wiegand.....	Best Paper Flowers
29	California Electric Light Co.....	Best Cut-out
29	California Electric Light Co.....	Best Resistance Coils
29	California Electric Light Co.....	Best Galvanometer
29	California Electric Light Co.....	Best Volt Meter
29	Edison General Electric Co.....	Best Photographic Lamp
29	Edison General Electric Co.....	Best Fittings for Lamps
29	Edison General Electric Co.....	Best Safety Catches
29	Edison General Electric Co.....	Best Switches
29	Edison General Electric Co.....	Best Troughs, Tubes, etc.
29	Paraffine Paint Co.....	Best Insulating Material
29	J. W. Klumpke....	Best Electric Bells
29	C. Gould.....	Best Electrical Alarm Clocks
29	Gus Zworzek.....	Electric Motor (amateur)
29	L. Goldstone.....	Electric Street Indicator
34	Z. Grasselly & Co.....	Embroidery Work
36	A. Verhagen....	Painting on Porcelain
36	Mrs. Julia H. Crosett..... local amateur.	Best Specimen of Painting on Porcelain by a
36	C. W. Farnham.....	Best Painting on Wood
36	Miss Susan Sroufe.....	Hand-Painted Kid and Gauze Fans

Class.	Exhibitor.	Article.
36	Miss Mary Johnson	Best Painting on Velvet
36	Miss Amelia Ochs	Best Painted Placque
38	Heald's Business College	Best Specimen of Penmanship
38	Fielding Schofield	Superior Penmanship
38	T. R. Southern	Best Specimen of Pen Lettering and Engrossing
39	Edouard Heynold	Pictures in Wood Mosaics
39	Max Schmidt	Pictures in Wood Mosaics
39	S. M. Brookes	Miniature Painting on Ivory
39	A. I. A. Sketch Club	Architectural and Free-hand Drawing
40	John T. Cutting Company	Cleveland Baking Powder
41	Mutual Manufacturing Company	Best Spices
44	Pierre Lorillard & Co.	Turtle Tobacco
46	E. A. Moore	Exhibit of Honey

## DIPLOMAS.

Class.	Exhibitor.	Article.
1	John Mailer	Furnace Door Liner
1	W. H. Henry	Lechtenberg Steam Pump
3	J. L. Hicks	Foot Lathe with Planer Attachment
4	I. H. Small & Son	Double Circular Re-sawing Machine
5	M. Dillenberg	Ice Machine, in operation
5	Pacific Roll Paper Company	Hosking's Paper Holders and Cutters
6	Charles Trafton	Pine Cone Riffle
7	Pacific Laundry Machinery Company	Perfect Washer
7	Pedigo Perfection Washer Company	Perfection Washer
8	W. T. Y. Schenck	Best Hydrant
9	J. Harukuchi	Model of Japanese Yacht "Heiyei"
9	T. M. Kendall	Model of Yacht
10	Mrs. E. L. Bascom	Embroidery Needle
11	Deere Implement Company	Best Plow for General Purposes
11	Deere Implement Company	Best Sulky Plow, "The Gilpin"
11	R. J. Knapp	Best Side-hill Plow
11	Seberne Steele	Hawkeye Grub and Stump Puller
11	Truman, Hooker & Co.	Best Gang Plow, "Bradley"
11	Truman, Hooker & Co.	Best Mower, "McCormick"
11	Truman, Hooker & Co.	Best Hay Stacker, "Eclipse"
11	Truman, Hooker & Co.	Best Hay Rake, "Eclipse"
11	Pacific Manufacturing Company	Best Lawn Mower
11	Paul Maisonneuve	Champion Fruit Pitter
12	Joshua Hendy Machine Works	Wood Pulleys
13	Progress Gas Stove Company	Gas Cooking and Heating Stoves

Class.	Exhibitor.	Article.
13	Schuster Brothers	Stoves, Ranges and Gas Stoves
13	C. W. Watson	Improved Gas Grate
13	J. C. Fuller	Daggett's Patent Roaster and Baker
14	Geo. W. Shreve	Display of Guns
14	A. E. McMillan	Mitre Box
14	Novelty Hardware Co.	Mechanics' Tools
14	Fred Watson	Hunting and Skinning Knives
15	W. T. Gibbs	Doud's Permutation Locks
16	Fred Jantzen	Oil Lamps
16	W. D. Scott	Air Vents for Kegs and Barrels
17	Chas. Meston	Enameled Letters and Plates
17	John Dixon	Artificial Stone Wash Trays
18	C. H. Burr	Weather Strips
18	L. U. Hoffman	Ornamental Sawing, Sign and Pattern Letters
18	H. E. Blacow	Extension Step Ladders
18	John J. Newson	Metalic Paneled Door
18	H. Pape	Wood Clock Frame and Jewelry Case
20	O'Brien & Sons	Best Boy's Pony Cart
20	Truman, Hooker & Co	Best Farm Wagon (Imported)
20	Baker & Hamilton	Best Four-spring Two-seated Wagon
20	Baker & Hamilton	Best Buckboard
20	Ewell Bottled Milk Company	Thorough Brace Milk Wagon
20	Western Top Company	Best Display Buggy Tops
20	Thos. Maier & Co.	Liquor Wagon
20	M. Luxemburg	Folding Baby Carriage
21	Burr Folding Bed Company	Mark's Reclining Chair
21	Louis Sekofski	Patent Secretary Desk
21	J. P. Mighell	Roller Top Cabinet
23	Lebenbaum Bros	Best Ice Cream Freezer, "Automatic"
23	Lebenbaum Bros	Best Carpet Sweeper, "Gold Medal"
23	Schuster Bros	Beer Pump, Lemon Squeezer and Cork Drawer Combined.
24	Charles Bennett	Kip and Calf Leather of Excellent Quality
24	French & Linforth	Cotton Belting, "Gandy"
24	Neville & Co.	Cotton Belting, "Leviathan"
25	Christian Hellwig	Best Samples of Furs, Cleaned and Dressed
26	Chas. Lyons	Display of Cloths
28	J. M. Bartman	Corset Steels
32	Miss Kate M. Breen	Moonstone Jewelry
32	D. E. Stratton	Clock
32	C. P. Heininger	Shell Jewelry
33	Valleau & Petersen	Best Printing from Wood Cuts
33	Brunt & Co	Society Badges
34	Mrs. W. Bashore	Crazy Quilt
34	J. H. Squires	Embroidery Work done in Pavilion

Class.	Exhibitor.	Article.
34	Mrs. J. H. Slater	Crazy Quilt, Shams, Knit Bedspread and Robe. (Spanish Work.)
34	Miss Mary Ingalls	Fine Needlework
34	Mrs. M. L. Landerkin	Hair Work
34	C. B. Hervey.	Crazy Quilt
34	Mrs. Wm. Schendel	Crazy Quilt
34	Mrs. Mary Marx	Knit Bedspread and Pillow Shams
34	Mrs. R. C. Luce	Knit Bedspread
34	Mrs. A. D. Fillebrown	Knit Bedspread
34	Mrs. O. W. Keith	Set of Baughfman's Adjustable Tailor System of Dress Cutting.
34	Mrs. Wm. Sea	Embroidered Table Scarf and Tidies
34	Mrs. G. Bray	Bed Spread
34	Miss Amelia Ochs	Embroidered Table Scarf
34	Miss Nellie Brackett	Lace-edge Pillow Sham
34	Miss M. E. Bleam	Toilet Set of Hand Embroidery
34	Mrs. L. McDonald	Embroidered Picture of "Moses in the Bullrushes."
34	Mrs. D. M. Jackson	Embroidered Work in Frame
34	Miss R. Raynard	Crochet Wool Work and Perforated Card Board Models.
34	Mrs. S. Dinsmore	Silk Bed-quilt
34	Mrs. Laura Kimball	Child's Lace Dress, Hand Made
34	Mrs. J. Lawson	Quilt, Patchwork Embroidery, and Paper Ornaments on Velvet.
34	Miss Emma D. Peterson	Paper Flowers
34	Mrs. J. W. Ross	Pillow Shams and Bed Spread
34	M. S. Webb	Embroidered Chair Covers
34	Mrs. C. Wilson	Embroidered Table Cloth
34	Mrs. Wm. Strachan	Lace Pocket Handkerchiefs
34	Mrs. E. M. Scott	Silk and Satin Bed-quilt
34	Mrs. Mary Johnson	Bed-quilts, Knit and Crochet
34	Miss Annie Hanson	Embroidered Bed-quilt and Pillow Shams
34	Mrs. W. E. Smith	Persian Embroidery, Reception Aprons (Hand Made.)
34	Miss Fannie Steiner	Bed Spread, Plush, Satin and Crochet
34	Miss Aggie Muller	Best Crazy Quilt and Sham
34	Miss Annie Culligan	Mantel Cover
34	Mrs. S. Reed	Crazy Quilt by a Lady 73 years old
34	Mrs. Wm. Brodersen	A Knit Bedspread
34	Mrs. Maria A. Merrill	Knit Quilt and Silk Quilt
34	Miss L. Cuneo	Fancy Bed-quilt and two Pillow-shams
34	Mrs. J. A. McKenzie	Two Crochet Bedspreads
34	Mrs. F. M. Tewksbury	Crazy Quilt; Bouquet with Birds (in Zephyr); Wreath made of Feathers.



PREMIUMS AWARDED.

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Class.	Exhibitor.	Article.
34	Mrs. Angus McCloud.....	One Rug
34	Miss Laura Gibbons...Fine Needlework, Embroidery and Fancy Articles	
34	Mrs. Elizabeth Vestey...Skeleton Leaves, Dried Flowers and Sea Mosses	
34	Miss Gracie Goldstein.....Apron, Crochet Work	
35	Miss M. Williams.....Display of Oil Paintings by Amateurs	
35	Mrs. M. E. Laudén.....Display of Oil Paintings by Amateurs	
35	Miss E. M. McLellan... ..Oil Painting	
35	Miss M. Froelich .....	Oil Studies
35	Takahashi .....	Water Color Sketch
35	Miss Helen Chamberlain.....	Flower Painting
35	Miss Stella Austin.....	Landscapes in Water Colors
38	Oscar Kunath.....	Best Original Crayon Drawing (Plain)
38	Oscar Kunath .....	Best Original Crayon Drawing (Colored)
38	Oliva Kingsland.....	Crayon Portrait, "California Diamond"
38	Heald's Business College... ..	Best Original Pen Drawing
38	T. R. Southern.....	Best Specimen of Card Writing
38	San Rafael Technical School....	Architectural and Mechanical Drawings
38	I. M. Salazar.....	Architectural Drawing
38	S. K. Colby.....	Mechanical Drawing
38	Eleanor McFarland.....	Sketch of Head
38	C. B. Paine.....	Freehand Drawing
38	E. A. Penniman.....	Botanical Specimens
38	Miss Gussie Burger.....	Kensington Painting
39	Abell & Priest.....	Cabinet Cards and Photos
39	W. B. Townsend.....	Amateur Photography
40	Bartlett Springs Mineral Water Company.....	Bartlett Springs Mineral Water.
40	Stratton & Weldon.....	Compound for Cleaning Carpets, etc
40	A. H. Smith & Co.....	Cologne and Sachet Powders
40	J. P. Forbes & Co.....	Castalian Mineral Water
40	Anderson's Springs.....	Mineral Water, Catarrh Snuff and Gargle
40	Coburn, Tevis & Co. ....	Axle Grease "C & S"
40	Coburn, Tevis & Co.....	Lubricating Oil
40	Hueter Bros.....	Best Glycerine
40	John T. Cutting.....	Prescott's Enameline Stove Polish
41	J. Wolff.....	Royal Dutch Cocoa, Amsterdam, Holland
41	J. Wolff.....	Baker & Co. Flavoring Extracts, Portland, Maine
41	John T. Cutting Company.....	Highland Brand Condensed Milk, Unsweetened.
41	John T. Cutting Company.....	King's Quick Rising Buckwheat Flour
41	Wm. S. Townsend.....	Candies and the Manufacture of Candies
41	T. A. Snider Preserve Co.....	Tomato Home-made Catsup
41	T. A. Snider Preserve Co.....	Tomato Soup

Class.	Exhibitor.	Article.
41	H. H. Harkey.....	Display Teas and Coffees
41	Manhattan Food Company.....	Manhattan Food
41	Beck & Sons.....	Display of Log Cabin Maple Syrup
43	Henry Postel & Co.....	Orange Cider
45	Canadian Anthracite Coal Co.....	Anthracite Coal
45	Kimball Bros., San Diego.....	Finished Specimens of Marble
45	J. W. Tobin.....	California Woods, Stained and Polished
45	Marc M. Lichtenstein.....	Collection of Rare Coins
45	Reddington & Co.....	Display of Sponges
45	Neil Van Doorman.....	Novelties made from "World's Fair Big Tree"
45	Miss Etta Bray.....	Collection of Buttons
45	Miss Maggie Riley.....	Collection of Buttons
45	Miss Flossie Deming.....	Collection of Buttons
45	W. W. Sale.....	Collection of Birds' Eggs
46	J. H. Frhr Von Schroder. . . . .	Best Display of Dried Prunes, "Petit Prune d'Agen."
46	Ewell Bottled Milk Company.....	Display of Milk
46	Maricopa & Phoenix Railroad Company.....	Dried Adriatic Figs
46	M. Denicke.....	Dried Figs from Fresno
46	H. Yoshiike & Co.....	Display of Cut Chrysanthemums
46	G. Amano.....	Display of Chrysanthemums in Pots

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### CASH AWARDS.

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Class.		
35	William Keith, Best and Largest Display of Oil Paintings.....	\$ 80 00
35	R. D. Yelland, Oil Paintings .....	60 00
35	A. Bolognese, Oil Paintings.....	50 00
35	S. M. Brookes, Oil Paintings.....	40 00
35	E. Narjot, Oil Paintings.....	35 00
35	C. R. Peters, Oil Paintings.....	30 00
35	Alice B. Chittenden, Oil Paintings.....	25 00
35	A. Joullin, Oil Paintings.....	20 00
35	A. Bolognese, Best Genre Painting.....	30 00
35	R. D. Yelland, Best Landscape Painting..	30 00
35	Charles J. Carlson, Best Portrait Painting .....	25 00
35	C. R. Peters, Best Marine Painting .....	25 00
35	S. M. Brookes, Best Still Life Painting.....	25 00
35	Miss M. Williams, Amateur Oil Painting.....	10 00
35	Mrs. M. E. Lauden, Amateur Oil Painting..	10 00
35	Lee Lash, Oil Painting.....	20 00

PREMIUMS AWARDED.

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Class.		
35	S. W. Shaw, Oil Painting.....	20 00
35	J. B. Wandesforde, Oil Painting.....	20 00
35	Wm. Keith, Water Color Painting.....	35 00
35	J. B. Wandesforde, Water Color Painting.....	35 00
35	Chris Jorgensen, Water Color Painting.....	30 00
35	Madame G. Hofer, Water Color Painting.....	25 00
35	O. Kunath, Water Color Painting.. . . . .	20 00
35	A. Bolognese, Water Color Painting.....	15 00
35	H. R. Hopps, Water Color Painting.....	15 00
35	T. E. Vassault, Amateur Water Color Painting.....	10 00
35	Hugo Fisher, Amateur Water Color Painting.. . . . .	5 00
35	Clarkson Dye, Amateur Water Color Painting.....	5 00
38	Samuel C. Benson, Plans for an Exhibition Building.....	50 00
44	Alex. Keller, Mineralogical Collection.....	25 00

REPORTS  
— FROM —  
STANDING COMMITTEES  
— OF THE —  
Twenty-Fifth Industrial Exposition.  
— . . . —  
BUILDING.

*To the Board of Trustees of the Mechanics' Institute:*

GENTLEMEN:—Your Committee on Building would respectfully report that but little work of importance was required this year to put the Pavilion in order for the Exposition. Just before the opening we had all broken glass re-set, and a careful examination of the roof and gutters made, which was fortunate, as a hard rain-storm that came shortly after would have caused much damage had it happened before. We had the customary tables for exhibits and railing in front of pictures in Art Gallery in position in due time. The Band Stand was re-modeled and enlarged, and, we believe, gave satisfaction to the Band leader and musicians, and it also presented a neat appearance to visitors.

Clearing the building of all exhibits and fixtures, and getting ready for rental on Friday night, five days after the close of the Fair, required expeditious work; but it was accomplished, exhibitors having made extra effort to remove their goods with all possible haste. The items of expense will appear in the Financial Report.

Respectfully submitted,

DAVID FARQUHARSON,  
ROBERT EWING,  
SAMUEL J. HENDY,  
Committee.

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HORTICULTURE.

*To the President and Board of Managers of the Twenty-fifth Industrial Exhibition:*

GENTLEMEN:—Your Committee on Horticulture beg to submit their final report, as follows:

An agreement was entered into with Mr. Pouyal whereby he was to furnish sufficient pot plants to decorate the Horticultural Garden, to the satisfaction of your Committee, and to devote his time on day-watch the same number of hours as the regular watchman for day-watch duty, for the sum of \$150. Upon the completion of the Tower of Electric Light by the Edison Company, your Committee made a further agreement with Mr. Pouyal to suitably decorate the Pedestal of the same, to the satisfaction of Mr. Heger, Manager of Edison Company, for \$20 additional, making the total amount of money expended by this Committee \$170.

While Mr. Pouyal supplied plants quite sufficient, he did not keep them in proper order; neither did he perform his duty as a watchman to the satisfaction of your Committee.

Respectfully submitted,

A. W. STARBIRD,  
W. R. ECKART,  
IRWIN C. STUMP,  
Committee.

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## LOCATION AND POLICE.

*To the Board of Trustees, Mechanics' Institute:*

GENTLEMEN:—Your Committee on Location and Police beg leave to report as follows:

From the large number of applications and the thousands of feet of space applied for, as reported to the Board from time to time, it gave us great encouragement in being abundantly able to select the most appropriate and suitable exhibits; but, whether from changing the time of opening the Fair or parties applying for much more space than they actually required, we found some difficulty in getting suitable exhibits for the prominent locations.

The arrangement of the center aisle appeared to give satisfaction, and could be further improved by giving more seating room around the Band Stand.

Your Committee made application to the Chief of Police for a detail of men to preserve order around the entrance to the Pavilion. The request was at once complied with, and we were furnished with efficient and energetic officers, for which our thanks are due to the Chief and his assistants.

The short time allowed between the closing of the Native Sons' celebration and the opening of the Fair was not quite sufficient to give exhibitors time to fit up and arrange their exhibits. Another cause of delay to exhibitors occurred from a number of unskilled carpenters undertaking what they could not perform—taking one job after another, doing a little to each, and delaying the completion of any within a reasonable time, at the same time charging the highest price for their labor. This could be obviated by placing the fitting of exhibits in the hands of a Committee and doing the work at cost, the same as the gas-fitting is now done. This would be a great saving to

exhibitors, and would also benefit the Institute by bringing into use a large quantity of material usually on hand.

In regard to the selection of employees, from our experience at the late Fair we consider that some method of examination as to the fitness of the parties to fulfil the duties required ought to be adopted.

Looking over former reports of this Committee, we find that the names of all employees are placed under this Committee. If such was the intention, it was not the practice at our late exhibition. It might be well to look into this and have it perfectly understood. Some means of knowing that the night watch were going the rounds regularly might be introduced to advantage.

In arranging for our next Fair it might be well to consider the advisability of mapping out the floor room in large spaces, with the view of getting the exhibits classified under a few heads—say, for example:

All exhibits connected with the building trade in one space,  
 Rope making of all kinds,  
 Leather manufactures of all kinds,  
 Furniture manufactures of all kinds,  
 Musical instrument manufactures,—

In fact, every branch of enterprise carried on in this State.

Also, as soon as soon as the time is fixed, to arrange a plan and give the agent copies and start him out through the State and City to get exhibits as soon as possible.

We remain, yours truly,

ROBERT EWING,  
 C. F. BASSETT,  
 DAVID FARQUHARSON,  
 Committee.

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## MUSIC, DECORATION AND ART.

*To the President and Board of Trustees, Mechanics' Institute:*

GENTLEMEN:—Your Committee on Music, Decoration and Art beg leave to report that the music rendered by the First Regiment Band was all that music-loving patrons anticipated, and it justified the expectations of the management. The soloists—including Miss Mathilde Lennon, vocalist, and Miss Pearl Noble, cornetist—were listened to with pleasure, and often heartily encored. Mr. Charles Cassasa, the leader, catered in every way to meet the musical desire of the masses, and a fine gold and jeweled badge was presented him as a testimony of the appreciation of his efforts. The cost of the music this year was \$7,500.

The decorations placed in the Pavilion by the "Native Sons" for their celebration were received in lieu of rent, and having been under the super-

vision of this Committee, they were arranged to suit the requirements of the Fair, and needed no further additions. The cost of the decorations to the "Native Sons" was much greater than this Committee has heretofore expended for such purposes.

The Art Gallery was very much better than the preceding year, having a large percentage of meritorious pictures and nearly 200 more on the catalogue than the previous one. The expenses will be found in the Financial Report.

With thanks to the members of the Board for assistance rendered,

We remain, very respectfully,

GEO. H. HOPPS,  
IRWIN C. STUMP,  
A. W. STARBIRD,  
Committee.

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## POWER AND MACHINERY.

*To the President and Board of Trustees, Mechanics' Institute:*

GENTLEMEN:—Your Committee on Power and Machinery beg leave to report that the Machinery Department, previous to the opening of the Fair, was found to be in good condition, with the single exception of the main exhaust steam pipe running through the building. This pipe we recommend to be removed and a suitable lap-welded wrought-iron pipe substituted before the opening of the next Fair. The present pipe is beyond repairs, and has been a source of considerable trouble to your Committee as well as exhibitors, for a number of years, owing to its improper construction.

The concrete foundations for engines offered to exhibitors were constructed by approval of your honorable body, all of which were used for engines generating the electric lights which formed such a prominent feature of our Exhibition this year.

All the machinery of the Motive Power Department has been examined since the close of the Fair, and, with the single exception noted, found to be in good order.

Your Committee wish to call particular attention to our insufficient boiler capacity at the last Fair, owing, mainly, to the advent of Electric Exhibitors. We believe that in the future Exhibitions of the Mechanics' Institute electricity will be a prominent feature, and an increase of boiler power must necessarily be furnished in order to make that feature satisfactory and economical.

We would recommend that a third boiler be added on the annex side of the present boiler setting, increasing the plant 50 per cent., before the opening of the next Fair; and that the old engine be sold to the best advantage, as soon as practicable, as we can depend on exhibition engines that are eq-

nomical and will best meet the ever-changing requirements of the machinery department, until we have a new and more permanent Exhibition Building.

Electric lights were run by the California Electric Light Company, as follows: Front of building, 4; garden, 4; annex, 7; machinery hall, 10; making a total of 25 lights, costing \$575 35.

The Gas Inspector makes the following report:

*“To the Committee on Power and Machinery, Twenty-fifth Exhibition, Mechanics’ Institute:*

“GENTLEMEN:—I have to report the amount of work done and gas consumed during the Twenty-fifth Exhibition, as follows:

“The amount of work done this year was small as compared with that done in former years; nothing, with the exception of the work for exhibitors, having been done to increase the light and decrease the consumption. The number of burners used during this last Exhibition was 620 less than the number used the previous year. The amount charged for extra gas-fitting was \$185.

“The total amount of gas used for the Fair was 1,071,600 feet, of which 991,700 feet were burned during exhibition hours. The average per night is 26,167<sup>11.17</sup> cubic feet; average for watch-lights, 2,000 cubic feet; average per day, between 7 A. M. and 5 P. M., 1,200 cubic feet, used for cooking. The average for cooking last year was 3,200 cubic feet, showing that this year there was consumed 2,000 cubic feet less than the previous year.

“The cost of work in this department was \$298 60; the amount charged to exhibitors, \$185; leaving \$113 60 for all other work done.

“Respectfully,

“S. N. GRUBB, Inspector.”

An itemized account of operating expenses of this department will be found under the proper heading in the Financial Report of the Exhibition.

Respectfully submitted,

GEO. E. DOW,

SAMUEL J. HENDY,

J. K. FIRTH,

Committee.

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## PRIVILEGES.

GENTLEMEN:—Your Committee on Privileges, on presenting this their final report, would state that all matters connected with their department have been disposed of, to the satisfaction of all concerned.

The number of privileges sold were 20, as follows:



Bancroft & Co., Newspaper.....	\$ 705 00
Geo. C. Thompson, Soda Water.....	727 50
Geo. C. Thompson, Lemonade.....	127 50
M. Moore, Cider.....	197 50
W. S. Townsend, Candy.....	927 00
D. S. Ciphers, Pop Corn.....	407 00
E. L. Bascom, Microscopes.....	100 00
W. H. Martin, Ice Cream.....	911 00
W. H. Martin, Restaurant.....	200 00
J. H. Krueger, Canes and Whips.....	35 00
Miss Kate M. Breen, Moonstone Jewelry.....	100 00
C. F. Wood, Perfume.....	75 00
Welsh Inhaler Co., Inhaler.....	50 00
C. H. Bergmann, Cutlery.....	25 00
Oscar J. Mayer, Headache Wafers.....	50 00
W. H. Robertson, "Little World".....	500 00
J. H. Squires, Tufting Machine.....	25 00
J. B. Slim, Silhouettes.....	25 00
C. F. Hughes, Spectacles and Eye Glasses.....	50 00
Jno. Mann, Ajeeb, the Automatic Chess and Checker Player.....	455 00
	\$5,692 50

All of the above amounts were collected, and thus far we have had no complaint from holders of privileges.

Several applications for privileges were denied, as your Committee did not deem it advisable to sell them.

The total number of employee tickets issued were 506.

Your Committee recommend, as a stop for this great demand for employee tickets, a charge of \$1.50 for each one, and that all exhibitors must have either a double ticket, or its equivalent, before they receive an order that one be issued.

Very respectfully submitted,

JOHN MALLON,  
ROBERT EWING,  
S. J. HENDY,  
Committee.

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## PRINTING AND ADVERTISING.

*To the President and Board of Trustees of the Mechanics' Institute:*

GENTLEMEN:—Your Committee on Printing and Advertising would respectfully report that the usual amount of printing and advertising and other matters appertaining to their department has been attended to and

nearly everything closed up, except the printing of the Report of the last Exposition.

The usual amount of advertising has been done in all of the large Daily and most of the Weekly Papers in San Francisco, and the thanks of the Board and members of the Institute is due to the Press of this city for their many and favorable notices of the Exposition; and we hope that they will always continue to give us their full support.

We had printed and turned over to the Ticket Committee the following tickets:

- 7,500 Double Season Tickets.
- 1,500 Single Season Tickets
- 600 Childrens' Season Tickets.
- 600 Employees' Season Tickets.
- 6,081 Single Adult Admission Tickets.
- 250 Complimentary Season Tickets.

The total amount paid for advertising up to the present time, which includes nearly all of the printing excepting the printing of the Report, which will come in hereafter, is \$1,796 for advertising and \$905 for printing.

The printing of the Report will cost about \$300 additional.

The receipts from the sale of catalogues in the Art Gallery exceeded the cost of printing by \$51.

Respectfully submitted,

S. J. HENDY,  
GEO. H. HOPPS,  
JOHN MALLON,  
Committee.

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## RULES, REGULATIONS AND AWARDS.

*To the Board of Trustees of the Mechanics' Institute:*

GENTLEMEN:—Your Committee on Rules, Regulations and Awards would respectfully report that the various duties pertaining to the Exhibition have now closed, and we are able to report as follows:

At the beginning of the year it was obvious that some important changes were necessary in the Premium List, both from the opinion expressed by others and our own observation. To that end a revision of the former list was made, with a number of additions and changes, which, at as early a date as possible, was submitted to the Board, and finally adopted as a whole.

It will be observed that in a number of cases an almost entire new classification of exhibits was made, notably in Class No. 29, Electrical Apparatus, and Class No. 35, Oil and Water Color Paintings.

It was decided that the same kind of premiums be awarded this year as at previous Fairs, viz., Gold, Grand Silver, Silver, Grand Bronze and Bronze Medals, and Diplomas. The Grand Silver and Grand Bronze Medals were

made in New York, and struck from the large die of the Institute, which had to be sent there, as the attempt to make them here last year was a failure, no press on this Coast being of sufficient size or strength to do the work creditably. The smaller ones were made by the California Jewelry Company in the best and most artistic manner, both as to appearance and engraving, while the fineness (990) was fully guaranteed. The Diploma (by Messrs. Britton & Rey) was changed very materially in its general appearance from last year and much admired by the recipients. The total number of premiums awarded were:

Gold Medals.....	13
Grand Silver Medals.....	31
Silver Medals.....	96
Grand Bronze Medals.....	8
Bronze Medals.....	71
Diplomas.....	167
Cash Awards.....	30
	416

The Cash Premiums amounted to \$825; an average of \$27 50 to the 30 exhibitors receiving same.

The usual delay and trouble in the selection of jurors was had this year as heretofore. We refrain from making any suggestions for the future as to the advisability of early attention to this work, as many Committees have done so in the past with no result whatever. We will, however, suggest and strongly urge that, hereafter, a set of rules and instructions be drawn up relative to the duties and what is expected from jurors, and that a copy be presented to each, with the invitation to serve, so they may understand what is required. If the work seems too onerous they may then decline.

The simple statement by a committee that an exhibitor has received a premium is not sufficient recognition. For instance, Mr. Blank receives a Silver Medal for the "Best Steam Pump." Now, without any further description (which in many cases in the reports is not given), what can the public know or understand by such wording when there is an infinite variety and different kinds of Pumps. We believe each article should be examined and reported upon, and every exhibitor should have the right to demand it for his wares; and the report of the jury should set forth the merit and advantages of everything submitted for their judgment, giving to the public in the report such matter as will be instructive and of value to the purchaser and seller.

The spirit and aim of these Expositions is, or should be, to group together everything that is new, novel and advantageous to our citizens to understand, and consequently of value to the Institute and the State at large.

Yours respectfully,

J. K. FIRTH,

C. F. BASSETT,

DAVID FARQUHARSON,

Committee.

## TICKETS AND ADMISSIONS.

*To the President and Board of Trustees:*

Your Committee on Tickets and Admissions respectfully report that the season tickets were ready and placed on sale in stores and the Library about August 20th. The kind and number prepared by the Ticket Committee, received by us, and delivered to the Treasurer, taking his receipt therefor, were:

- 5,000 Double Season, for the general public;
- 1,200 Single Season, for the general public;
- 2,500 Double Season, for members of the Institute;
- 300 Single Season for members of the Institute;
- 600 Children's Season;
- 600 Employees' Tickets;
- 6,081 Adult Single Admission;
- 2,547 Children's Single Admission.

The usual number of complimentary tickets were placed in the hands of the President for distribution, in the name of the Institute, to such parties as he deemed entitled to the favor.

A number of double and single season tickets were also distributed to the press of the city and country, all of which are recorded in a book on file in the office.

The rules governing admissions on a season ticket are a never-ending cause of controversy between the officers and the public; and it must be confessed that the final argument on our side that "the rules printed on the ticket is what was adopted by the Board" might silence, yet did not convince the holder that we were right. Before another Fair we think the matter should be carefully considered, and, if possible, a more satisfactory rule adopted as to the admission of children on season tickets, or else do away with them altogether, as has been advocated by many earnest friends of the Institute.

The identification key as used this year on tickets was, as heretofore, successful, and effectually prevented their use by other than the owner.

The general charge of the door and ticket takers was delegated to Mr. W. J. Keightly, who performed that duty to the satisfaction of your Committee.

Since the close of the Exposition we have met with the Treasurer and counted the tickets in his hands, and found everything correct. The number sold will be found in his report.

We tender our thanks to the members of the Board who kindly volunteered assistance at the door and in counting tickets; and also to the police officers who were in close attendance, and watchful that nothing occurred to mar the harmony of the Exposition.

Respectfully submitted,

C. F. BASSETT,  
GEO. E. DOW,  
W. T. Y. SCHENCK,  
Committee.

## SPECIAL EXHIBITS.

*To the President and Board of Directors of the Mechanics' Institute:*

GENTLEMEN:—As your Committee on Special Exhibits, we would respectfully report as follows:

There were but two special exhibits in the Fair this year, viz: the "Little World" and "Ajeeb," (the so-called Automatic Chess and Checker Player), each of which, for the privilege of exhibiting, paid into our treasury the sum of \$955.

We think "Ajeeb" proved a drawing attraction, and, with better accommodations for the audience, would be more so.

The extra fee of 25 cents charged for viewing this exhibition we think too large, and, it is our opinion, with better and more ample accommodations for the audience, a reduction to 10 cents would result more beneficially to the owner, as well as being more in accordance with the views of this Board in regard to outside shows which call for extra payment of fees from the patrons of the Fair.

Yours respectfully,

W. T. Y. SCHENCK,

A. W. SCOTT,

A. W. STARBIRD,

Committee.



# APPENDIX.

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## THE STREET CABLE RAILWAY SYSTEM.

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At a meeting of the Board of Trustees of the Mechanics' Institute, held August 19th, 1890, the desirability and importance of having Californian inventions and industries as fully represented as possible at the coming Fair was discussed, and action was taken thereon as set forth in the following communication:

AUGUST 25th, 1890.

*Hon. A. S. Hallidie:*

DEAR SIR:—At the last meeting of the Board of Trustees of the Mechanics' Institute, the following preamble and Resolutions were adopted by an unanimous vote:

“WHEREAS, The Cable Railway system having originated in this city, and, desiring to record the interest taken by the Mechanics' Institute in so great and important an invention, it is—

“*Resolved*, That the inventor, Mr. A. S. Hallidie, be invited to place on exhibition at the coming Fair such models, materials or appliances as he may possess or will prepare belonging or relating to the original road, with a statement of its inception and construction; also statistics of the application and growth of the Cable Railroad System.”

Very sincerely,

Your obedient servant,

J. H. CULVER, Secretary.

Mr. Hallidie courteously replied to the communication, and said he would endeavor to comply with request of the management. Accordingly he made a comprehensive exhibit of his inventions, which is particularly mentioned by the Committee in Class 5, p. 69, of this Report.

As a further and merited recognition, a Committee consisting of Trustees Scott, Eckart and Firth, was appointed to prepare a statement, and embody therein the high appreciation and value in which the Trustees hold his efforts and success in first introducing the Street Cable Railway System. This was suitably engrossed, and presented to Mr. Hallidie in the name of the Mechanics' Institute.

# THE INVENTION OF THE CABLE RAILWAY.

BY A. S. HALLIDIE.

*To the Honorable Board of Trustees of the Mechanics' Institute, San Francisco:*

IN response to your request of the 26th of August, for a history of the invention and inception of the Cable Railway and a sketch of its growth and present condition, I have the honor to present to you the facts, which I will do as briefly as the subject will permit.

From 1867 to 1869, I had matured a system of transportation for ore and similar articles, in the mines, by means of an overhead traveling endless cable. The system was a success, and was exhibited by me at the Mechanics' Fair in 1872, at the Eighth Exhibition.

In 1869, I first turned my attention to street railways, and early in the following year concluded that the application of the same principle of an endless traveling cable could be applied economically to the moving of cars in the streets of a city.

I was largely induced to think over the matter from seeing the difficulty and pain the horses experienced that were employed in hauling the cars up Jackson street, from Kearny to Stockton street, on which street four or five horses were needed for the purpose—the driving being accompanied by the free use of the whip and voice, and occasionally by the horses falling and being dragged down the hill on their sides, by the car loaded with passengers sliding on its track.

Having had considerable practical experience in the use of wire rope, knowing its capabilities, and feeling confident that the difficulties of its application underground for the purpose of street railways to take the place of horses could be overcome, I devoted my available time to surmount these difficulties.

The proposition to haul a car by a rope was a simple one, and on an open hill-side, or underground in the mines, had been already demonstrated. I was unaware that anyone had attempted to use an underground traveling rope in the streets of a city for this purpose, and I felt with the light I then possessed that the proposition was a bold one.

Investigation has since proved that up to the time I had put the idea into execution on Clay street in this city, no one had practically attempted to do it. San Francisco being a "city of hills," in many places too steep for horses to pull up direct, but not too steep for cable traction, presented many features of advantage for the experiment.

I had progressed so far in my plans, that in 1870, I employed Mr. David R. Smith, who was then a member of this Institute and an engineer by pro-



fession, to make a careful survey of California street, from Kearny to Powell, with the intention of constructing the experimental line on that street.

While I had not divulged my plans fully to Mr. Smith, I had several conversations with him about that time, both in relation to my overhead ropeway system, for which he had made most of my drawings, and to the proposed California Street Cable Railway experiment.

Numerous difficulties delayed the consummation of my efforts, and in 1872, Mr. Joseph Britton, having in the course of a conversation asked me if I had given the matter any thought, I explained my plans to that gentleman, who at once realized the importance of the application of the invention, if it could be made practicable.

Meantime my draughtsman, Mr. D. R. Smith, was called to Central America in some railroad work, and I engaged the service of Mr. Hutner, who, having an offer from Mr. Ralston to take charge of a foundry in Gold Hill, with my acquiescence, accepted the same, and recommended to me Mr. William Epplesheimer.

Before Mr. Smith's departure, I had fully solved all the mechanical difficulties in adapting an underground endless traveling cable to do the work of horses on street railways.

While the scheme was looked upon as visionary by most men, three gentlemen (Messrs. Joseph Britton, Henry L. Davis and James Moffit) with whom I had been connected in building up the foundations of the Mechanics' Institute, and who were familiar with and had confidence in my engineering and mechanical work and resources, came forward and gave encouragement, when, from almost every source, doubt and skepticism were expressed.

At this period, seventeen years after the cable system has been practically demonstrated by me, with the financial aid of the gentlemen above named, on Clay street, it is of course hard to realize the great anxieties, caution and minor precautions in connection with the first line; but I believe I had at that time successfully provided against any great mistake or mishap of a serious nature in putting the line in operation.

At first we ran the cable slow (four miles an hour) to ascertain the practical effect of catching the traveling cable by the grip. Then we had numerous safety appliances which were discarded for simpler and better ones; but, on the whole, the thing worked well, and at the first trip the correctness of my plans were apparent. The greatest difficulties were of a financial rather than of a mechanical character.

The mechanical history was a slow working out of a general idea, taking up in detail and piecemeal the difficulties and objections sought for and to be overcome; so that when, after mature and careful thought, based on fairly well-balanced experience, I had determined that it was practicable, in my own mind I had no doubt of the correctness of the proposition. The next thing was to convince some one else in whom I had confidence, and in due time, as already stated, this came. Then followed the difficulties and delays of enlist-

ing capital in a scheme which had never been tried and at which even friendly-disposed engineers shook their heads and gave wise counsel to their friends to let some others put in their money and do the experimenting.

A circular, carefully and modestly stating the scheme, was issued; an office was taken over the Clay Street Bank, and a working model was there placed on exhibition.

Canvassers were sent to call on those who owned property on the hill, and by dint of persistent efforts the owners of property there promised to pay a sum of about \$40,000, when the road was complete or in a determined period.

Mr. Burr of the Clay Street Bank was one of the few who had some confidence in the plan, having agreed to advance \$30,000 on bonds and mortgage of the property for ten years at ten per cent. per annum; but the public would not buy shares. They went begging and only about one hundred and twenty were disposed of.

Meantime the franchise granted by the Supervisors, which had already been extended once, began to run far into its second term. It became a question of going on or abandoning the scheme; but, finally, the gentlemen associated with me undertook to supply, with myself, equally, sufficient funds to start the enterprise; and in about the month of May, it may be said, the enterprise was actually launched, Messrs. Britton, Davis, Moffit and myself buying back the few shares that had been issued, and advancing about \$60,000 to proceed with the work. Of the \$40,000 promised by property owners about \$28,000 was paid, and, together with the \$30,000 raised on the bonds of the road, the Clay Street Road was eventually built.

The essential requisites of a street railway on the plan I proposed were, that the car could be stopped and started on any part of the street; that the cable for hauling the car should be kept entirely below the surface; that there should be no opening in the street large enough to let a buggy tire into, and that no obstruction to the ordinary surface travel in the crowded streets of a city should exist.

The Grip originally designed by me was intended to obviate the necessity of making vertical or horizontal deflections in the road bed or rails, or in any way changing or defacing the surface line of the streets. This I accomplished perfectly, by providing a horizontal and vertical motion in the grip, which permitted the tracks to be kept in a true line and flush with the normal line of the street. These grips are in operation at this day on Clay street.

The first full size metal grip made was provided with a rack and pinion, to raise the lower and gripping jaws in its frame, and is the only difference in form of construction with those now in use on the Clay Street Road and the Presidio Road, which are provided with a screw and hand-wheel in place of the rack and pinion. The progenitor of these grips is now on exhibition at the Fair, and was made for me in 1872 by H. J. Booth & Co. of the Union Iron Works.

Several models of grip of various designs were made for me in 1872 and 1873 by Mr. J. H. Culver, your present Superintendent, whom I found an

excellent mechanic, of practical ideas, and had many conversations with him in relation to cable roads, and to whom was originally offered the Superintendency of the Clay Street Hill Railroad.

Clay street was chosen as a suitable route by my associates, from the fact of its reaching the summit of the hill, 328 feet above base, and being well built up. I had had California street surveyed about two years previous for this purpose by Mr. David R. Smith, and that street was preferred by me on account of its width and future value.

In the construction of the original road cast iron yokes were used, about 4 feet apart, and the spaces between at the bottom and part way up the sides were encased by sheet iron, the upper portion and surface being protected by timbers and forming a tube about 22 inches deep by 14 inches wide.

Timber protected the slot, which had an opening of  $\frac{7}{8}$ ths of an inch, and was placed on one side of a center line about two inches. The Grip was made so that the center of the gripping jaws which took the cable was in the centre of the tube, and the slides holding the jaws worked horizontally by means of a wedge attached to a vertical rod worked up and down by means of a screw and nut in a hand-wheel. The heel of the grip had a smooth surface on top, and along the crown of the tube inside a longitudinal timber ran its entire length, and was intended to be used as a safety brake by pressing the heel of the grip up against it, in case all the other provisions for safety failed.

At changes of the grade of the street where the cable was inclined to raise above the surface of the street or strike the crown of the tube, depression pulleys were placed to take the cable. The shank of the grip which passes through the slot being set off on one side, enabled the heel and gripping jaws to pass under the depression pulleys, pressing the cable down as it passed and leaving the cable in place under the depression pulleys. The slot being two inches off on one side of the cable, all the grit, dirt and water which dropped through the slot into the tube were prevented from coming in contact with the cable.

The gripping jaws were provided with guide pulleys which were grooved to fit the cable and were placed at an angle so as to lead the cable fairly in between the gripping jaws; and by means of rubber springs these guide pulleys were pressed forward sufficiently to throw the cable off from contact with the gripping jaws when they were temporarily opened for the purpose of stopping the car. These provisions, of course, added much to the life of the cable.

The switching arrangements, the grip car or dummy, the grip pulley for driving the cable, the grip, and many other of my devices were subject to separate patents in their application to the cable railway system; but patenting the various mechanical devices were entirely subservient to putting into working shape and demonstrating the practicability of the system. My mind and thought were taken up in the actual, practical work before me.

For constructing the line the contract was let to Messrs. Martin & Ballard,

who employed surprising energy in pushing the work. Clay street is but 49 feet wide, and, when opened for the construction of the double line of tube, was found to have two sets of gas and water mains which had to be removed, water cisterns of the old fire system which had to be built over or filled up, and sewers up near the surface of the street; but the contractors overcame all these difficulties and completed the work in about 60 days—by the end of July, 1873.

On the first day of August the franchise under which we worked, and which had already been extended once, would expire. It was imperative to have the engines and cables working and to make a trip over the road by that time.

On the top of the hill, running northward, a horse car line was built, connecting with the cable line. It was part of the plan to take a passenger car from any of the streets of the city, carry it up the hill by the dummy or grip car and transfer it to the horse line.

We had constructed a grip car simply for the purpose of hauling the passenger car; and the first of August found us with it incomplete, and furnished with brakes of the most primitive character.

On that day, about 4 o'clock in the morning, the grip car was run from the engine house at the corner of Leavenworth and Clay streets to the top of the hill at Jones street, where the tube and slot commenced, from Jones to Leavenworth, the tubes being transferred from one track to the other and the passenger car continuing on by horse-power.

The grip car had long ropes attached to it which were passed round a telegraph pole and the car lowered down the track for a short distance to test the brakes, which were simply straight levers pressing on the wheels, and each lever worked by one man. We found, by using care and holding on, we could control the car, and it was hauled back to its starting place.

Messrs. Britton, Davis, Moffit, P. H. Campbell and some of the employees were present. The different parts of the work of the trial trip had been properly assigned, and I was free to watch the working in detail.

The morning was foggy and gray, and, when ready to pick up the rope, the man who had been placed in charge of the grip showed such signs of fear that I was compelled to take his place, pick up the rope and take the car down the hill. On the way down, we threw off the rope and picked it up repeatedly; slacked the grip, stopped the car and ran it back, and made such experiments as opportunity offered. At the terminus at Kearny street the car was turned around and transferred to the up track and taken up the hill without any difficulty or delay. At the top of the hill, the horse car being in waiting, the company got aboard and went to the terminus and back—thus completing the round trip.

I saw an expression of relief and renewed confidence in the faces of those three gentlemen who had invested their money and faith in the enterprise and stood by it so faithfully; and I do not know whether I felt more rejoiced at their expression of satisfaction or at the visible proof of success of the trial trip.

The operation was an earnest one; there was no frivolity. The whole affair was serious; and, when it was done, there was simply a mutual handshaking, and nothing but cold water drank.

The people were asleep, and, with the exception of one enthusiastic Frenchman, who thrust his red night-capped head out of the window as we went by on the down trip and threw us a faded bouquet, there was no demonstration.

It was decided to make a public trip in the afternoon with grip and passenger car, and as the morning experiment had demonstrated the necessity of carrying the car as far as the engine-house by the cable we determined to extend the cable line one block further west from Jones to Leavenworth street; and for this purpose to shut down for thirty days immediately after the afternoon trip was completed.

In the afternoon the public trip was made—grip and passenger car—the down trip without incident except to test the working of the grip and brakes. A vast number of people was assembled at Clay and Kearny streets, and it was difficult to run on to the turn table from the density of the crowd.

The method was the same as is now practiced on the Clay Street line—of switching the grip car and running it past the passenger car on to the turntable, transferring it to the up track, then running the passenger car past the dummy and bringing it into position in rear of the grip car and coupling it on to it.

In running the grip car, too many willing hands helped and swung it around with such an impetus as to break a bolt connecting the grip to the frame. This occupied about twenty minutes to repair, during which time many expressed regret that the “thing had proved a failure;” but as soon as it was repaired the people piled into the car and on to the dummy, and hung to the guard-strip and windows outside of the car; some actually climbing on top of the car. The car, which was intended to seat fourteen, and the grip car without seats, held on that trip ninety passengers, all anxious to make the first trip.

Everything went well until the steep pitch above Powell street, of one in five, was encountered, when the car stopped. Feeling confident that I knew the cause of the trouble, I left the grip, and, through the kindness of Frank Edwards, an old member of the Institute, who drove me up the steep hill in his wagon, I soon reached the engine-house and found that the grip pulley, through which power was transmitted from the engine to the rope, was slipping under the rope, which had been freshly covered with tar and which acted as a good lubricator. Some lime and saw dust were fortunately near at hand, and throwing these on the rope, and with a few willing hands pulling down on the slack part of the rope, the car and its load were safely hauled to the top of the hill.

As part of the history of the Cable Railway Invention the following, taken from a little pamphlet published in 1879, descriptive of the Clay-Street Hill Railroad, will be of interest :

“ While Mr. Hallidie was engaged in maturing his system of endless Wire Ropeway or Wire Tramway, a well-known citizen of San Francisco expressed an opinion to him that if he could solve the problem of cheap and rapid passenger transit over the steep streets of this city he would be doing a good thing for the property on the hills surrounding the city, and would enable the residents to enjoy greater sanitary advantages and more agreeable prospects.

“ Mr. Hallidie had devoted himself closely to the consideration of the subject, and after careful thought and experiment, matured a system of street railroading by which the cars are hauled up the steepest streets and most changeable grades by a constant traveling rope concealed in a tube under ground—the surface of the street presenting the same appearance, and no more obstruction than any other street in the city having a railroad on it, and in no way interfering with the ordinary traffic or business on the streets.

“ The system, for which he has obtained numerous patents, was adopted by the Clay-Street Hill Railroad Company, August, 1873, by the Sutter Street Railroad Company, February 1877, and the California Street Railroad Company, April, 1878.

“ All these roads have been constantly running since the above dates, and have demonstrated to the most skeptical the superiority and economy of this system over any other, for city traffic.

“ Although the inaccessibility of the hills and the consequent steepness of the streets was the immediate cause of this invention, yet its applicability is not confined to heavy grades, nor is its great economy as compared to horse railroads so clearly demonstrated as it would be on a comparatively level road, where it can work in fair and direct competition with the present system of horse railroads.

“ Nor does the city of San Francisco give any opportunity for a practical illustration of the usefulness of this system during cold winter days and heavy falls of snow, both of which are absent in the mild winters of this city, where the thermometer rarely reaches the freezing point and snow is scarcely ever seen.

“ The difficulties in keeping a line of street railroad open during the winter in many of the northern cities, are almost insuperable. The snow, the slush or ice giving a poor footing to the horses employed in hauling the snow plows, scrapers and sweepers used in clearing the railroad tracks. By the endless rope system, these difficulties are largely overcome, as the rope furnishes a hauling power superior to any number of horses, and at nominal expense, and by means of which the tracks can be kept well cleared of snow and ice.

“ This system of street railroads is adapted to all kinds of city and town railroading, where the surface of the street has to be kept free from obstructions, where locomotives are not permitted, or where the grades are too heavy to permit the use of horses, locomotives, or steam traction engines.

“ A description of the Clay-Street Hill Railroad will best explain its mode of working.

“Clay Street is a central street in the City of San Francisco, and is closely built up by residences; it is but forty-nine feet wide from house to house, and between the sidewalk is occupied by two lines of gas pipes, one line of water pipe, a street sewer, and, at the cross streets, by water cisterns.

“It is one of the oldest streets in the city, and the eastern terminus of the street railroad is at the old Plaza where it intersects Kearny street. In the distance of 2,791 feet west Clay street is crossed by six streets and reaches an elevation of 307 feet. Beyond, in the distance of 1,925 feet, it is crossed by four streets and descends 160 feet, and for a further distance of 471 feet has an ascent of 15 feet to the west terminus of the railroad. The cross streets at their intersection with Clay street are level, or rather a little curving, and vary in width from 45' 5" to 68' 9".

“By referring to Fig. 1, showing Clay street in section, the contour of the hill will be seen.

“The steepest grade is 1 in 6; and the entire length of the line is 5,197 feet, occupying twelve minutes in transit.

“The conditions to be met in building the road were that there should be no more impediment to the ordinary traffic or business of the street than the usual street railroad presents; that the cars could be stopped quickly and absolutely on any part of the road, and should be under the perfect control of the conductor; that the cars should be easily and smoothly started; that it should be worked more economically than with horses; that no motor would be permitted that would frighten horses or endanger the lives of citizens, and that the cars should run regularly between the hours of 5 A. M. and 11:30 P. M., picking up and landing passengers at any desired point.

“The system determined on by Mr. Hallidie and adopted by him in the construction of the Clay Street Railroad met all these conditions, and the road was inaugurated on the 1st of August, 1873, and has been in operation since Sept. 1st, 1873, and without interruption up to this time, (June, 1879).

“The engine and machinery are located at the top of the hill, (See Fig. 1) and consists of a pair of 14 x 28 in. cylinders with a piston speed of 420 feet per minute. From the engine the power is transmitted through a pinion and spur wheel to a grip pulley 8 ft. in diameter, which actuates an endless steel wire rope 1 inch diameter and 11,000 feet long.

“The road has a double track of three and one-half feet gauge, and underneath the tracks and between the rails there are tubes about two feet deep and eighteen inches wide, running the entire length of the road, and at intervals of about forty feet there are carrying pulleys in the tube, (See Fig. 6.) and at the termini of the road, are horizontal pulleys of about eight feet diameter, all for the wire cable to run on.

“The wire rope is led from the engine room by means of suitable pulleys into the tubes above referred to, passing through one tube around the horizontal pulley at the terminus, then through the other tube around the horizontal pulley at the other terminus, through the tube back into the engine-room, and is supported on the carrying pulleys in the tube. These pulleys are

12 inches in diameter except where there is a change of direction downwards. The pulleys at these points are four feet in diameter, and, at the change in the direction of the rope upwards, there are depression pulleys of small diameter, the space at the crown of the tube being quite limited.

“Along the entire length of each tube, at the top, and reaching to the surface of the street, is an opening or slot, (See Fig. 6) sufficiently large to allow the passage of a bar of iron or shank of a “grip,” but not large enough to permit a carriage wheel to enter. This slot is not directly over the wire rope in the tube, but sufficiently on one side of it to permit the use of the upper or depression pulley for the purpose of depressing the rope at the change of direction upward, and to avoid the falling of water, dirt, etc., on the rope, as well as to permit the foot of the “grip” to pass by and under the upper pulley.

“It will be understood now that when the engine is set in motion it causes the endless wire rope to travel in the tube between the upper and lower pulleys thereof, and that in order to utilize the traveling rope there must be a means of connecting it with the cars which run on the tracks on the surface of the streets. But it will be observed that in a street railroad, where the grades are uniform or comparatively level, the upper or depression pulley is not required.

“The connection between the cars on the street and the traveling rope in the tube is made by means of a grip which is described as follows :

“Figure 5 is a skeleton view of the patent gripping attachment and Figure 4 is a perspective view. A vertical slide works in a shank, and is moved up and down by a screw and hand-wheel. The screw is shown in Fig. 5. The small upper screw going down through the large hollow screw, operates it. At the lower end of this slide is a wedge-shaped block. The wedge actuates two jaws horizontally, which open and close according to the direction in which the slide is moved, closing when the slide is moved upward. These jaws have pieces of soft cast iron placed in them, which are easily removed when worn out. These pieces of iron are of proper shape and size inside to grip the rope when they are closed over it.

“On both sides of these jaws and attached to them, are four small pulleys. These pulleys are held by means of rubber cushions, sufficiently in advance of the jaws to keep the rope off from the jaws, and at the same time to lead the rope fairly between them, allowing it to travel freely between the jaws, when they are separated, without touching them. When it is required to grip the rope, this slide is drawn up by means of the small screw and hand wheel before described, and the wedge, at the lower end closes the jaws over the rope, at the same time forcing back the small guide sheaves on to the rubber cushions. The shank, containing the slide, etc., is enclosed and retained in cast-iron slides, attached to the body of the dummy, (Figs. 2 & 3), and a wrought iron standard, having a large nut at its upper end, in which the large hollow screw works, as shown in Fig. 5. The grip is raised and lowered bodily through the opening in the tube from above the surface of the



street to the rope in the tube by means of the hand wheel and nut working on the large hollow screw referred to. The grip is secured to a skeleton or traction car called a dummy, as shown in Fig 2. The dummy is coupled to the passenger cars at the bottom of the incline and uncoupled at the top, and *vice versa*. At first the connection between the dummy and car was made by means of spiral springs, to prevent any jar in starting up; but this was soon found unnecessary. The arrangements made at the bottom of the incline for keeping the rope at the proper tension, and taking up the slack, prevent any noticeable jar in starting. As before stated, the rope is constantly in motion, running between sheaves placed in the tube. The slot of the tube is on one side of a vertical line drawn through the centre of the tube; and referring to Fig. 6, it will be seen that the foot of the gripping attachment projects on one side, giving it an L shape, enabling the jaws to pass under and over the rope sheaves in tube. In order to stop the car, the jaws of the gripping attachment are slightly opened; when they release the rope the guide sheaves take it, and the car stops.

“The shank, containing the slide which works in the slot of the tube, is one-half of an inch thick and  $5\frac{1}{2}$  inches wide, there being one-eighth play on each side; all the essential parts of the gripping attachment are made of steel.

“(There are other forms of grips, but all contain the same principle, except so far as taking the rope up from above.)

“The road has a gauge of three feet six inches. An ordinary thirty pound T rail is used, which is set flush with the street and presents a neat, smooth appearance. The rope runs at the rate of about 5 miles per hour, and the trip is made, including stoppages, in twelve minutes, the distance being 5,197 feet. The stretching arrangement at the lower end has a counterbalance of 3,300 pounds weight on a double purchase, which keeps a constant strain on the rope under all circumstances. At the termini of the road the car and dummy are transferred from one track to the other by means of a turn-table. The available space at these points was very limited, and in view of this fact, some ingenuity had to be employed. When the grip-car reaches the foot of the incline, it is uncoupled from the car and run on to the turn-table, the slot in the turn-table allowing the shank of the grip to pass freely down. The table is then turned around one-quarter of its circumference, and the track and slots are then brought in the same line. The grip-car is then run on the other table, which is turned back, and the grip-car is run on the up track. The passenger car is then brought on to the turn-table, transferred in the same manner and coupled to the grip car, ready for the ascent.

“The original plan was to use switches, so that the dummy would be switched off, carrying the shank of the grip through a switch slot which connected the two tracks. The latter plan is the one adopted by both the Sutter street and California street Companies.

“After nearly six years of working, this system has been pronounced by the best engineers to be the true solution of economical metropolitan rapid

transit, where locomotives are not permitted to run on the surface of the street.”

From the small beginning on Clay street in San Francisco, the Cable Railway System has taken a position of eminence throughout the civilized world. Although the system has been working successfully on Clay street in full view of whoever desired to examine it, three years and one-half elapsed before a second line was built.

Since then the construction of Cable Railroads had gradually increased, until there were  $255\frac{7}{8}$  miles double track in operation in the United States in 1890. According to the census, San Francisco, however, still retains the distinction of having more miles than any other city in the Union.

It has been successfully introduced in Melbourne and Sydney, Australia; Dunedin, New Zealand; London, Birmingham and Edinburgh, Great Britain; Paris and Hongkong.

The growth of the Cable System in San Francisco, the effect of Cable Roads upon property adjacent thereto, and the effect on passenger traffic, are shown in the following tables; and it is fair to assume that the effect has been similar elsewhere:

TABLE No. 1.

Showing increase in value of real estate after construction of cable railways in San Francisco. Compiled in the Assessor's Department of said city in the year 1885:

NAME OF CABLE RAILROAD.	Date of commencement of work on Railroad.	Value of land adjacent to said cable road the year before it was constructed.	Value of the same land for the year 1884.	Per cent. of increase in value.	REMARKS.
Clay Street Hill.....	1873	\$ 775,740	\$1,089,365	40.42	Always cable.
Sutter Street.....	1876	1,189,990	1,410,125	18.09	Changed to cable in 1876.
California Street.....	1876	1,707,415	2,979,736	23.82	Always cable.
Geary Street.....	1878	1,431,430	1,548,615	8.18	Always cable.
Presidio and Ferries.....	1879	519,880	624,055	20.03	Always cable.
Market Street.....	1879	23,309,425	26,801,265	14.98	Changed to Cable in 1883.

Above are the assessed values for the year given of lands bordering within about 200 feet each side of the railway line.

WASHINGTON BARTLETT,  
Mayor.

LOUIS HOLTZ,  
Assessor.

TABLE No. 2.

Showing the depreciation in value of real estate along route traversed by horse car lines in San Francisco. Compiled in the Assessor's Department of said city in the year 1885.

NAME OF RAILROAD COMPANY.	Value of land bordering on route for the year 1879.	Value of the same land for the year 1884.	Percentage of deprecia- tion in value.	REMARKS.
Omnibus.....	\$16,147,270	\$12,125,755	33.16	Always horse cars.
North Beach and Mission...	9,330,200	7,265,205	31.17	Always horse cars.

1879 was taken as data for the first year, as the one least unfavorable to the horse car system.

WASHINGTON BARTLETT,  
Mayor.

LOUIS HOLTZ,  
Assessor.

NOTE.—The Omnibus Railway Company is the oldest car line in the city. It is now (1890) being converted into a cable system.

The North Beach and Mission Railroad Company is the next oldest, and is still a horse car line.

The increase in value of land bordering 200 feet on cable lines was assessed at \$5,419,281, alone. The actual increase in value would probably exceed \$10,000,000, and as much more for increase in value of lands adjacent thereto.

Oakland, Alameda, San Rafael, Berkeley and other towns were taking away a considerable portion of the population of San Francisco until arrested by the building of cable roads.

TABLE No. 3.

Showing the number of miles (single track) of horse and cable railroads in San Francisco for the years 1872, 1884 and 1888, with the population of the city, number of passengers carried and number of times the whole population of the city is carried annually:

YEAR.	Miles of single track— Horse.	Miles of single track— Cable.	Population of City.	Passengers carried.	Population carried.
1872	70	None	188,000	18,801,574	100 times.
1884	60	50	215,000	44,635,000	168 times.
1888	63	59.44	290,000	67,363,239	232 times.

TABLE No. 4.

Showing the number of passengers carried (single track) per annum.

Year.....	1872.	1884.	1888.
Passengers, per mile.....	268,594	505,736	550,173

TABLE No. 5.

Showing the number of passengers carried during the year 1888 on horse railroads, as compared with cable railroads.

HORSE ROAD.		CABLE ROAD.	
Miles.....	63	Miles.....	59.44
Passengers carried.....	18,254,732	Passengers carried.....	49,108,507
Passengers, per mile.....	290,680	Passengers, per mile.....	826,186

NOTE.—2 84.100 passengers on mile of cable to 1 passenger on mile of horse road; this shows the great popularity of the cable system.

It is unnecessary for me to recite to you the advantages of the Cable System. The system itself, by its working in this city, tells its own story.

You are carried over the streets and up the hills at a rate of speed and degree of safety never before attained by street railways. You feel no anxiety or commiseration for the dumb beasts, whose place the steam-engine and cable takes. The 5 cent fare takes you a longer distance than it ever took you before.

The cars are clean, the service better and the employees of a higher grade than heretofore.

The streets on which the cable cars run are in better order and far cleaner. The hills are accessible; the best portion of the uplands are available for residences, and the cable car is the poor man's carriage, patronized by all classes.

In order to do the work now being done by the Cable Car in San Francisco over 5,000 horses would be required, and on nearly all the lines there are grades where horses could not pull at all. I beg to call your attention to the sanitary and economic view of the cable system in its relation to the city.

Each horse deposits daily of solid matter  $10\frac{1}{2}$  lbs. and of liquid matter (in addition to perspiration) 4-10 gallons—33 lbs., *i. e.*,  $43\frac{1}{2} \times 5000 = 217,500$  lbs. of matter daily deposited to decay and impregnate the air with its poisonous foulness. It will be then seen what an immense amount of deleterious matter is prevented from being deposited in the streets, and how much the sanitary condition of the city is improved thereby.

In addition to that, the pounding of 20,000 iron-clad stamps on the stone pavements pulverizes the stone, to help fill the air with dust for the people to inhale in their lungs!

The Cable Railway System was the result of deliberate and careful thought, and its application to street railways was original with me as far as anything could be original with any one man. That efforts had been made by others in that direction is probable; but such efforts were unknown to me at the time I put the principle into practice, and it is true that up to the date of the working of the Cable System on Clay street, on the trial trip on the first day of August, 1873, and for over three years after, no similar street railroad had been in existence in any part of the world.

If the doing of a useful thing that had never been done before, or practically demonstrating useful truths which had never been practically demonstrated before, is invention, I feel that the Cable System as matured by me is entitled to the name of a useful invention, and to the recognition of such an honorable Institute as the Mechanics' Institute of San Francisco.

SAN FRANCISCO, October 7th, 1890.

## ADDENDUM.

[From the address of Hon. W. W. Morrow on the opening of the San Francisco Industrial Exhibition, August 2, 1881.]

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In this city, under our very eyes, we have seen a revolution created in the system of street railroads, and while to the public of San Francisco the transition has been gradual and familiar, the invention is of such a character as to deserve here special mention, because the inventor was for many years President of this noble and enterprising society, and the invention itself is another example of what Californians are doing for the world.

For many years horse flesh has been the principal motive power used in carrying people to and fro in cities and towns. And as the democratic omnibus succeeded the more aristocratic cab, it in time became supplanted by the less noisy, more convenient and less costly street car; but they all had to be drawn by horses, and as these modes of conveyance multiplied, as they naturally did from their convenient and cheap mode of transit, more horses were used and a large number killed by overwork, especially on streets where the ascent was steep, or where the number of passengers carried was very great.

Steam motors, compressed air, latent steam and other plans had been tried without success, and methods that could be operated on country roads were not permitted to be used in cities or towns.

Large corporations were formed for carrying on street railroad traffic. possessing thousands of horses, and immense stables for their care and maintenance were required.

In such cities as Philadelphia, where streets are almost level and laid out at right angles, the city railroad companies have a car line on every street, and make large profits on their passengers at the rate of fare charged.

But in many cities like San Francisco, where the streets run up and over steep hills, the service to the public was poor, the remuneration to the company was not great, while the comfort and care of the poor horses was certainly as bad as it could possibly be.

The higher hills of the city were uninviting, except to the enthusiastic climber who had just arrived and wanted to get a bird's-eye view of the city and harbor.

At the north end of the city the cars of the Omnibus Railroad Company were drawn up Jackson street from Kearny to Stockton, a distance of 875 feet, by five horses, the elevation in that distance being 73 feet.

In the winter evenings, when the cars were crowded, the struggle of those unfortunate horses up that steep hill was something terrible.

It was on such an occasion in the winter of 1869 that A. S. Hallidie was

watching the efforts of the horses to draw up an overcrowded car, when one of the animals slipped on the wet cobbles and fell, throwing down the horse behind him. The brakes were immediately put on and the horses urged to regain their footing, but the brakes being insufficient to hold the car on the steep incline, it slid backward, dragging the horses down the hill to the crossing below.

To this incident are we indebted for the cable road of to-day and all its attendant comforts.

Within two years Mr. Hallidie had matured his plans for a road; but like all such inventions and enterprises it did not at first meet with much encouragement, and but for the assistance and co-operation of two or three gentlemen, who saw in it more than the mere fancy of an inventive mind, it would have slumbered where it was born.

In September, 1873, the first railroad of the kind was constructed on Clay street in this city, and, while a great many difficulties and obstacles had been overcome, and notwithstanding it surprised the majority of the people by the simplicity of its working, it yet failed for some time to convince the skeptical of its ultimate success; but as it continued to run month after month under the care and guidance of its master, it gradually won the confidence and admiration of the entire public.

The simple principles involved and their ingenious adaptation mark the value of the invention and the success of the undertaking.

And what a revolution it has made in the mode of transporting passengers in this city!

The hills have fallen down before it, and they are now even more accessible and certainly more desirable for residence than the level portions of the city.

Where the goats used to frolic on California street hill mighty railroad kings have built their palaces. The bald old hill has taken on all the bewitching charms of a young girl with a bright, new poke bonnet, while Clay street and Russian hills, decked out in new finery, flirt with those brown old hills across the Gate, in Marin county.

The summit of Clay street hill, reached by the cable road, is 307 feet above the starting point at Kearny street, and the time required to make the transit is six minutes by cars that depart every five minutes, ascending the steep incline as noiselessly and as lightly as the bird in flight. The feelings of personal discomfort, of commiseration for the tired and straining horses, are entirely absent, and the weary passenger returning home enjoys a rest of body and soul.

Property on these hills, which before the advent of these roads could be purchased at almost any price, now commands high figures, and is being rapidly built upon and improved.

It is eight years ago yesterday since the first experimental trip was made on the Clay street road, which at that time was 2,880 feet long.

Since then the road has been extended to double that length. Four other roads have been built, and another is now in course of construction. On the

five roads now in operation steam machinery is employed of the aggregate of 1,300 horse-power, keeping in motion for 18 hours each day 17 miles of steel wire rope, containing 2,850 miles of wire and transporting 40,000 passengers daily.

Under the old system one horse would draw on a nearly level road an average of forty passengers daily; but ten thousand horses could not perform the work of our present cable roads.

Another item is the expense. On the Clay street cable road 36 pounds of coal will draw 40 passengers; or, in other words, 9-10 of a pound of coal, costing 3-10 of one cent, represents the cost of fuel in drawing one passenger.

While the underground railroad is the peculiar feature of London, and the elevated railroad is in like manner the feature of New York, San Francisco takes special pride in her cable roads, in which there has been already invested a capital of one and one-fourth millions of dollars.

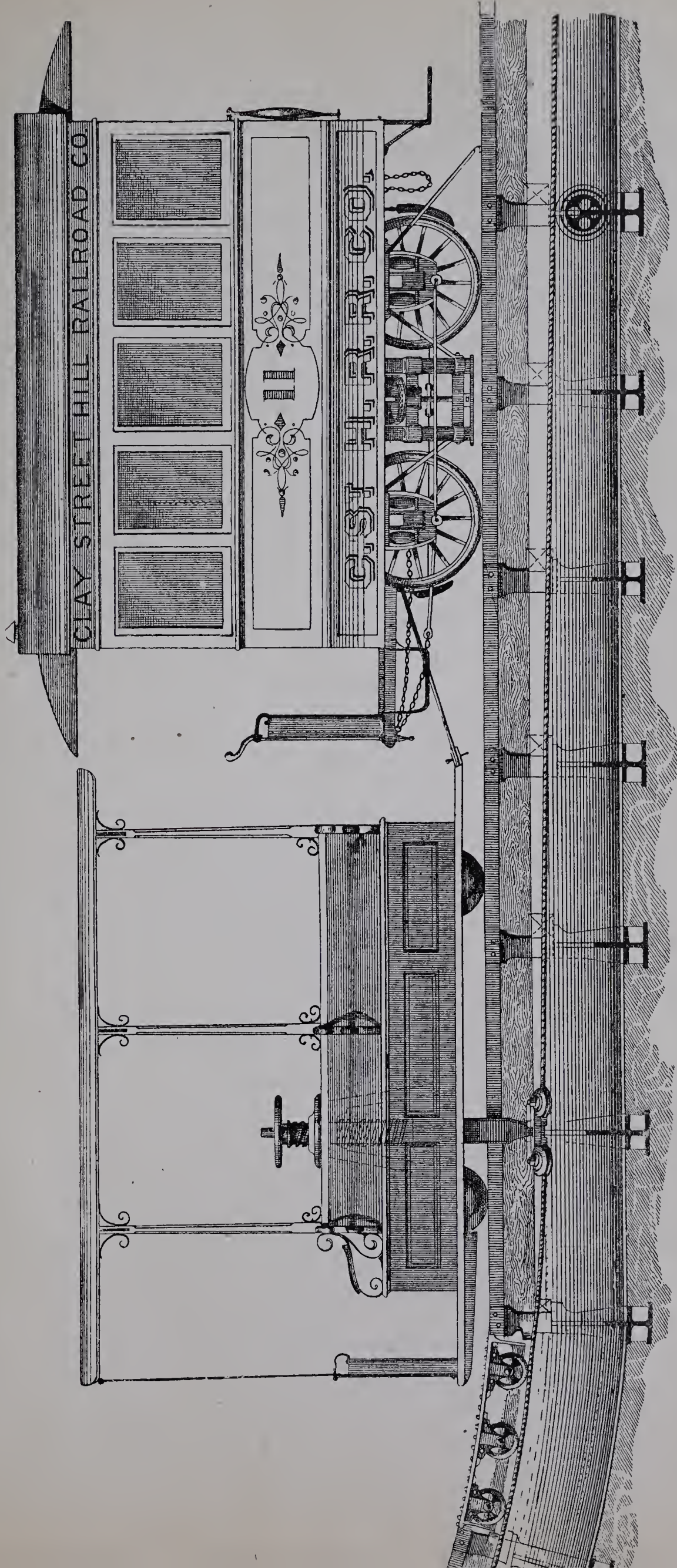
The enterprising city of Chicago, that never does anything by halves, is building a series of cable roads which will cost over two millions of dollars.

Thus it will appear that while the design of the inventor was more particularly to overcome the difficulties of steep grades, it will prove there, as it has here, admirably adapted to level streets, and the result will probably be that the principal cities of the Union will be compelled to adopt the system on account of its economy, noiselessness, rapidity and general comfort.



# PASSENGER CAR AND DUMMY,

WITH GRIPPING ATTACHMENT, WIRE ROPE AND SIDE SECTION OF TUBE.

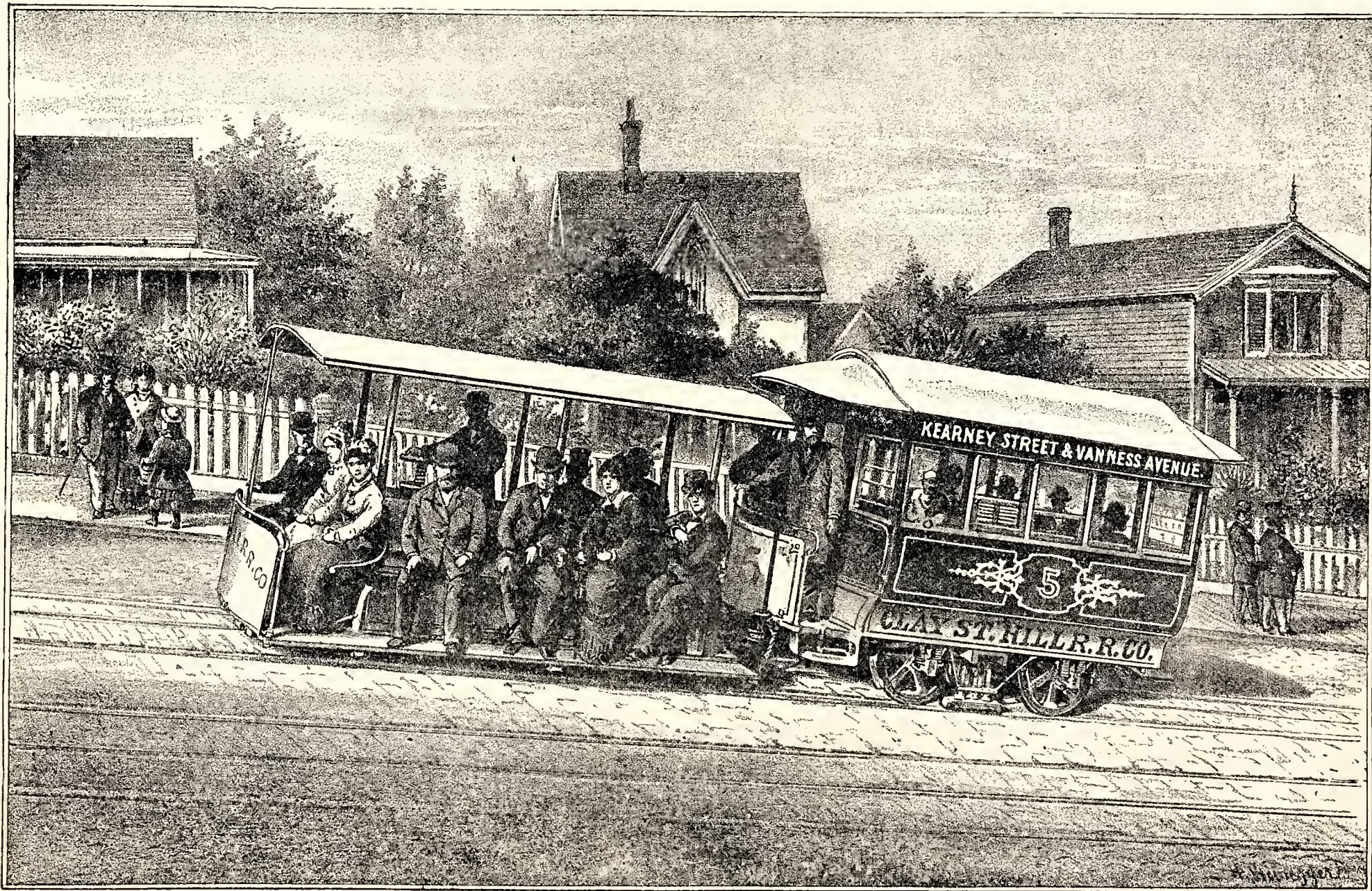


*Grip Car or Dummy.*

*Passenger Car.*

**Fig. 2.**





CLAY STREET HILL WIRE ROPE RAIL ROAD.

ASCENDING AN INCLINE OF ONE FOOT IN SIX.

THE FIRST CABLE ROAD CONSTRUCTED.

Fig. 3.



FIG. 5, SECTION VIEW OF GRIP.

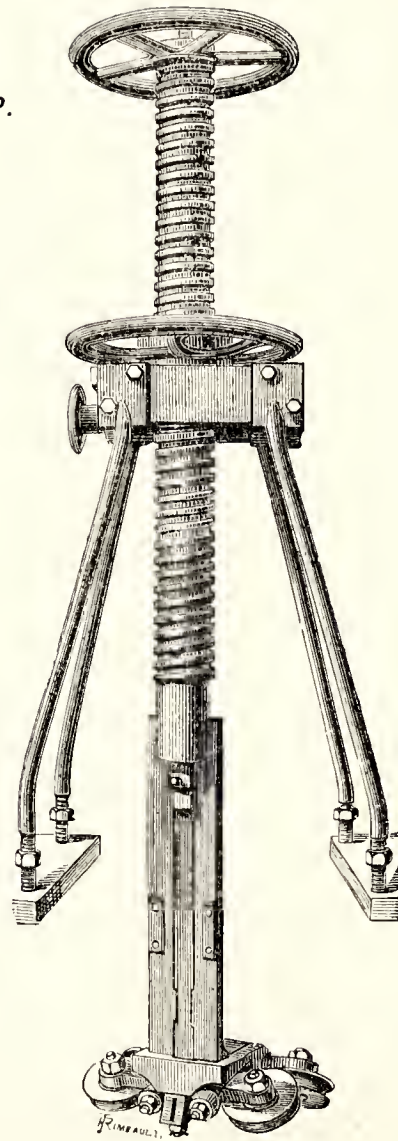


FIG. 4.

PERSPECTIVE VIEW OF GRIP.

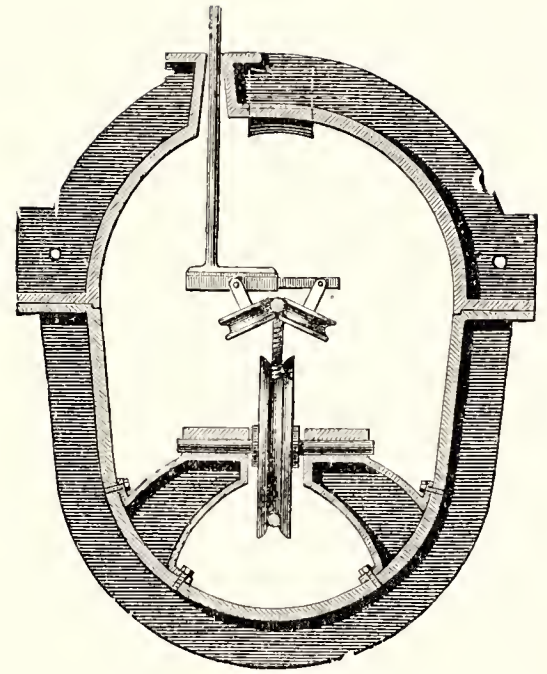
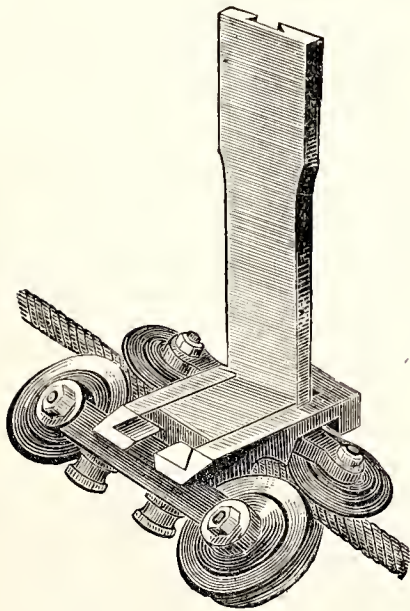
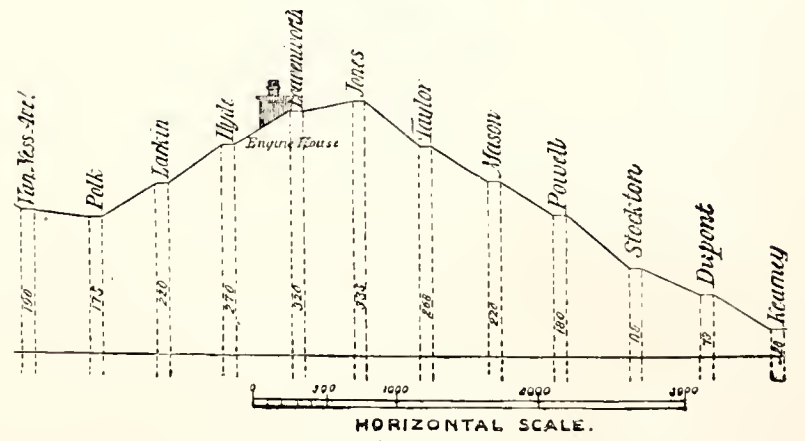


Fig. 6.



CLAY STREET.













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