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FIFTIETH YEAR

PAPER TRADE JOURNAL

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ESTABLISHED IN 1872

Vol. LXXIV. No. 21

NEW YORK AND CHICAGO, MAY 25, 1922

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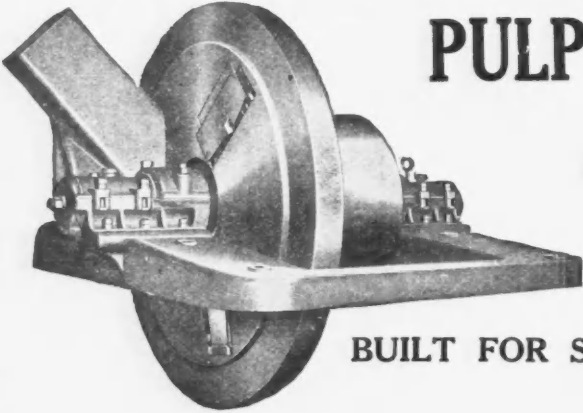
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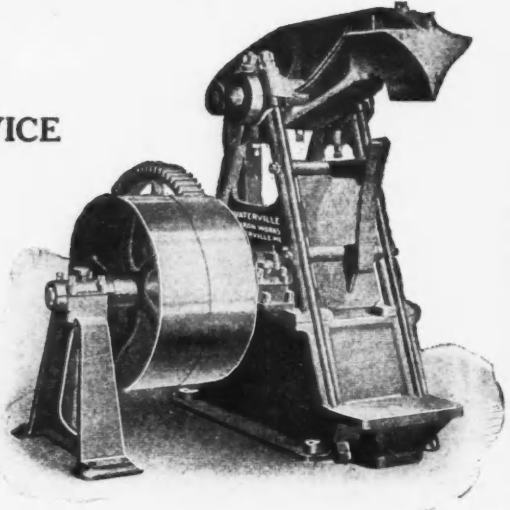
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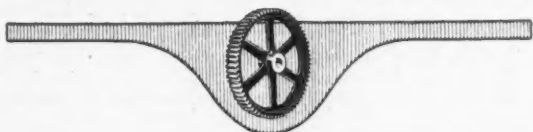
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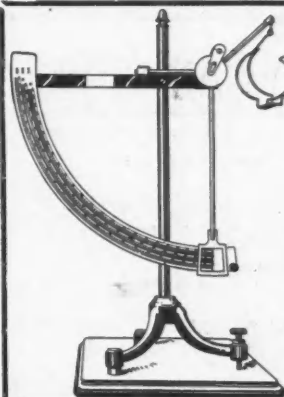


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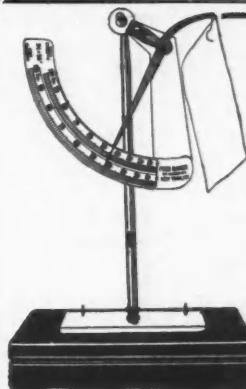


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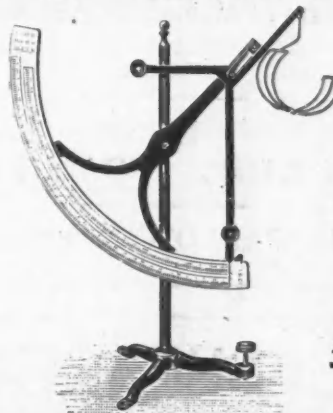


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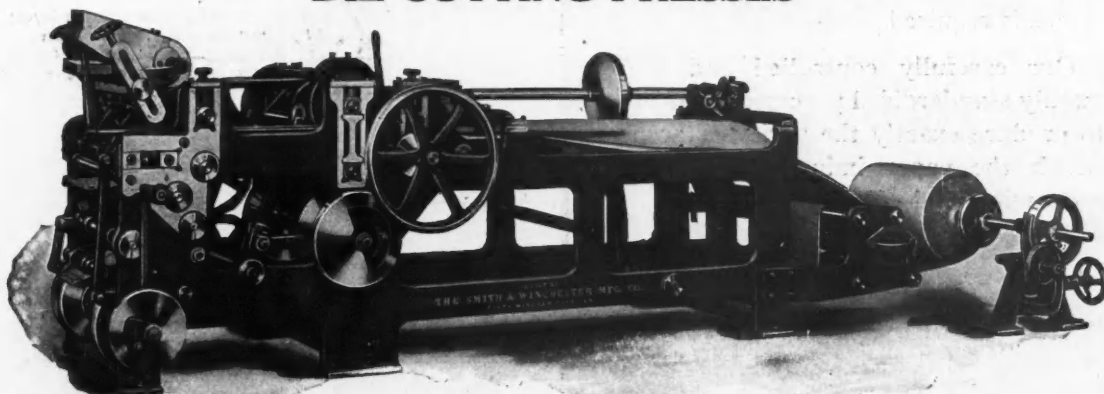
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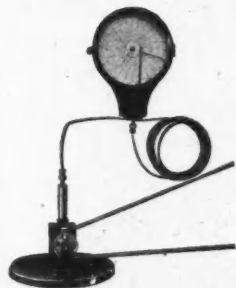
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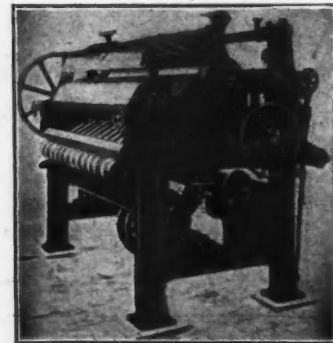
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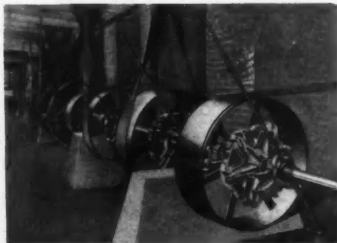
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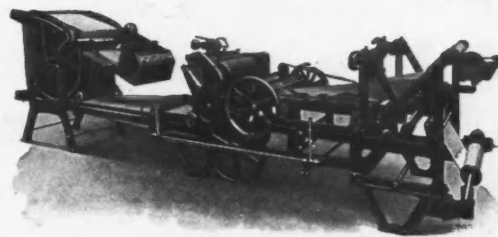
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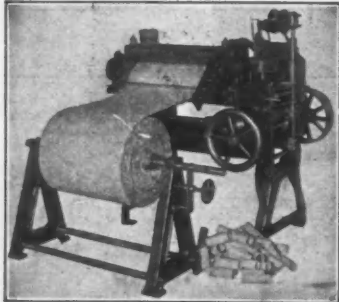
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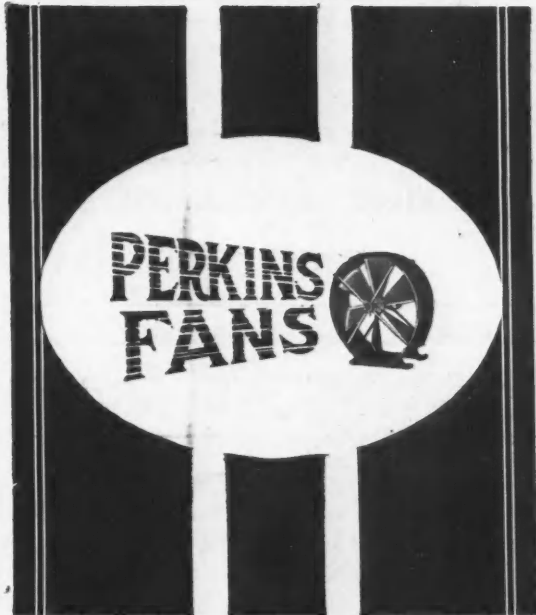
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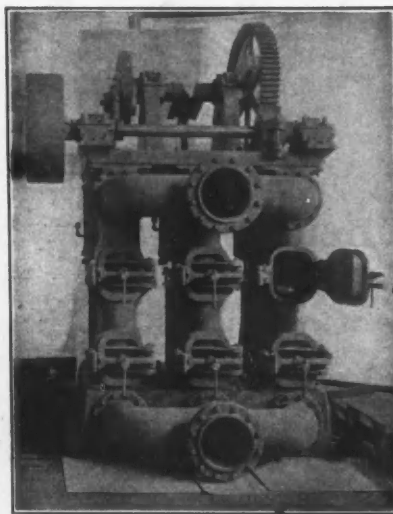
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THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY

FIFTIETH YEAR

PUBLISHED EVERY THURSDAY BY THE

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CONVENTION PROGRAM OF COST MEN AND SUPERINTENDENTS

Associations Jointly Prepare for Elaborate Convention to Be Held in Kalamazoo June 1, 2 and 3—Will Have Separate Series of Programs—Annual Banquet Set for Thursday Evening—Kalamazoo Vegetable Parchment Company to Be Host—Tour of Local Mills Will Be Afforded Visitors—Executives Combine With Committee to Promote Success of Convention.

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., May 24, 1922.—A program of pronounced excellence is assured for the combined convention of the American Pulp and Paper Mill Superintendents Association and the Cost Association of the Paper Industry, which will be held in this city, Thursday, Friday and Saturday, June 1, 2 and 3.

The general committee on arrangements has prepared a series of programs, one for the superintendents, one for the cost men and one for the combined organizations. The annual banquet will be held Thursday evening at the Kalamazoo Vegetable Parchment community house, with a stag dinner and entertainment at the same place Friday evening. There will be luncheons with programs Thursday, Friday and Saturday noons.

Ample opportunity will be afforded visitors to tour the various mills in Kalamazoo and the nearby towns. Mill executives are greatly interested in the success of the coming convention and are combining with the committee workers to make the gatherings a success. Visitors are assured a cordial welcome in course of their visits to the various plants in the valley.

The programs prepared are as follows:

JOINT SESSIONS

THURSDAY, JUNE 1.

1 p. m.—Luncheon at Kalamazoo Vegetable Parchment Community house.

Address of Welcome, Jacob Kindleberger, president of the Kalamazoo Vegetable Parchment Company.

"Association Activities in Paper Industry," Dr. Hugh P. Baker, secretary American Pulp and Paper Association.

"An Executive's Viewpoint on the Subject of Co-operation between Superintendents and Cost Department," G. A. Galliver, president American Writing Paper Company.

"How Cost Systems Help Superintendents," C. Oliver Wellington, Scoville, Wellington Company, Boston, Mass.

"Cost Accounting as Relating to Superintendents," F. M. Hodge, president of the Kalamazoo Paper Company.

6:15 p. m.—Annual banquet of Superintendents and cost accountants, ladies and guests.

Claude F. Nicely, president of the LaSalle Paper Company, South Bend, Ind., toastmaster.

Addresses and musical entertainment.

FRIDAY, JUNE 2.

1 p. m.—Luncheon, Kalamazoo Vegetable Parchment community house.

Short addresses by Felix Pagenstecher, president, Bryant Paper Company, Fred Sutherland, secretary, Sutherland Paper Company.

"Relation of Employer to Employees," A. B. Thomas, general manager Eddy Paper Company.

"Co-operation Between Superintendents and Cost Accountants," Joseph Slater, superintendent, Escanaba Pulp and Paper Company.

"How Superintendents Are Benefitted by Cost Reports, Based on Accurate Manufacturing Data," J. A. Reilly, manager cost and inventory department, American Writing Paper Company.

"Mill Costs from a Technical Man's Standpoint," W. G. MacNaughton, secretary Technical Association of the Pulp and Paper Industry.

Five minutes talks by Mr. Jasperson, Fred C. Boyce, Mr. Clerke and Ed. T. A. Coughlin.

7 p. m.—Stag dinner for superintendents and cost accountants at the Kalamazoo Vegetable Parchment Community house with musical and vaudeville features.

SUPERINTENDENTS' SESSIONS

THURSDAY, JUNE 1

9 a. m.—Registration, ball room, New Burdick Hotel.

10 a. m.—Opening Address, John H. O'Connell, national president.

Address of welcome, Charles S. Campbell, president of the Chamber of Commerce.

"Lining of Sulphate Digesters with Brick," P. C. Austin, Bathurst Lumber Company, Bathurst, N. B.

"Handling of Wood Room Equipment," F. J. Carroll, Simonds Manufacturing Company, Chicago.

"Freeness Control in the Ground Wood Mill," F. M. Williams, Williams Apparatus Company, Watertown, N. Y.

"Some Aspects of Engine Sizing," E. J. Turner.

"Handling of Old Paper Stock," E. G. Milham, Bryant Paper Company, Kalamazoo.

Appointment of various committees.

FRIDAY, JUNE 2

9:15 a. m.

"Latest Development of Coating Mill Machinery," W. H. Waldron, Waldron Machine Company, New Brunswick, N. J.

"Power Transmissions in the Paper Mill," G. T. Vanderhoef, Dodge Engineering and Sales Company, Mishawaka, Ind.

"Handling Raw Materials in Paper Mills," K. M. Herman, Mid West Box Company, Kokomo, Ind.

"Underfeed Stoker in Paper Mills," F. A. DeBoss, Underfeed Stoker Company, Detroit, Mich.

"The Modern Steam Roller," H. E. Wallis, D. McConnell Boiler Company, Cleveland, Ohio.

"Section Drive in Paper Mills," S. A. Staeger, Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa.

SATURDAY, JUNE 3

9:15 a. m.—Report of Committees.

9:30 a. m.—Election of officers and installation.

"Reclaiming Water from Condensate in Machine Room," J. O. Ross, Ross Engineering Company, New York City.

"Some Observations in the De-Inking of Old News Papers," Prof. Sidney D. Wells, Forest Products Laboratory, Madison, W.

"Vocational Education," A. D. Woods, Champion Fibre Company, Canton, N. C.

"Use of Starch in Paper Manufacturing," W. A. Nivling.

"Use and Abuse of Paper Mill Felts," George H. Harvey, Harvey-Gardiner Paper Company, Middletown, Ohio.

"As the Printer Sees Us," P. J. Massey, Chicago, H. D. De-Forest, Kalamazoo.

"Advantages of Using Metallic Packing in the Paper Mill," Charles C. Hall, vice-president New Era Metal Products Company, Kalamazoo.

1:15 p. m. Luncheon New Burdick Hotel dining room.

2:15 p. m. Business meeting, Burdick Hotel ball room

3:00 p. m. Visit to paper mills.

4:00 p. m. Trip to Gull Lake, with bathing and boating.

7:00 p. m. Dinner at Labelle Hotel.

COST ACCOUNTANTS' SESSIONS

THURSDAY MORNING, JUNE 1

9 a. m. Registration in lobby of the Park-American Hotel.

10 a. m. Meeting in the Kalamazoo Vegetable Parchment community house.

Business meeting.

Report of committee on beater furnish, H. F. Miller, American Writing Paper Company.

Report of committee on depreciation, Edgar S. Catlin,

FRIDAY MORNING, JUNE 2

9:30 a. m. Meeting in the Kalamazoo Vegetable Parchment Community house.

"A Simple Cost System for One or Two Machine Mill," Paul Koenig, Continental Paper and Bag Company.

General discussion regarding:

1. Cost association's future activities.
2. Initiation of campaign for new memberships.
3. Work of local divisions and group cost divisions.
4. Executives and cost departments.

Ladies' Entertainment

Entertainment of unusual excellence is promised for all lady visitors at the convention. Mrs. Elizabeth W. Stone, social welfare worker at the Kalamazoo Paper Company, has consented to take charge of arranging details for this portion of the convention happenings. She is not being stinted in her efforts.

While the program is subject to changes, especially should unfavorable weather conditions prevail, provisions will be made for dinner at the Kalamazoo Country Club, a motor trip to Dr. W. E. Upjohn's peony farm, where thousands of plants are in blossom, a ride on Gull Lake, with luncheon at Turner's Landing, also special entertainment at the Kalamazoo Paper Company's welfare department and inspection of the splendid amusement and assembly hall in the Bryant Paper Company's administration building.

The pleasure of luncheon and inner sessions will be materially enhanced by a series of musical and vaudeville acts.

The ladies will also be present at the annual banquet of the convention, which occurs Thursday evening, June 1, at the Kalamazoo Vegetable Parchment Company's community hall.

President O'Connell and his various committee workers are earnestly hoping the visiting superintendents and cost accountants will bring their wives with them to Kalamazoo, certain that their stay will be made thoroughly enjoyable.

Strathmore Association Meets

WORONOCO, Mass., May 22, 1922.—Friday, May 19, saw the close of the third annual meeting of the Strathmore Mill and Merchants' Association. The meeting lasted two days, the delegates being guests of the Strathmore Paper Company, Mass. The general tone of speeches were to the effect that prices were stabilizing to a great extent and that they could not reasonably be expected to go much lower.

Approximately fifty attended the meeting in the new Memorial Hall at Woronoco, and the following men spoke: Leon Beck, president of the association; Col. B. A. Franklin, vice-president of the Strathmore Paper Company, and C. W. Dearden, advertising manager; Louis Balsam, secretary of the Direct Mail Association; W. J. Philips, Southgate Press, Boston; Harry J. Winston, Hill-Winston Company, New York; J. C. Hurd, advertising service manager of the A. Storrs & Bement Company, Boston; H. S. LeDuc, advertising manager of the Chas. Beck Company, Philadelphia; Everett Addoms, secretary of the Miller & Wright Paper Company, New York; C. F. Norton, Strathmore advertising department and M. H. Grassy and W. M. Black of the same company; Brad Stephens, editor of "Direct Advertising."

Senate Places 4 Cent Duty on Casein

(By Telegram to THE PAPER TRADE JOURNAL)

WASHINGTON, D. C., May 24, 1922.—The Senate today placed a duty of four cents per pound on casein taking it off the free list.

Fred. Enders Goes With Buckley, Dunton & Co.

Fred. Enders & Co., Inc., of 52 Vanderbilt avenue, New York has recently announced its voluntary dissolution and the continuance of its business under the direction of Bulkley, Dunton & Co., 75-77 Duane street, New York, Fred. Enders, president of the former company explained his motives for the change to a representative of the PAPER TRADE JOURNAL, attributing the dissolution to the increased organization facilities of Bulkley, Dunton & Co., who have been established since 1838.

Mr. Enders is now manager of the Pulp Department of the latter company, and brings with him the representation for them of the following Swedish Mills, as their sole selling agents in this country: Mackmyra Sulfit Aktiebolag ("M. S." and "M" brands—Unbleached Sulphite); Bergvik Och Nya Aktiebolag ("Goat Brand" Sulphite and Kraft Pulps); Aktiebolaget Iggesunds Bruk (Unbleached Sulphite and Kraft Pulps).

Business of the firm of Fred. Enders & Co. is being liquidated under the direction of Bulkley, Dunton & Co., and this organization has sent a cordial letter to the trade offering the facilities of their company, thus enlarged, to the service of their patrons. Mr. Enders, who was formerly connected with this firm for three years duration, still has associated with him the former staff of Fred. Enders & Co.

Central States Wrapping Paper Men Meet

[FROM OUR REGULAR CORRESPONDENT]

PITTSBURGH, Pa., May 22, 1922.—The Central States Wrapping Paper Association held its annual meeting and election of officers at the Pittsburgh Athletic Club, Tuesday, May 16, when the following officers were elected to serve during the ensuing year:

P. H. Clifford, president; A. E. Stevens, vice-president; A. H. Seyler, treasurer and E. A. Petrequin, National Committee Man with A. N. Miller alternating.

This meeting was probably the best attended in the history of the association, all but two houses being represented.

Mr. Petrequin called for reports on business, and it was the consensus of opinion that improvement was going on with much better prospects ahead.

Being a one day meeting, the afternoon hours were spent in open, with baseball games and golf tournaments leading in the sports. The meeting was closed following a very enjoyable banquet.

Big Demand for Cellucotton

APPLETON, Wis., May 22, 1922.—Because of the enormous growth of the demand for "Kotex," a cellucotton product manufactured by the Cellucotton Products Company, controlled by the Kimberly-Clark Company, the old Badger papermill of the K-C company has been converted into a cellucotton plant. Much new machinery will be added, it is said.

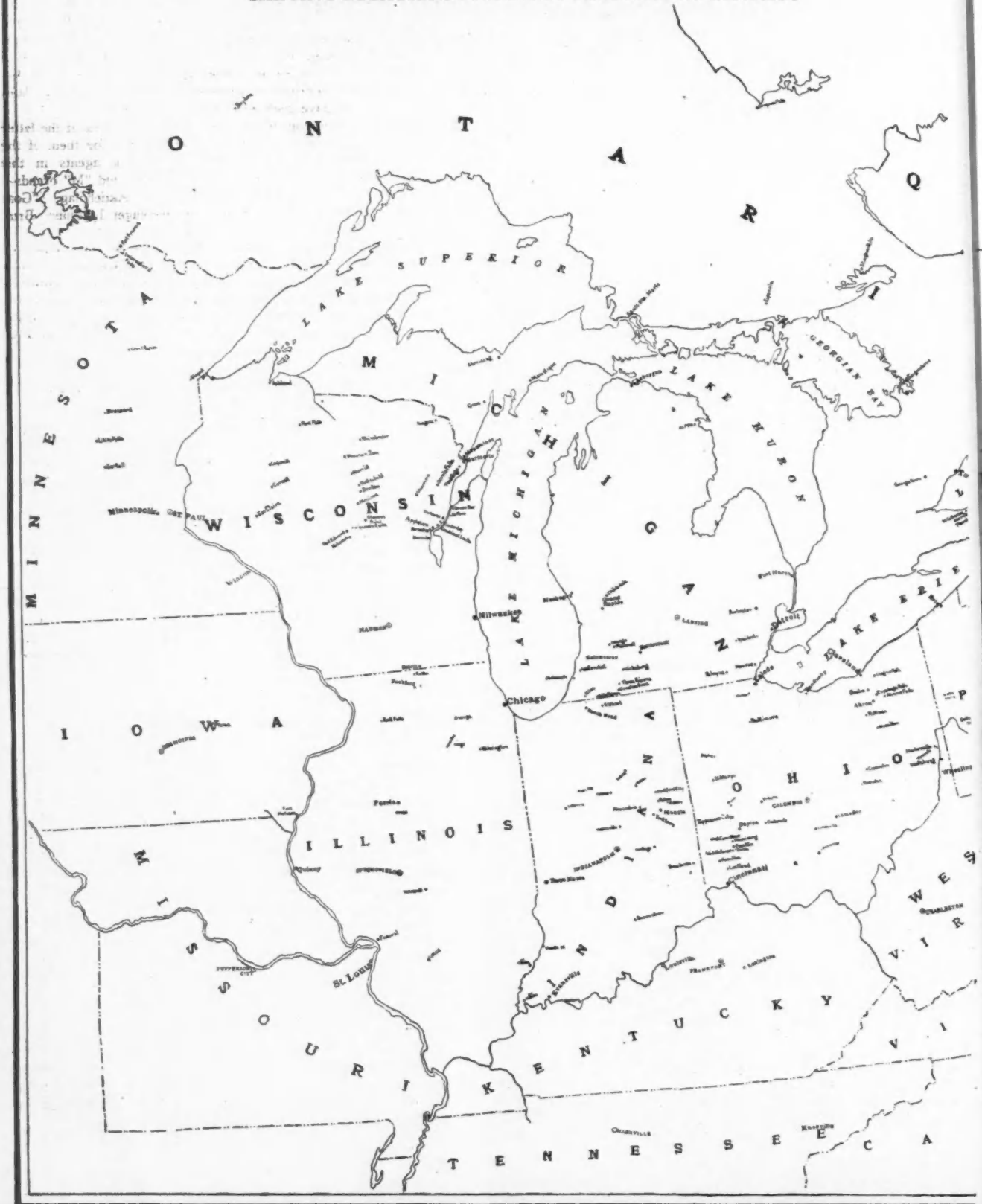
The lower floor will be used for the manufacture of cellucotton, while the upper floor will be equipped with Kotex machines and toilet and locker rooms for the more than 100 girl employees. The old factory will be used for storage purposes.

The Cellucotton Products Company was formed shortly after the war and the manufacture of Kotex started on a small scale. The demand for the product, through national advertising, has increased at a rapid rate and more factory space was required.

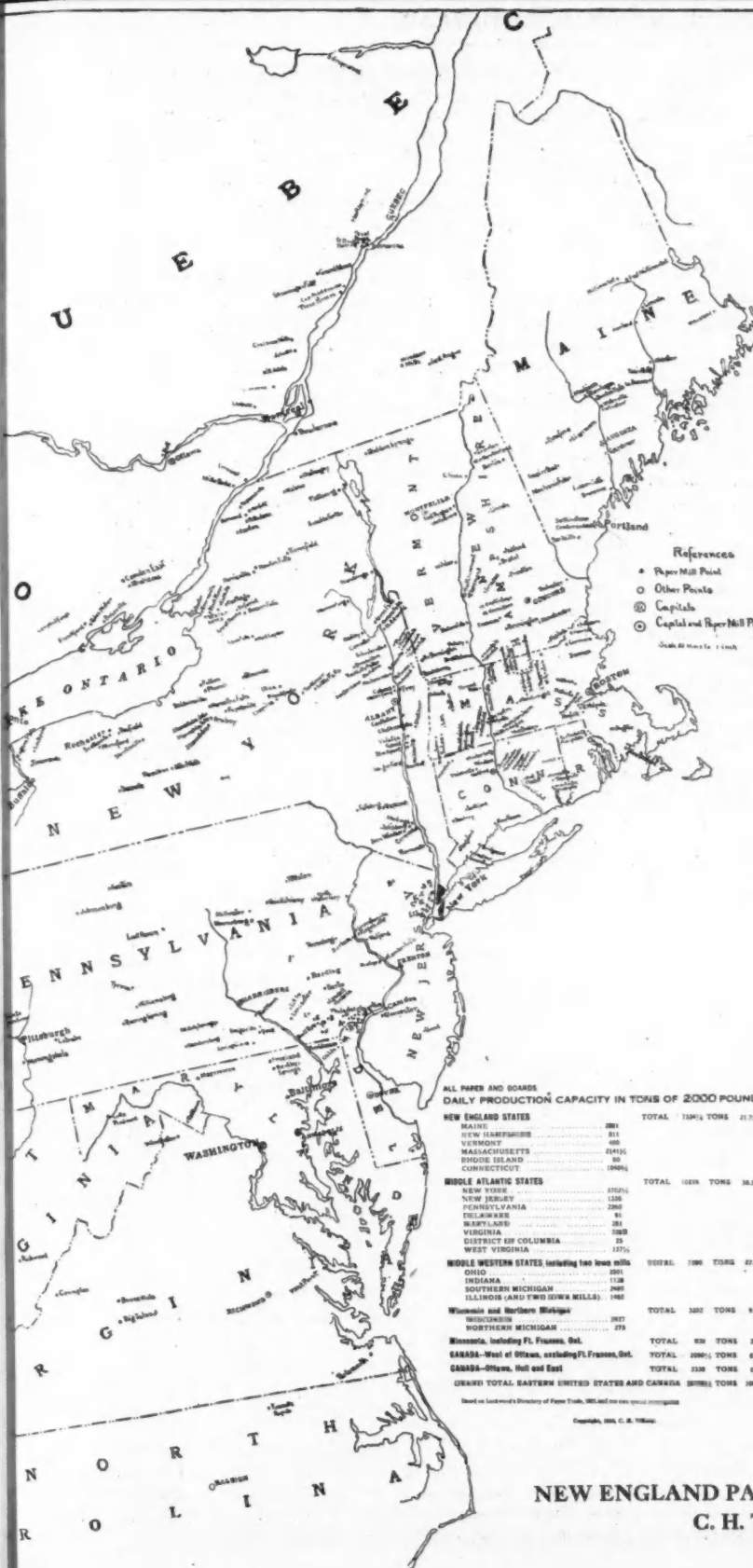
Swedish Official Visits Bureau of Standards

WASHINGTON, D. C., May 22, 1922.—Everet Nolin, Director of the Government Testing Institute, of Sweden, located at Stockholm, has been visiting Bureau of Standards, Forest Products Laboratory and other laboratories investigating methods of analysis and testing with a view to developing specifications on paper for Sweden, particularly in reference to paper for permanent records.

PAPER AND BOARD MILLS OF EASTERN UNITED STATES AND CANADA
SHIPPING LOCATIONS AND DAILY PRODUCTION CAPACITY



DAILY CAPACITY IN TONS OF 2000 POUNDS



Connecticut	Massachusetts (cont.)	New York (cont.)	Pennsylvania (cont.)
Andover 78	Lawrence 115	Deer 58	Teaver Dam E 11
Bridgeport 20	Lee 38	East Rochester 65	Chambersburg 24
Burlington 278	Middlefield 10	Fallburgh 6	Greaser T 40
Danbury 6	Millers Falls 10	Fayetteville 4	Joe Run P 19
East Hartford 20	Montpelier 25	Falls Mills 328	Lowington I 15
Hartford 14	Monroe Bridge 25	Fort Edwards 149	Durban 10
Hep River 10	Natick 25	Frankfort 9	Edgemoor 240
Lymna Viaduct 25	Newton Lower Falls 5	Fulton 289	Edgemoor 240
Manchester 68	Northampton 19	Glenn Falls 282	Glenn Mills A 130
North Ferrisburgh 51	North Ferrisburgh 51	Glenn Falls 282	Glenn Mills B 130
North Ferrisburgh 51	North Ferrisburgh 51	Glenn Falls 282	Glenn Mills C 130
North Ferrisburgh 51	North Ferrisburgh 51	Glenn Falls 282	Glenn Mills D 130
North Ferrisburgh 51	North Ferrisburgh 51	Glenn Falls 282	Glenn Mills E 130
North Ferrisburgh 51	North Ferrisburgh 51	Glenn Falls 282	Glenn Mills F 130
North Ferrisburgh 51	North Ferrisburgh 51	Glenn Falls 282	Glenn Mills G 130
North Ferrisburgh 51	North Ferrisburgh 51	Glenn Falls 282	Glenn Mills H 130
North Ferrisburgh 51	North Ferrisburgh 51	Glenn Falls 282	Glenn Mills I 130
North Ferrisburgh 51	North Ferrisburgh 51	Glenn Falls 282	Glenn Mills J 130
North Ferrisburgh 51	North Ferrisburgh 51	Glenn Falls 282	Glenn Mills K 130
North Ferrisburgh 51	North Ferrisburgh 51	Glenn Falls 282	Glenn Mills L 130
North Ferrisburgh 51	North Ferrisburgh 51	Glenn Falls 282	Glenn Mills M 130
North Ferrisburgh 51	North Ferrisburgh 51	Glenn Falls 282	Glenn Mills N 130
North Ferrisburgh 51	North Ferrisburgh 51	Glenn Falls 282	Glenn Mills O 130
North Ferrisburgh 51	North Ferrisburgh 51	Glenn Falls 282	Glenn Mills P 130
North Ferrisburgh 51	North Ferrisburgh 51	Glenn Falls 282	Glenn Mills Q 130
North Ferrisburgh 51	North Ferrisburgh 51	Glenn Falls 282	Glenn Mills R 130
North Ferrisburgh 51	North Ferrisburgh 51	Glenn Falls 282	Glenn Mills S 130
North Ferrisburgh 51	North Ferrisburgh 51	Glenn Falls 282	Glenn Mills T 130
North Ferrisburgh 51	North Ferrisburgh 51	Glenn Falls 282	Glenn Mills U 130
North Ferrisburgh 51	North Ferrisburgh 51	Glenn Falls 282	Glenn Mills V 130
North Ferrisburgh 51	North Ferrisburgh 51	Glenn Falls 282	Glenn Mills W 130
North Ferrisburgh 51	North Ferrisburgh 51	Glenn Falls 282	Glenn Mills X 130
North Ferrisburgh 51	North Ferrisburgh 51	Glenn Falls 282	Glenn Mills Y 130
North Ferrisburgh 51	North Ferrisburgh 51	Glenn Falls 282	Glenn Mills Z 130

References
 ● Paper Mill Point
 ○ Other Points
 ⊙ Capital and Paper Mill Point

ALL PAPER AND BOARD
 DAILY PRODUCTION CAPACITY IN TONS OF 2000 POUNDS

NEW ENGLAND STATES	TOTAL 1921 TONS 21,717.8
MAINE	281
NEW HAMPSHIRE	214
VERMONT	405
MASSACHUSETTS	10,416
RHODE ISLAND	60
CONNECTICUT	10,041
MIDDLE ATLANTIC STATES	TOTAL 1,019 TONS 12,119.6
NEW YORK	2,074
PENNSYLVANIA	1,336
DELAWARE	280
MARYLAND	61
VIRGINIA	25
DISTRICT OF COLUMBIA	28
WEST VIRGINIA	1,074
MIDDLE WESTERN STATES, including the two new ones	TOTAL 786 TONS 22,469.5
OHIO	261
INDIANA	1,128
SOUTHERN MICHIGAN	1,469
ILLINOIS (AND TWO NEW MILLS)	1,571
WESTERN MICHIGAN	287
NORTHERN MICHIGAN	273
WISCONSIN	1,128
MICHIGAN	1,128
TOTAL 88 TONS 2,184.8	
MINNESOTA, including Ft. Frances, Minn.	TOTAL 280 TONS 2,184.8
CANADA - West of Ottawa, including Ft. Frances, Ont.	TOTAL 108 TONS 2,184.8
CANADA - Ottawa, Ont. and East	TOTAL 108 TONS 2,184.8
GRAND TOTAL EASTERN UNITED STATES AND CANADA	50,000 TONS 50,000.0

NEW ENGLAND PAPER & PULP TRAFFIC ASSOCIATION
 C. H. TIFFANY, Traffic Manager

BOSTON, DECEMBER 1921

BERMINGHAM & PROESSER CO. TO ERECT MODEL WAREHOUSE

New Structure in Kalamazoo on Which Work Was Begun Monday Will Be One of the Finest of the Kind in Southwestern Michigan—Wax Paper Manufacturers Meet at the Community House of the Kalamazoo Vegetable Parchment Paper Co.—Operation of the Mullen Brothers Paper Co. Mill at St. Joseph Is Ordered Discontinued by Judge White—S. B. Monroe Says Business Looks Better:

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., May 22, 1922.—The contract for the finest paper warehouse in southwestern Michigan has been awarded by Birmingham & Proesser Company to the Miller-Boyer Construction Company. The structure will be located on East Frank street, at the intersection of the Chicago, Kalamazoo & Saginaw Railroad, thus insuring adequate sidetrack facilities as well as approach on a paved street.

The building will be 54 by 166 feet basement and three stories high. It will be of reinforced construction, strictly fire proof, the frontage to be of tapestry brick and of a dignified design. The total floor space provided will be 34,560 square feet and the construction will provide for a load carrying capacity of 250 pounds per square foot, or 8,640,000 pounds for the whole building.

The main floor will be at car floor level and will be used entirely for warehouse purposes. The company's offices will be spacious and well laid out for efficient handling of that branch of the business. They will occupy the entire frontage on the second floor.

While the contracts for plumbing, heating and wiring have not been awarded, Louis Simon, secretary and general manager of the Birmingham & Proesser Company, announces that the building completed will cost about \$75,000.

"The structure planned will give us needed capacity for the proper handling of our business" said Mr. Simon. "At present we are forced to rent large outside storage space, causing us to work at a great disadvantage. We have a site on East Frank street, 66 feet by 330 feet, and are using but half that area at this time. We can easily double our capacity without buying any additional ground."

O. F. Miller, of the Miller-Boyer Construction Company, started work on the new building Monday morning.

Wax Paper Manufacturers Meet

Production programs and methods, permitting closer co-operation between the manufacturers and users of wax paper occupied the whole time of the meeting of the Waxed Paper Manufacturers' Association, which assembled Friday, May 19, at the Kalamazoo Vegetable Parchment community house.

The practicability of standardizing in sizes and weights of waxed paper to permit a reduction in costs was a subject generally discussed and approved.

Another important feature was the presence of representatives of concerns that manufacture automatic bread wrapping and other types of sealing machines. They explained difficulties encountered at times in the use of certain grades of waxed paper on certain types of machines, at the same time showing that many of these difficulties could be remedied by the manufacture of special grades of paper, especially suited for use on certain makes of machines. It was demonstrated that proper standardization of product would make it possible for wax paper makers to meet the needs of their larger customers, if given knowledge of the consumers mechanical equipment.

The demonstrations proved so profitable, that it was decided to continue them at future meetings. With this end in view makers

of machinery handling waxed papers will be urged to make exhibits of their products and their methods of production.

The organization was in session the entire day. C. A. Buskirk, president of the Wolverine Paper Company, Otsego, and president of the national association, presided at the meetings, Secretary-Treasurer O. B. Towne, of New York city, was also present. Jacob Kindleberger, president of the Kalamazoo Vegetable Parchment Company, was host to the visitors and a fine dinner was served at the noon hour in the community house.

Mullen Mill to Suspend Operations

Operations of the Mullen Brothers Paper Company's mill at St. Joseph, Mich., has been ordered suspended by Judge George E. White, of the Berrien County Circuit court. The order was issued to the Farmers and Merchants National bank, of Benton Harbor, receivers.

The judge's order was issued at the conclusion of a hearing, Tuesday afternoon, upon the petition of the Francis Hughes Company, Chicago, a creditor of Mullen Brothers, and a holder of a \$70,000 mortgage on the plant.

The failure of the Mullen Brothers Paper Company is the third in the history of the industry in the Kalamazoo valley and Western Michigan districts. The two preceding this one were the Oscar Felt and Paper Company, whose plant at White Pigeon was sold to the Eddy Paper Company and the Botsford Paper Company, of Kalamazoo. That mill was sold to the Kalamazoo Paper Company, and has for over 20 years been an integral part of the great industry. It is still running and counted a good, steady producer.

Paper Business Looks Better

"The paper business certainly looks better from every angle" remarked S. B. Monroe, treasurer of the Allied Paper Mills, who has just returned from a trip to New York city in the interests of that organization.

"There is a better feeling, which promises to be a big factor in the ultimate revival of the industry."

Mr. Monroe reports that the new sales offices and warehouse of the Allied Paper Mills, advantageously located in the outskirts of the printing district of the metropolis will be occupied this week and will be stocked adequately to care for the company's eastern business.

New Special Rate on Cartons

The Kalamazoo valley paper industry is interested in a new special rate on cartons in the flat from this territory to California points. A reduction from \$1.90 to \$1.50 a hundred per car load has been granted. It amounts to a saving of \$160 per car, classification weight.

This rate was the outgrowth of the contract awarded the Michigan Carton Company, Battle Creek, by the California Fruit Growers' Association. The total consignment equals 175 carloads of flat cartons (40,000 pounds per car) and is one of the largest ever awarded a Michigan mill. The saving on the whole shipment amounts to \$28,000. As the contract was taken on a very narrow margin, the reduction in the freight tariff was of vital importance.

Peshtigo Paper Co. Closes

[FROM OUR REGULAR CORRESPONDENT]

PESHIGO, Wis., May 23, 1922.—The paper mill of the Peshtigo Paper Co., formerly the Peshtigo Pulp and Paper Company, has closed down because of a shortage of pulp and probably will not be started again until late this month. Pulp will be shipped in from Port Arthur, Ontario, it was said. This pulp will not begin arriving for another week.

The Peshtigo Fibre Company plant has been down for some time and a large crew of men is to start work at once on the improvements ordered by the new owners. These improvements, to cost several hundred thousand dollars, will effect large economies, amounting to as much as \$200,000 a year.

May We Quote?

We are now booking tonnage for first open water shipment as well as for shipments for balance of the year 1922

WELL KNOWN SCANDINAVIAN

Unbleached and Easy Bleaching

SULPHATES

Unbleached—Easy Bleaching—Bleached
ALSO

MITSCHERLICH

SULPHITES

Let Us Quote You Our Prices!

A. J. PAGEL & CO., Inc.

347 Madison Avenue

New York City

HIGHER NEWS PRINT PRICES NOT PROBABLE THIS YEAR

**George McKee, President of the Canadian Pulp and Paper Association Says Prospects for Improvement in This Direction Are Not Encouraging But Must Await the Developments of the Future—Latest Issue of Bonds of the Wayagamock Pulp and Paper Co. Have Been Entirely Sold and Subscription Lists Have Been Closed—
I. P. Co. Ships Paper From Three Rivers by Water.**

[FROM OUR REGULAR CORRESPONDENT.]

MONTREAL, Que., May 22, 1922.—George McKee, president of the Canadian Pulp and Paper Association in an interview in regard to recent reports on the part of some brokerage houses that the paper industry is rapidly approaching the high level of prosperity that it enjoyed in 1920 said: "While the news print industry may be said to be in a better position than it was a year ago, it is certain that there is no real ground for the over-optimistic statements and rose-colored forecasts that are being spread abroad, presumably for their effect upon stock market speculation. It is quite true that most of the Canadian mills are at present producing a greater volume of paper than they did during the slump period of last year. We hope that this is more than a passing condition brought about by seasonal influences and the desire of the newspaper publishers to forestall delayed shipments owing to the coal strike and to threatened labor troubles within the industry itself, but this cannot be determined accurately until the summer has further advanced and the publishers are able to estimate their fall requirements. At present newspaper circulation and advertising volume both show a gratifying increase over last year, which, if it continues, will undoubtedly help the situation. The persistent rumors of an increase in the contract price of news print before the end of the year can, however, have no substantial basis, inasmuch as a sufficiently large proportion of the Canadian manufacturers are already committed for the remainder of the year to ensure price stability. While it is generally admitted, even by informed publishers, that the current price of news print does not yield an adequate return when current production costs are taken into account, the prospects for improvement in the direction are not encouraging, but must await the developments of the future."

Commenting on this statement, the Financial Times of Montreal says:

"The conclusion was and is that the pulp and paper industry is Canada's own, genuine, natural industry. For it no subsidies, protective tariff or Government assistance is needed. All that is asked is a fair field and no favor and the industry will do the rest. Today with the industry on the up-swing once more, it is easier to believe than it was a year ago. As pointed out by the president of the Canadian Pulp and Paper Association, the mills are operating more actively than they were a year ago or even six months ago, and there is an increased demand for their output. This is due not only to the accidents of labor and other producing and marketing conditions but to a genuine improvement in demand, based upon increased consumption. Newspaper advertising and circulation are both showing gratifying improvement, thus furnishing a justifiable basis for increased confidence and optimism even though not for the more enthusiastic predictions concerning the return of high prices and conditions such as existed in 1920. Prices may or may not improve further during the present year. In either case, everyone who has analyzed conditions surrounding the pulp and paper industry must feel comforted in the thought that here, at least, is one industry which Canada may depend upon long to provide remunerative employment for thousands of her

craftsmen, profits for shareholders, interest for bondholders, freight for railways, revenues for her Government and exports which will swell the returns from abroad and provide the much-needed stabilizing influence upon exchange."

Wayagamack Issue Sold

Announcement is made that the syndicate headed by the firm of Rene T. Leclerc who recently purchased the issue of \$1,374,500 of 6 per cent bonds of the Wayagamack Pulp and Paper Company has disposed of the entire offering and that subscription lists have been closed. The successful result of this offering is attributed to the confidence that is held by investors in the pulp and paper industry of this country in spite of the set-back that occurred last year. The products of the Wayagamack Company are sulphate pulp and wrapping paper. The new issue will be listed on the Montreal Stock Exchange where there is an existing balance of a former issue of \$3,500,000 of similar bonds already listed.

Forest Protection

The directors of the Canadian Forestry Association, meeting in Quebec, discussed the further development of plans for the extension of propaganda in forest fire prevention. It was announced that the forest exhibits car, newly-equipped and improved, would be in the province of Quebec shortly for a tour of several months. There will be three lecturers on board. It was decided to institute a national essay competition for school children, with twenty-seven prizes, to promote juvenile interest in forest protection, tree-planting, care of the farm woodlot and allied topics.

Three Rivers Paper Goes by Water

Shipments from the news print mill of the International Paper Company at Three Rivers, Que., have been made by water down the St. Lawrence and the Atlantic coast to New York. This was done on account of the high freight rates and also to demonstrate the possibilities of this means of shipment. The mill itself is turning out between 45 and 50 tons a day with a present capacity of about 70 to 75 tons. There has been difficulty found in years past in shipping by water, and a number of attempts have been made from inland places. Indeed proposals have come to ship paper to Chicago by water and to Detroit, Buffalo and other big newspaper centres, but the danger of damage to the paper has caused these to be abandoned. The experiment of the International Paper Company will be carefully watched on this account.

Good "Driving" Season

From practically all the lumber camps throughout Eastern Canada comes the report that the season has so far proved an excellent one for driving logs down the river. In one or two cases it looked as though large quantities of the logs would be stranded but in every instance rain came in the nick of time and had enabled the companies to float practically all the lumber needed for the season down to their mills.

Receiver for Parsons Pulp & Lumber

PHILADELPHIA, May 19, 1922.—A Federal receiver was appointed today by United States District Judge Thompson for the Parsons Pulp and Lumber Company, which owns extensive timber lands and lumber and pulp mills in West Virginia, Virginia and North Carolina. The action was taken on application of William Whitmer & Sons, Inc., which is said to own all the capital stock of the Parsons company. The suit, a friendly one, was joined in by all the large creditors.

The embarrassment was said to be temporary and due to unsettled conditions in the lumber market. Arthur J. Stevens, president of the company, was appointed receiver. Liabilities were placed at \$4,000,000 and assets at \$5,000,000.

52%

*of last year's
orders for*

**BIRD
ROTARY
SCREENS**
were re-orders

Let us tell you the reason

BIRD MACHINE COMPANY

South Walpole,

Massachusetts

Western Representative:
T. H. Savery, Jr., 1718 Republic Bldg.,
Chicago, Ill.

Canadian Builders of Bird Machinery:
Canadian Ingersoll-Rand Co., Ltd.,
260 St. James St., Montreal, Quebec.

88-218

NEW ENGLAND PAPER MEN LOOK FOR BETTER DEMAND

Manufacturers of Building Papers Especially Are Encouraged by the Boom That Is Setting in in the Building Trades—Less Pulpwood to Be Handled in the Log Drives in Maine Which Have Just Started—Big Timber Deal Is Put Through in New Brunswick and Nova Scotia by Hollingsworth & Whitney—Gindin Paper Box Co. Incorporates with Capital of \$50,000—Other Trade News.

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., May 25, 1922.—Manufacturers of papers used in the building trades report that they are expecting a big rush of orders from the different firms contemplating building on a large scale in Greater Boston and other localities throughout the New England states this spring. With negotiations under way for the first time in eighteen months for a better understanding between the employers and employees in the building trades in Greater Boston it is expected that the construction of dwellings, apartment houses and other structures will receive an added impetus which will be greatly welcomed by the paper manufacturers, who have been waiting for these orders to start work on former full time schedules.

An unprecedented building boom in Newton, Mass., one of the suburbs of Boston, has started and large orders for different kinds of building papers are being received by Boston firms. The total valuation of all building operations from January 1 to June 1 will be approximately \$2,000,000, and greatly exceed the total for the entire year of 1921.

Log Drives Started in Maine

Representatives of several of the paper companies in Maine who have been in Boston this week report that the log driving on the Kennebec River has already started and that approximately 60,000,000 feet of logs will be driven down the river from the scene of the big cuttings in northern Somerset territory. The river right now, according to them, is unusually full of pulp and other lumber, but in reality there is nearly 40,000,000 less feet being sent down this season than last.

It is reported that the Pine Tree Pulp Company, a newly established concern, has cut in the vicinity of 700,000 feet of pulpwood, while the Augusta Lumber Company and the Hollingsworth & Whitney Company have each cut several million feet. Several of the big Maine companies have not cut as much pulpwood this year. This is due partly to the recent slackness of demand and partly to the fact that large cuttings were made last year and in some cases were not floated down the river. Among these companies is the Cuchnoc Paper Company of Augusta, which did not cut any at all in the Somerset region this season, having considerable pulpwood on hand which was cut last year and not floated down. Work on driving this large amount down stream is already under way.

Large Timber Deal Put Through

The purchase of a tract of timber in the province of New Brunswick and Nova Scotia amounting to \$2,000,000 was put through by Hollingsworth & Whitney, Ltd., of this city and Waterville, Me., this week. As the result of this large purchase it is expected that large additional pulp mills will be erected in both provinces by the purchasers. The timberlands affected by the purchase lie in St. John, Kings and Albert counties, New Brunswick, and in Lunenburg, Kings, Cumberland, Queens and Annapolis counties, Nova Scotia.

The size of the timberlands transferred by the passage of the deeds amounts to over 50,000 acres in New Brunswick alone, and

the lumber licenses involved in the Nova Scotia transfer are on 83 square miles of Nova Scotia crown lands, thus consummating one of the largest lumber deals in recent years.

C. T. White & Sons, Ltd., of Sussex, Nova Scotia, were the owners of the lands in New Brunswick and Cumberland county, Nova Scotia.

Boston Paper Trade Outing

The annual event eagerly anticipated by the members of the Paper Industry, the outing of the Boston Paper Trade Association, is to be held this year on Wednesday, June 7. The Vesper Country Club, Lowell, Mass., will be the stamping ground where the members and their guests will hold forth for a day of good fellowship and good time. Golf, tennis, baseball and other sports will be the athletic events of the day.

General News of the Trade

S. S. Talbot of Portland, Me., Maine representative of the X. A. Storrs & Bement Company, was in Boston this week visiting the home office, renewing old acquaintances and getting a line of the new goods stocked by his firm. He reports the business good in Bangor and Augusta, but a bit quiet in Portland, although he stated that as a general thing it is steadier than in Boston.

Conditions in the paper trade have picked up even more during the past week or so and the merchants in this city are becoming more confident as to the business outlook of the future. Increased sales in various lines of goods are being reported by the different firms. J. C. Hurd, advertising manager of A. Storrs & Bement Company, reports that the Strathmore stationery for men is taking hold exceptionally well in Boston and other cities in New England and that the general trade conditions in this state and other New England states are picking up gradually. An interesting exhibit of Linweave engraved stationery with envelopes to match is being held by the same concern and efforts are being made by the salesmen to sell the stationery on the basis that it can be adapted to business purposes as well as to personal uses. W. R. Flammery, one of their city salesmen, and Mrs. Flammery, are the proud parents of a young son. Mr. and Mrs. Flammery make their home in Dorchester, Mass., a part of Boston.

The Gindin Paper Box Company of Boston is among the new companies incorporated under Massachusetts laws, this company having a capitalization of \$50,000. The incorporators are Nathan Bell, Israel Gindin and Dora Bell, all of Dorchester, Mass.

Several Boston paper merchants this week attended the funeral services in Biddeford, Maine, for Thomas F. Judge, a native of that city and personal representative of Lord Northcliffe in Canada. Mr. Judge, who was a graduate of the University of Maine, was general manager of Lord Northcliffe's large paper mills at Grand Falls, Newfoundland. He died in Newfoundland and his body was brought to Biddeford, Maine, for burial. He had installed at various times paper making plants in many places and was instrumental in bringing about several inventions in machinery in these plants.

Maine Superintendents to Meet

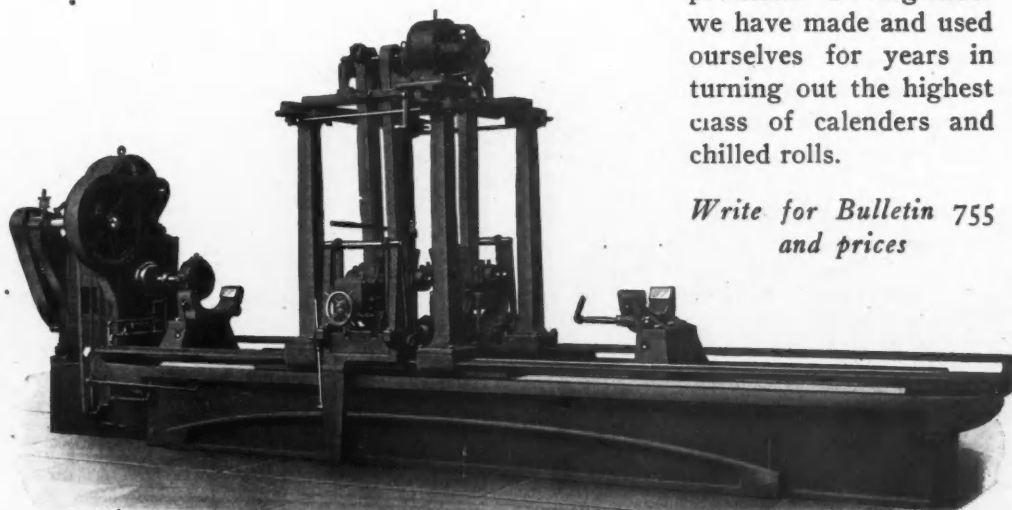
PORTLAND, Me., May 25, 1922.—Representatives from pulp and paper mills in this vicinity will attend the annual meeting of the Northeastern Division of the American Pulp and Paper Mill Superintendents' Association at the Elmwood Hotel, Waterville, Thursday, May 25.

The program will open with the annual business meeting at 11 a. m., which will be followed by a luncheon at 12 at the hotel, and by a visit at 2 in the afternoon to the plant of the Keyes Fibre Company at Fairfield and Shawmut and to the Waterville Iron Works. A banquet and entertainment will be held in the evening at the Elmwood. Following this banquet Robert B. Wolf, of the R. B. Wolf Company, 42 Broadway, New York, will deliver an address on "Advantages of Bleaching Pulp at High Densities." A discussion will follow.

Roll Grinders

For the sake of your product regrind your old Farrel rolls, or any others, on this heavy, sturdy instrument of precision—a roll grinder we have made and used ourselves for years in turning out the highest class of calenders and chilled rolls.

*Write for Bulletin 755
and prices*



Farrel Foundry & Machine Company

Established 1848

Ansonia, Conn.

**Branch Plant:
BUFFALO, N. Y.**

PAPER DEMAND IN TORONTO SAID TO BE NOT YET STABLE

Jobbers Report Record Sales One Week and a Falling Off in Demand the Following Week—On the Whole, However, the Market Appears to Be Improving—Rag and Paper Stock Market Shows Little Change with Few Revisions in Prices—Westminster Paper Mills Co. to Build Paper Plant at New Westminster, B. C., with as Little Delay as Possible—John Martin Back from Europe.

[FROM OUR REGULAR CORRESPONDENT.]

TORONTO, Ont., May 22, 1922.—The paper market still has its ups and downs and business has been fluctuating a good deal. Some jobbers report that they had a record week and others say that trade has fallen off. They also declare that all salesmen make the same reports, some weeks returning with a heavy order list and the next coming in with not a great deal to show for their work. News print is in good demand and there is a little stiffer call for pulp. Some paper box plants are now running to capacity and others have speeded up production considerably. It is said there will be no further change in board prices until July 1. Coated paper plants are running to moderate capacity and some jobbers expect there will be a downward revision in prices in the near future. They contend they can import and lay down coated stock from the United States about two cents cheaper per pound than they are able to buy from the mills at home.

There is not much change in the rag and paper stock market and very few revisions in price. The demand for new cotton cuttings seems to be a little better, although quotations show no alteration. Manila rope is having a fairly good call. Like paper consumers, the mills generally decline to stock up and seem to avoid buying ahead. Collections on the part of both manufacturers and jobbers are being closely watched and are reported fair.

The printing trade is busy only in spots and there is considerable talk about the adoption of the long price list, which is supposed to go into effect in both Toronto and Montreal in September next. Most members of the paper trade are not in favor of it and a few seem quite sanguine that the long price list will never be adopted. Opponents assert that by the time September rolls around many printers, who have been clamoring for the adoption of the system, will not want it.

The budget will be delivered by Finance Minister Fielding in Ottawa this week and there has been some holding back in the purchase of book papers. Certain interests have asked that the 25 per cent duty be either removed or reduced and the mills have been opposing the proposal. Just what the outcome will be cannot be foretold at the time of writing, but the issue is awaited with much interest both by manufacturers and jobbers and consumers.

Establishing Paper Mill in the West

J. J. Herb, formerly superintendent of the Interlake Tissue Mills Company, Merrittton, Ont., is the head of a new paper company which has been formed in British Columbia, where Mr. Herb has been for some time. The organization is known as the Westminster Paper Mills and it is expected that various lines of paper will be turned out in the plant. The company has leased a portion of the Indian reserve on the North Arm at New Westminster, B. C., and construction will start with as little delay as possible.

Serious Freshets Endanger Pulpwood

There have been several freshets on the rivers up north and the danger of pulp and paper companies losing a large part of their logs was great. The Mattagami Pulp and Paper Company, whose sulphite plant at Smooth Rock Falls, Ont., is now running full, had

about forty thousand cords of pulpwood in the river Mattagami, the water in which rose about four feet, but the company managed to come through without any loss of pulpwood. A report from Kapuskasing says that the Spruce Falls Company of Neenah, Wis., which has a sulphite mill at Kapuskasing, suffered a loss of many thousand dollars owing to the breaking of a boom in the river, with the result that much pulpwood was carried down stream which may not be recovered.

Sale of Plant Ordered by Court

The plant of the Western Canada Pulp and Paper Company, Limited, at Port Mellon, B. C., will be sold on June 15. The head office of the company is in Toronto. The daily production of the mill is forty tons of kraft pulp, dry, and ten tons, wet. The sale has been ordered by the court and the mill has not been in operation for about a year. It is understood that the sale presages a reorganization whereby the bondholders will take charge and expend considerable money on water power and other improvements in order to put the proposition on a paying basis.

Mr. Martin Returns from Abroad

John Martin, of the John Martin Paper Co., Winnipeg, a former president of the Canadian Paper Trade Association, who, with his wife and family, has been touring Europe during the past few months, was in Toronto this week on his way west and called upon a number of friends in the trade. Mr. Martin had a very enjoyable trip and his health is much improved. He is booming Winnipeg as the city for the next annual convention of the Canadian Paper Trade Association, which has always met in the East, and the West now thinks that its turn has come for a gathering of the trade.

Wall Paper Manufacturers Display

Stauntons, Limited, manufacturers of wall papers, Toronto, are busy at the present time and have been putting on some interesting window displays in various towns and cities. These exhibits show the different processes of wall paper making from the original design to the multi-color printing machine which gives the finished effect. To one dealer in each city the display is allotted for one week.

Wood Fiber Firm Is Expanding

J. Walter & Sons, wood fiber products manufacturers, Kitchener, Ont., intend erecting a new factory in order to meet the demands of the trade. The building will be of reinforced concrete with a basement and two stories, and the capacity will be treble that of the present quarters. Fifty per cent of the company's trade is export and the other half Canadian, the goods including fiber furniture trimmings, ship and home decorations.

Big Pulpwood Shipments Expected

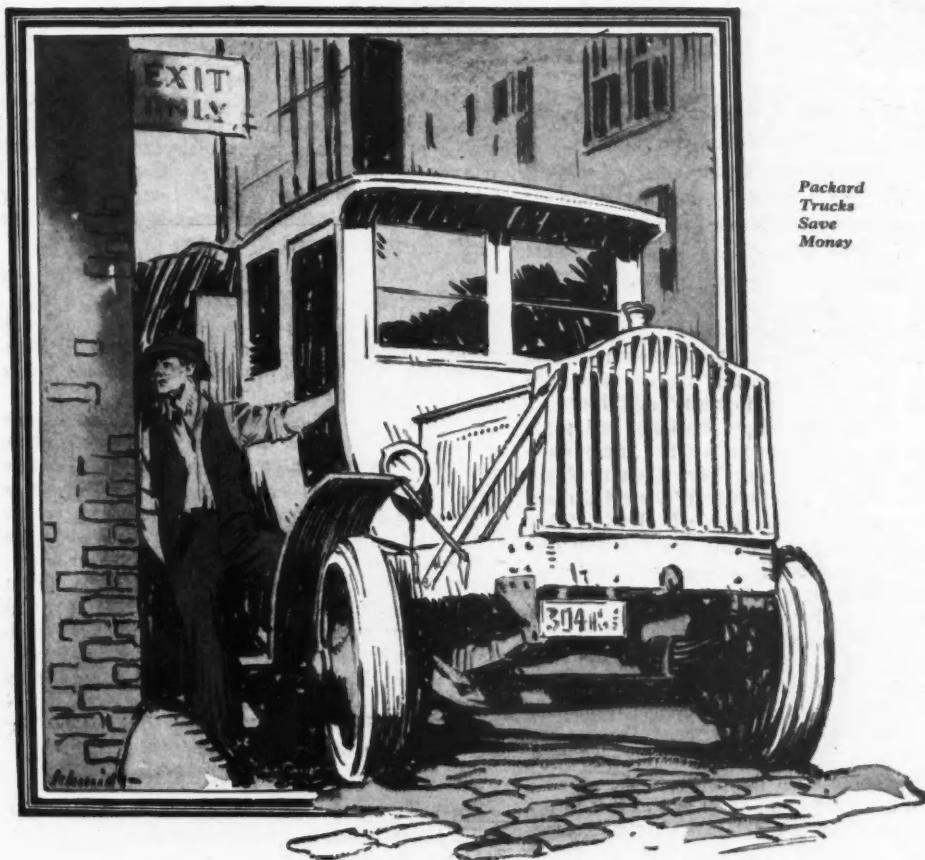
The Temiskaming and Northern Ontario railway is expecting big business in the shipment of pulpwood this summer. There are said to be 200,000 cords of pulpwood drying on the sidings, which, in addition to the large quantity now being cut, will make considerable freight traffic for the line, which is owned by the Ontario government. Settlers in the northern part of Ontario are now cutting pulpwood but the demand is about the same and prices have shown no change for some months. Whether there will be an advance this fall is problematical. Opinion on this point varies widely.

Notes and Jottings of the Trade

C. N. Ramsay of Ritchie & Ramsay, coated paper manufacturers, Toronto, has taken up his residence for the summer at Eastbourne, on Lake Simcoe.

Paper Siles, Limited, who represent several leading American paper firms, have removed from the Webster block, Yonge street, to the new Colonial building, King street west, Toronto, where they have much larger and more commodious quarters.

Recent rains have put out all the forest fires which were raging in certain parts of Ontario.



*Packard
Trucks
Save
Money*

It is perfectly plain that the Packard Truck never could have attained outstanding leadership were it not a sound, saving investment, from every viewpoint of truck operation.

The comparatively low purchase price of Packard Trucks—generally lower than prices of other trucks of comparable quality—adds great emphasis to Packard value.

The seasoned and stable organization building the Packard Truck will continue to advance and fortify still further its leadership and its reputation for lower-cost haulage.

Packard Trucks range in capacity from 2 tons, to 7½ tons; and in price from \$3,100 to \$4,500

PACKARD MOTOR CAR COMPANY, DETROIT



Packard Service

In 585 cities and towns throughout the United States, Packard Truck Service Stations give owners highly skilled service at a reasonable cost. Packard Truck costs, always low because sound, Packard construction minimizes need of repair, are held still lower by this expert, broadcast service.

PACKARD TRUCKS

NEW YORK SUPERINTENDENTS HOLD MEETING AT WATERTOWN

Floyd L. Carlisle, President of the St. Regis Paper Co., Among the Principal Speakers at the Meeting, Says That Labor Unions Must Recognize Court Orders and Arbitration Agreements and That the Time Is Approaching When the Government Must Establish Definite Regulations Over the Problem—St. Regis Paper Co. Makes Important Changes in Management at Its Various Plants.

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., May 22, 1922.—“Labor unions must hold themselves subservient to the laws of the land and the basic principles upon which this government is founded,” said Floyd L. Carlisle, president of the St. Regis Paper Company and paper manufacturer of national prominence, in his address Friday night before the members of the Northern New York Division of the American Pulp and Paper Mill Superintendents' Association assembled at a smoker and dinner at the Woodruff Hotel. “They must recognize the jurisdiction of the courts and the American principle of arbitration. It is a condition that is fraught with grave possibilities that threaten the security of the democracy.

“There is no question about labor having derived much benefit from organization, but abuses practiced have been harmful not only to the unions but the public as well. Court orders and arbitration agreements must be recognized and followed, and the time is coming when the government must establish definite regulations over the problem, and unless this is done the greatest conflict this country has ever seen is sure to come in the not far distant future.

“I feel that material influence is in the hands of the superintendents. This is not so important in the small mill as it is in the large one where company officials are not in such close contact with the men and the conditions. The superintendent should always keep himself familiar with conditions and should keep the owners informed. If the men are not being paid adequately, he should communicate this to the company, as well as other situations that arise. The solution of many problems lies in the hands of the superintendent.

“When reason and common sense are practiced on both sides there will be less friction.”

Other speakers at the dinner were: E. B. Sterling, president and general manager of the West End Paper Company, and V. K. Kellogg, formerly treasurer of the Newton Falls Paper Company. Mr. Sterling spoke of conditions he observed on his trip through the Mediterranean and Mr. Kellogg spoke generally in a most entertaining manner.

There were about 50 superintendents present to enjoy the smoker and dinner staged by President Homer E. Stafford, who introduced V. K. Kellogg as toastmaster of the occasion.

St. Regis Paper Co. Changes

C. T. Jewell, for years superintendent of the Herrings mill of the St. Regis Paper Company, has just been appointed assistant to C. C. Burns, general manager of all the mills of the company. M. J. Cornell, now superintendent of the Carthage Sulphite Pulp and Paper Company mill at Carthage has been engaged to succeed Mr. Jewell as superintendent of the Herrings mill. The change will take place on June 1.

Mr. Jewell has worked for the St. Regis Paper Company for nine years, starting as a finisher at Deferiet. He later went to the office and for the past three years has been in charge of the Herrings plant. He is recognized as a paper maker of exceptional practical experience and mature judgment.

Mr. Cornell is a man of long experience in the business and of proven ability.

The St. Regis Paper Company is pursuing its policy of recognizing merit wherever possible in the announcement of the appointment of William Karls to succeed Joseph Krockenburg as superintendent of the Deferiet plant. Mr. Karls has been in the employ of the company for three years and is an experienced paper maker. He had been advanced to the position of assistant superintendent some time ago. In the general promotion plan Robert Wark becomes assistant superintendent. He, too, has been working at the Deferiet plant for three years.

To Sell Quebec-Saguenay Pulp Co. Bonds

The Carthage Sulphite, Pulp and Paper Company will sell at the village hall in Carthage at public vendue to the highest bidder bonds to the face amount of \$237,000, being the First Mortgage Seven Per Cent Serial Coupon Bonds of the Quebec-Saguenay Pulp Company, Ltd., dated July 1, 1918.

It appears that an agreement was entered into between the two companies on September 15, 1920, whereby the Carthage corporation loaned to the Canadian company various sums from time to time amounting in all to \$150,000 and bonds to the face value of \$237,000, as above mentioned, were pledged as security.

It was stipulated that on or before three years from the date of the agreement the Canadian company should repay all sums of money so loaned with interest at 7 per cent, the interest to be paid semi-annually. It was further specified that should there be default in payment of money together with interest, the Carthage company could give 30 days' notice of intention to sell the bonds.

Such notice has been filed, payment of accrued interest being in default. The sale will be held June 21, at 11 a. m. Notice of intention is dated May 17, 1922, and is signed by Guy C. Jones, secretary of the Carthage Company.

I. P. Ground Wood Mill Opened

The groundwood department of the No. 4 Mill of the International Paper Company was placed in operation Saturday and it is expected that the paper machine will be started and the plant placed in full operation either Monday night or Tuesday morning. No trouble whatever is being experienced on account of the strike which was called May 1, 1921, not even the word “scab” being heard anywhere, and no union pickets being placed on duty.

At the mill it was said that the full quota of about 60 men have been hired to run the plant and that Monday there were about 50 men at work as though nothing had ever happened. It was admitted that about 80 per cent of the employees are men who worked for the company at the time the strike was called and the mills shut down.

Second Vice-President Barry of the Paper Makers' Union, was in the city last week to urge that union men keep out of the mill, but it is said that his efforts were unavailing and that the members of the local affected were determined to return to work.

Before starting the machinery the company used a force of experts to go over every piece of machinery to see that everything was in perfect working order. As a result operations are smooth as the power is turned on.

No 4 Mill has a capacity of 30 tons of paper a day, and it is expected that this capacity will be reached at once with fewer men than were used before the plant closed. The three tour system is being used. Book paper and fancy papers are to be manufactured at this plant.

Falls Mfg. Co. Contributes Again to Fund

The Falls Manufacturing Company, of Oconto Falls, Wis., a previous contributor to the Vocational Education fund, recently sent the committee an additional check for \$50 to apply toward the completion of the textbooks, work upon which is steadily progressing.

**FOR QUALITY PAPERS
USE**

A-1 BLEACHED SULPHITE PULP

MANUFACTURED BY

Kellner-Partington Paper Pulp Co., Ltd.

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SOLE AGENTS FOR U. S.

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21 East 40th Street

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KRAFT PULP

*Uniform in Quality
Essential for Strength Requirement*

The Pulp and Paper Trading Company

21 East 40th St., New York, N. Y.

Sole Agents for United States for

CANADIAN KRAFT, Ltd.

Three Rivers, Canada

ORDERS ARE MORE LIBERAL IN PHILADELPHIA MARKET

Distributors Although of the Opinion That Minor Readjustments May Be Made Are Confident That There Will Be No Radical Changes and Orders for Future Delivery May Safely Be Placed—Disposition on the Part of Some of the Smaller Houses to Get Business at Prices Irrespective of Profit Said to Be an Unfortunate Feature of the Situation—Roller Paper Co. Formed.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., May 23, 1922.—The better feeling in the trade, is best reflected in the very liberal orders they are giving to the paper mill men in the belief that a time is close at hand when it may not be possible to buy as advantageously and certainly not with as expeditious delivery, as at present. The distributors, while of the opinion that minor readjustments might be made are confident that there will be no radical changes and that commitments for future deliveries safely may be made. Of course, an element which contributes to this favorable view lies in the spirit of co-operation which is being shown by the mill representatives and they indicate a spirit of even greater support than in the past. With the easing up of conditions in the money market and the greater disposition of financial institutions to be lenient in the matter of loans, the distributors find themselves more favorably circumstanced than for a long time to take advantage of present conditions.

Coarse Paper Not So Satisfactory

Unfortunately, activities in the coarse paper market are not as lively as they are in the fine. Trading here is of an uncertain quantity with days of real sluggishness succeeding and without apparent cause days of almost rushing activity. An unfortunate feature of the situation is the disposition on the part of some of the smaller houses to get business at a price irrespective of profit. Because of the improved financial and industrial conditions, the buyer is by no means as insistent as he was some months ago to be given price concessions and representative houses suggest that ruinous price-slashing is absolutely unnecessary and is out of harmony with the spirit of the times. There is in the coarse paper field, however, no such thorough organization as there is in the fine and the absence of it is much regretted. Particular attention is being given by the coarse paper dealers to the foreign paper situation in view of the fact that the market is being flooded with offers of European goods at prices on their face far below those of the American made, but it is pointed out that the answer lies in the fact that in many instances, shipments of stock have not been up to the standard shown by samples and this has resulted in contentions and in delayed deliveries. Several of the representative coarse paper dealers are of the opinion that unless absolute certainty as to quality, promptness of shipment and other essential factors can be secured, many of the foreign offerings are risks and that prices finally will be found to be higher than for an equal or even slightly better grade of American product. The objection to the imported article does not hold true to so large an extent in the news print market and large quantities are being disposed of in this city either by direct importation, or through New York brokers.

Rages and Paper Stock Quiet

The week passed very quietly in the rag and paper stock market and was really without change. Were it not for small supplies coming in, mixed and commons would be a drug on the market. Mill demand for all the better grades, save hard white continues steady, but at the low prices which it maintained for some time.

Dealers, however, are generally disposed to make shipments and keep warehouses empty rather than to store up goods for future advances.

Roller Paper Company Formed

Changes of great interest took place during the week in the Wilkes-Barre branch of the D. L. Ward Company. Charles E. Roller, general manager of the office, retired together with the members of the sales organization consisting of Joseph Cunningham and Thomas Grayham. These three together with J. C. MacMurtrie, who was connected with the sales department until last January, will engage in business under the firm name of the Roller Paper Company. They expect to be in a position to make announcement of permanent location by June 1. The Roller Company will be engaged in the distribution of both fine and coarse papers, specialties and twine. Announcement is made by the D. L. Ward Company that management of the Wilkes-Barre branch has been placed in charge of Charles F. Mack and that associated with him as manager of sales will be F. H. Sewall. Mr. Mack had been associated with the Ward Company for some time as office manager and Mr. Sewall by reason of 17 years experience in the paper business, is thoroughly familiar with all its details. Mr. Mack is a resident of Wilkes-Barre and is thoroughly familiar with the entire field. The line to be carried by the Wilkes-Barre branch of the Ward Company will consist of standard and nationally advertised book papers, covers and bonds. The principal lines will be those of the S. D. Warren Company, the Hammermill Paper Company and the Neenah Paper Company and these papers will be sold exclusively through the printer. There will also be carried a complete line of wrapping papers, twines and toiles.

General News of the Trade

Baseball enthusiasm has caught the paper trade and Thomas Gamble, who makes his headquarters with the John Simmons Company has been requested by a number of the paper salesmen to organize a team. Mr. Gamble had just assumed the management of the Glenolden Baseball Club and while he is enthusiastic over a nine to represent the paper trade in the Industrial League, is fearful that he will not be able to give the necessary time to the matter and he is therefore seeking someone to captain an organization which readily can be gotten together.

The Garrett-Buchanan Company as the Philadelphia distributor for the American Writing Company, Eagle-A products, reports a very large response to the advertising campaign which that organization is conducting under the slogan of a yardstick of paper measurement. Immediately after the first publication ten days ago, inquiries for copies of the booklet on the proper uses for paper began pouring in and the firm has now on its records requests aggregating more than 9,000 copies. Morgan H. Thomas of the Garrett-Buchanan Company who has just returned from a western business trip contemplates leaving early in June for a month's recreation trip to the Yellowstone National Park.

John P. Deal, formerly head of the company bearing his name and well known in trade circles is now representing Coy, Hunt & Co. with offices on the machinery floor of the Bourse.

The trade understands that Frank P. Miller, who lately retired from active association with the Frank P. Miller Paper Company, of East Downingtown, Pa., is organizing a company for the manufacture of boxboard in the metropolitan Philadelphia district.

The Charles Beck Machine Company is developing a large trade in sheet cutters of its own design and patent among the boxboard manufacturers, the sales argument being that by their use, the paper box men can buy their paper in rolls, cutting it up to meet requirements instead of tying up capital in keeping on hand many sizes of the same grades.

(Continued on page 32)



Quality



Since every bag produced by us measures up to the highest standards, the entire line offers a quality that stands all tests. Therefore, you can buy

LAWRENCE GROCERS' BAGS

with complete assurance that you are getting 100 cents' value for every dollar. Made in Improved Self-Opening and Old Style Squares.

James Lawrence, President

THE LAWRENCE BAG COMPANY
MIAMISBURG, OHIO

BIDS AND SPECIFICATIONS FOR GOVERNMENT PAPER

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 24, 1922.—The purchasing officer of the Government Printing Office will open bids on May 26 for:

40,000 lbs. 24 x 36—80. High Finish Sulphite Manila Paper.

The purchasing officer will open bids on May 29 for:

8,600 lbs. (200 reams) 21 x 32—43, No. 24, White Glazed Bond Paper.

4,800 lbs. (100 reams) 20 x 25—48. Goblin Blue Rough Cover Paper.

2,190 lbs. (20 reams) 21 x 32½—109½. No. 60, Buff Commercial Ledger Paper.

The Post Office Department has announced that bids will be opened on June 9 for several millions of envelopes for the Government Departments for a period of both six months or a year for the fiscal year beginning July 1. The proposal asks for bids on many kinds of envelopes.

The purchasing officer of the Government Printing Office has received the following paper bids:

13,000 lbs. best quality Binder's Board: Dobler & Mudge, at \$75.00 per ton; Republic Bag and Paper Company, at \$75.20; Philip Rudolph & Son Company, at \$92.05; Kerr Paper Mill Company, at \$90.00; R. P. Andrews Paper Company, \$94.00; Denison Pratt Paper Company, \$101.00; The Whitaker Paper Company, \$95.00, and Mathers-Lamm Paper Company, \$98.00.

20,000 17 x 11¼ x 11¼" Fiber Containers: Rochester Folding Box Company, at \$102.95 per M.; Consolidated Paper Company, \$87.25; American Paper Products Company, \$118.00; A. Geo. Schulz Company, \$135.00; The American Paper & W. W. Company, \$126.00; The Pa Pro Company, \$108.00; Ohio Boxboard Company, \$85.10; The Baltimore Paper Box Company, \$108.00; Sefton Manufacturing Corporation, \$85.80; Bird & Son, Inc., \$91.00; Kieckhofer Container Company, \$101.73; The Hinde & Dauch Paper Company, \$107.45; Whitaker Paper Company, \$128.83.

The following bids will be opened on May 26: 1,350 lbs. (75 reams) 16 x 21—18, No. 20 Fine White Glazed Bond Paper and 305 lbs. (10 reams) 17 x 28—30½, No. 24, Blue Safety Writing Paper.

The R. P. Andrews Paper Company has been awarded the contract by the Purchasing Officer of the Government Printing Office for furnishing 10,938 pounds (125 reams) of 21 x 32½—87½. No. 48 salmon commercial ledger paper at \$1.88 per pound, bids for which were opened on May 17.

Dobler and Mudge have been awarded the contract by the Purchasing Officer of the Government Printing Office for furnishing 4,800 pounds (100 reams) of 20 x 25—48 of dark blue smooth cover paper at \$.087 per pound, bids for which were opened on May 12.

The same firm will also furnish 13,000 pounds (6,400 sheets) of various sizes best quality binders board at 3¼ cents per pound, bids for which were opened on May 15. The Purchasing Officer has received the following bids:

10,938 lbs. salmon commercial ledger paper, 21 x 32½—87½: American Writing Paper Company, \$1.894 per pound; Whiting Patterson Company, Inc., \$.2063; Old Dominion Paper Company, \$.206; Mathers-Lamm Paper Company, \$.199; R. P. Andrews Paper Company, \$.188; Dobler & Mudge, \$.20.

PHILADELPHIA ORDERS MORE LIBERAL

(Continued from page 30)

Harold Treene who was formerly Philadelphia representative of the Eddy Paper Company, Three Rivers, Michigan, is now in charge of the local sales office of the Fort Wayne Corrugated Paper Company with offices in Room 1023, Widener Building. The Eddy Paper Company, Philadelphia branch has been discontinued.

J. M. S. Ewing formerly with the Howland Pulp and Paper Company, the Bayless Manufacturing Company, and the Huff Paper

Company, is now connected with the Cherry River Paper Company, as assistant to the Philadelphia manager, C. W. Collins. He will cover eastern and southern states with the line of wrapping and specialty papers made by the Cherry River Company. The main offices of the Cherry River Company are located in Scranton, but Philadelphia branch in the Pennsylvania Building is the sales distribution office.

G. A. Bisler and his son, G. A. Bisler, Jr., of the G. A. Bisler Paper Box Company have just returned from a three months' trip through Europe and the Orient. The itinerary included a trip to Funchow, Madeira, Granada and Gibraltar, Spain, Algeria, Constantinople, Jerusalem, Egypt from Cairo up the Nile, Athens, Naples, France, Germany and England.

The home of Walter B. McIlvain, Jr., one of the proprietors of the Frank P. Miller Paper Company, East Dowingtown, Pa., and located on Broughton Lane Villa Nova, was damaged by fire during the week to the extent of more than \$10,000. Neighbors dragged valuable furniture from the home.

Alfred M. Collins, head of the A. M. Collins Manufacturing Company, was elected president of the Geographical Society of Philadelphia at its meeting recently in Witherspoon Hall, J. M. Buzzard of the Collins Company was a speaker at the last meeting of the Philadelphia Credit Men's Association.

E. N. Renner, Philadelphia representative of Charles W. Williams & Co., New York, has recovered from a broken wrist sustained recently in an automobile accident and is back at his desk.

Paper Mill Map of Eastern U. S. and Canada

The map of the paper and board mills of the Eastern United States and Canada with shipping locations and daily production capacity printed on pages 18 and 19 of this issue of the PAPER TRADE JOURNAL is presented through the courtesy of C. H. Tiffany, traffic manager of the New England Paper and Pulp Traffic Association. It is approximately one-third of the original. It is based on *Lockwood's Directory of the Paper Trade for 1921* and special investigations of the association.

In 1915 the association filed an exhibit in a hearing, largely attended by traffic representatives of paper mills, before the Interstate Commerce Commission in New York City a map similar to the one just published. It was hung on the wall of the hearing room in the New York Custom House, was constantly referred to during the hearing and many requests for copies were received from many of the paper and railroad representatives who were present. Additional copies were made and distributed without charge to the member mills of the association except a nominal charge to others to cover the cost of reproduction and mailing.

Subsequently the issue was exhausted and as much of the information was out of date the association decided, in response to numerous requests for copies, to redraft and republish it. In order to make the map as near letter-perfect as possible a circular letter was addressed to every primary producer of paper and boards asking them to show the production capacity of their mill as of December 31, 1921, so as to include any enlargement or change in facilities that might be under consideration. Replies were received from such a large percentage of mills that it is believed the information contained on our map is as correct as is possible to have it.

Following past custom the map has been distributed without charge to member mills of the association and practically all of them will frame it under glass. When placed in a dark frame it is very attractive.

The association is also making distribution to other interested parties at a charge of \$7.50 per copy, which covers the cost of drafting, publishing and mailing.

**Progress
and
Paper
Making**



No. 2

From Hastings to Fulton's Steamboat

Men were making paper before the Battle of Hastings was fought. Men were making considerably more paper seven hundred years later when Fulton built his first steamboat. Yet in the intervening centuries the method had changed but little. Paper was still made sheet by sheet.

But even with the handicap of this slow method, year after year the production of paper had increased. Printing was invented. Historians have wondered why this invention did not come centuries sooner. Is it not obvious that printing had to wait until there was a sufficient quantity of material on which to print?

And printing changed the history of the world, not because it was beautiful not because it was cheaper than the work of the scribe, but because printing made it possible to multiply a message any number of times and get that message to any number of people simultaneously. Paper meant printing and printing meant knowledge, enlightenment and power.

HAMMERMILL PAPER CO., Erie, Pa.

NEW YORK OFFICE: 291 BROADWAY

Recent Incorporations

H. F. FORTNER MANUFACTURING Co., Delaware, tools for paper, \$100,000; H. F. Fortner, Harry S. Milbourn, M. A. Fortner, Clinton, Ind. (Delaware Registration Trust Co.)

PULL FLAP ENVELOPE CORPORATION, Philadelphia, manufacture, capital, \$3,100,000. Delaware Corporation Guarantee and Trust Co.

STANTON PAPER BOX FACTORY, Oneida, New York. Capital \$10,000; Incorporators, A. M. Stanton, J. A. Hobday, F. Gregory. Attorneys, Coville & Santry, Oneida.

THE DICKENS COMPANY, Boston, Massachusetts, paper. Capital, \$100,000; Incorporators, Henry Gorshel, Henry J. Ziolkowski and William C. Pree, all of Boston.

Paper Industry and Foreign Competition

SPRINGFIELD, Mass., May 23, 1921.—“The failure to settle the big problem of the tariff is preventing a general return of prosperity, and particularly is this the case in the paper industry,” said Dr. Hugh P. Baker, executive secretary of the American Paper and Pulp Association, addressing the Connecticut Valley division of the Technical Association of the Pulp and Paper Industry this evening.

“No one is willing to make contracts for any kind of manufactured material for any considerable period in advance with an uncertainty as to what may happen in the matter of the tariff.

“All that the paper industry asks in the way of a tariff is sufficient protection to give the American manufacturer an even chance of competition in the American market with the foreign manufacturer.

“The fight that is being made against the tariff, however, is evidenced by the fact that so recently as last night the American Association of Importers found it necessary to deny that they had expended \$1,000,000 to defeat American valuation, a policy needed by American manufacturers to meet the depreciated currency and cheap labor of foreign countries.

“The paper industry is feeling a general improvement in business but is also feeling the results of the uncertainty over what Congress may do on the tariff as well. At this time the fine papers in which Massachusetts mills specialize are in good demand, and the mills are running well toward normal in production. The wrapping paper mills now have orders to keep them running to normal capacity. The over-capacity of the book paper mills is delaying the return to prosperity of this division of the industry.

“All in all, however, the conditions are much more favorable than was the case a few months ago.”

News of the Chicago Trade

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, May 22, 1922.—Buying of paper keeps up fairly well according to a number of members of the trade. Advertising is being increased by some of the larger business establishments of the city and surrounding territory and this has brought on a demand which while not real heavy, has increased the immediate turnover somewhat.

“Are you a Hit-or-Misser?” is the question presented to paper buyers through the Chicago daily press by the S. D. Warren Company of Boston. The advertising is primarily to acquaint the paper buyers of the city with the fact that this company has published a series of booklets entitled, “Making It Easy to Plan Printing.” These booklets are to be had from the company and advocate the use of the right kind of paper to acquire the right results from printing. The Chicago Paper Company, 801 South Wells street, and the Paper Mills Company, 517 South Wells street, Chicago, are shown as the local distributors.

The Excelsior Paper Company is the name of a recently incorporated company which has opened offices at room 911, 11 South

La Salle street, Chicago. L. D. Green, S. Alexander and D. Rubin are the incorporators. The company has a capital stock of \$150,000 and will handle paper wooden ware and other commodities.

The Service Paper Bag Company has recently been organized by Morris Raginsky, C. W. Vacca and O. M. Nudelman to manufacture and deal in paper bags, articles, etc., with a capital of \$18,000. The corporation has located at 815 West 47th street, Chicago.

National Safety Congress Editors' Program

At the request of A. Ellis Frampton, Editor of *The Hammermill Bond* and chairman of the 1922 National Safety Council Editors' Program, an appeal is made to the editors of Paper Mill Employees' Publications to support the Editors' Program in connection with the National Safety Congress at Detroit the last week of August. For the first time in four years the Plant Editors did not have a meeting with the National Safety Congress in 1921. This was due to very unfavorable business conditions, but the skies are somewhat rosier this year and Industrial Editors are called upon to face a field beset with problems in connection with changed business conditions.

The Editors will conduct two meetings, one a round table luncheon on “Safety Through The Plant Magazine,” the other, a session on Publication Problems of particular interest to editors. These will be held either August 29, or August 30—the exact date to be announced later.

All paper industry editors are urged to attend if possible, as the discussions are stimulative, and the editor is sure to return to his work more efficient and with many new, usable ideas.

The employees magazines of the paper industry have come through the period of depression better than those in many other industries, and with a return of prosperity their editors will have opportunity to continue their important work along the lines which may have been partially interrupted by the unfavorable business conditions of the past two years.

Some Improvement in Wisconsin

[FROM OUR REGULAR CORRESPONDENT.]

APPLETON, Wis., May 22, 1922.—There has been no material change in the business situation in the industry here in the last few weeks. Most of the manufacturers report a slight and steady improvement in some lines but it is nothing sensational. They are confident, however, that business is “looking up” and manufacture at a profit will be possible before many months.

There has been a very material increase in advertising in the Middle West over the same period last year, newspapers report. This is taken as a healthy condition. Merchants say that purchases are increasing, especially among salaried people. For a long time there has been something like a “buyers' strike” among these people but they are beginning to buy now.

This increase in advertising is increasing the demand for news-print and it would not be surprising if there would be a stiffening of prices soon, it is said.

To Go on Black River Regulating Board

Harry S. Lewis, president and general manager of the J. P. Lewis Company, Inc., of Beaver Falls, first vice president of Lewis Slocum & Le Fevre Company, Inc., and a stockholder in several other concerns in this section of the State, is to be appointed to the Board of the Black River Regulating District by Governor N. L. Miller to fill the vacancy caused by the death of James A. Outterson. Information was received here today that Governor Miller had decided upon Mr. Lewis for the vacancy and would announce the appointment at once.

Mr. Lewis is one of the largest owners of power on the Beaver River and resides in Lewis County, where the Stillwater reservoir and the headwaters of the Black River are found.



REG. U. S. PAT. OFF. **Vortex**

Drinking Cups

The Cone Shaped Pioneer

VORTEX Drinking Cups, clean and sanitary, protect the user from infections often traceable to the common drinking cup. They afford, in addition, another protection. They safeguard the user against any legal action which may arise from the use of a cup infringing on our fully protected patents.

Vortex, the pioneer cone shaped paper cup, has been in use for years. It has won its leadership not alone because of its unique design, but because of its economy and sturdiness, which cannot be duplicated in a flimsy, cheaply made cup.

This unusual strength is due to the firm, heavy quality of the paper; its reinforcement, on the outside, with paraffin wax; and its extra reinforcement about the bottom. It is substantial and rigid; needs no holder.

Vortex Cups are needed in every office, factory, theatre, club, bank, hotel and store. They are manufactured in such enormous quantities that they can be sold, with *excellent profit*, at a *very low price*. Distributors are invited to write for prices and terms.

Vortex Drinking Cups have these special features:

- Made of clean, strong, pure white paper.
- Carefully sterilized in manufacture. Meet requirements of Pure Food and other existing Laws.
- Reinforced on the outside with pure, fully refined paraffin wax. Strong and rigid.
- Have no wax on inside. Cups are tasteless and odorless.
- No glue is used in their manufacture. Sealed, under pressure, with paraffin.
- Spiral wrapping reinforces cup.
- Extra reinforcement about bottom of cups prevents cups sticking together.
- Will not absorb moisture or leak when left for an indefinite period.
- Convenient in shape; no holders needed.
- Packed in dustproof cardboard tubes; and shipped in sealed cartons.
- Nested together and dispensed in inverted fashion; inside untouched by hands.

THE VORTEX MFG. CO., 421-431 North Western Avenue, Chicago

Trade Mark Department

CONDUCTED BY NATIONAL TRADE-MARK CO., WASHINGTON, D. C.

The following are trade-mark applications pertinent to paper and pulp field pending in the United States Patent Office which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade-Mark Company, Barrister building, Washington, D. C., or Bush building, 130 West Forty-second street, New York, trade-mark specialists.

As an additional service feature to its readers, the PAPER TRADE JOURNAL gladly offers to them an advance search free of charge, on any mark they may contemplate adopting or registering.

SEMINOLE, on panel across center of two-rim circle within fancy rectangle. No. 159,738. Jos. Weil & Sons, Inc., Chicago. For Toilet Paper.

CLEARGRAIN—No. 157,953. Powers Paper Company, Springfield, Mass. For Writing Paper, Printing Paper, Writing Tablets, Paperies, Correspondence Envelopes, Typewriter Paper, and Wedding Stationery, Namely, Cards for Invitation, Announcement Cards, and Special-Finished Paper and Envelopes Either in Box or Bulk Form.

IVORY—No. 153,304. Kee Lox Manufacturing Company, Rochester, N. Y. For Carbon Paper.

SILVER—No. 153,301. Kee Lox Manufacturing Company, Rochester, N. Y. For Carbon Paper and Typewriter Ribbons.

ELITE—No. 153,298. Kee Lox Manufacturing Company, Rochester, N. Y. For Carbon Paper.

GYPSY—No. 153,295. Kee Lox Manufacturing Company, Rochester, N. Y. For Carbon Paper.

WAXTWEEL—No. 159,640. Waxtweel Paper Company, Grand Rapids, Mich. For Wrapping Paper.

CONQUEST—No. 160,766. Louisville Paper Company, Louisville, Ky. For Bond Paper.

S. I. S. in white letters within black diamond. No. 160,991. The Barrett Company, N. Y. city. For Building Paper.

JONES GUMMED PAPER—No. 153,939. Samuel Jones & Co., Newark, N. J. For Gummed Paper—that is, paper coated on one side with mucilage or gum and used for labels.

FLINT—No. 153,294. Kee Lox Manufacturing Company, Rochester, N. Y. For Carbon Paper.

PLATINUM—No. 160,352. Import Paper Company, Chicago. For Writing Paper.

IMPACO—No. 160,353. Import Paper Company, Chicago. For Writing Paper.

Paper Demand in China

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., May 24, 1922.—American Consul Fuller at Tientsin, China, has sent the following report to the Department of Commerce relative to the market for paper in his district:

The class of imported paper most widely used in the Tientsin consular district is a low grade of printing paper, which is sold to the Chinese, and on which they print their newspapers, bills, etc. In Tientsin there are four foreign newspapers printed in English, one in French, and one in Japanese. All of these papers do job work. In addition to the foreign newspapers there are also about 20 Chinese newspapers printed in Tientsin. In Peking there are 3 foreign and about 15 Chinese newspapers. These newspapers are printed mainly on paper imported either from Japan or Europe. The European paper comes chiefly from Sweden, Norway, and Denmark, and is brought in through British houses for local importers. These importers sell to the Chinese paper dealers, who distribute the paper in the interior. This paper is imported in bales of 12 reams (500 sheets per ream), the most common size being 31 by 43 inches. The bale is wrapped in canvas and battened at the ends. The price of this paper varies according to quality and finish.

Foreign-made wrapping paper is much used, but to a smaller degree than native wrapping paper. There is also a fair demand for European and American cover papers.

The sales of writing paper are confined almost exclusively to the foreign communities of Tientsin and Peking, and the demand for this paper is largely supplied through British houses, whose representatives call on the foreign and Chinese stationery shops at regular intervals.

There is a good trade in strawboard but it is supplied almost entirely from Japan.

American paper of all kinds is most popular on account of its superior quality, but, according to a leading American importer of paper, the cost is so high that it can not compete with the Japanese product. Users of paper in large quantities, such as newspapers and general printing concerns, also state that, much as they would like the American article, the price is too high in comparison with the Japanese, and that, considering the prices they have to meet, it is practically impossible to buy American paper, except the better grades.

The present low rate and constant fluctuations of silver exchange operate as a great handicap to American trade with China. As the local currency is on a silver basis, its value in gold fluctuates hourly. In January, 1920, the local dollar was worth \$1.08½. United States currency, so that it took only 92 cents local currency to buy one United States dollar. Today it takes approximately \$1.80 local currency to buy one United States dollar.

Imports of foreign-made paper into Tientsin since 1917, in United States currency, have been as follows: In 1917, \$598,120; 1918, \$1,493,737; 1919, \$2,295,602; 1920, \$1,910,675; and 1921, \$2,276,172.

Rate Reduction Decision Handed Down

[BY TELEGRAPH TO THE PAPER TRADE JOURNAL.]

WASHINGTON, D. C., May 24, 1922.—The Interstate Commerce Commission today handed down its general rate reduction decision in which it says in part "freight rates and charges found unreasonable on and after July 1, 1922, to the extent that they may exceed the rates in effect August 25, 1920, by specified percentages."

Regarding paper and paper products the commission says:

"Manufacturers of news print and other kinds of paper, box board, and paper board, urged reductions in rates on these commodities. At the beginning of 1922 paper mills were being operated at about sixty per cent of capacity. The prices of paper had declined to approximately fifty per cent over those obtaining just prior to 1916. At the time the contract price of news print paper was about \$40 per ton; in 1920-21 it reached \$130 per ton, and by February, 1922, had declined to \$70 per ton.

"Rate reductions were urged by paper manufacturers not only on the finished product but on raw materials used in the manufacture of paper, such as pulp wood, coal, clay, sulphur, resin, and tallow. Between three and four tons of these materials are required to produce one ton of news print paper. Rates on paper from New England were especially assailed on the ground that relatively lower rates were in effect from western mills. The New England shippers urged us to prescribe rates on news print not exceeding eighty per cent of the rates on book, printing, and wrapping paper, with sixth class rates as maxima, and further urged that reductions should be made from New England to Chicago and western points, even though reductions were not made from the western mills. They also contended that, if reductions are to be general the rates from New England to points in the eastern group should be lowered to a greater extent than rates from western mills. The evidence does not warrant fixation of the proper rate relationship between these competing mills."

Settle Strike at International Falls

[FROM OUR REGULAR CORRESPONDENT.]

INTERNATIONAL FALLS, Minn., May 19, 1922.—One thousand men returned to work to-day in the paper mills here and at Fort Francis, Ont. A strike called Monday was settled late yesterday.

**GROUND WOOD
CHEMICAL PULPS**

PERKINS-GOODWIN CO.
NEW YORK

PAPER

ALFRED LEEDS, President
KARL BECKER, Vice President

ERNEST R. COLLINS, Secretary
EDWARD M. MILLER, Treasurer

Becker Paper Corporation

350 Madison Ave., New York, N.Y.

317 Main Street, Springfield, Mass., Branch Office for New England States

Dealers in All Grades of Paper

SPECIALISTS IN

**BOOK PAPER, GLASSINE and EMBOSSED
GLASSINE PAPERS**

Exclusive Distributors for

**WESTFIELD RIVER PAPER COMPANY
RUSSELL, MASS.**

New York Trade Jottings

George Bearce, of the News Print Service Bureau, is visiting news print mills in New York State.

* * *

George Williamson, President of the Technical Association of the Paper Industry, was in attendance at the Executive Committee meeting of the American Paper and Pulp Association last Friday.

* * *

The Republic Bag Company, 200 Fifth Avenue, New York, has removed the site of its factory to 415-423 Greenpoint avenue, Brooklyn, where it is now in operation. The factory telephone number is Greenpoint 3980.

* * *

John Kipke, Sales Engineer of the S. K. F. Company, 165 Broadway, New York, is planning to attend the joint convention of the Superintendent's Association and the Cost Association, in Kalamazoo, Mich., June 1, 2 and 3.

* * *

The Texas Gulf Sulphur Company, 41 East 42nd street, New York, has increased its quarterly dividend on capital stock from fifty cents to one dollar per share, payable June 15 to stock of record June 1. This dividend places the stock on a \$4 per annum basis.

* * *

R. S. Kellogg, secretary of the News Print Service Bureau, will leave Saturday afternoon, May 27, for a combined vacation trip and tour of the Lake State mills. He will be accompanied by his family, and will camp near Wausau, Wis. Mr. Kellogg expects to reach Chicago about June 3.

* * *

Thomas J. Burke, Secretary-Treasurer of the Cost Association of the Paper Industry, will attend a dinner-meeting of the Connecticut Valley Division of the Association to be held at the Non-tuck Club, Holyoke, Mass., Monday, May 29. E. H. Naylor, Secretary of the Fine Paper Association, will deliver an address on Association work.

* * *

Col. W. E. Haskell, Vice-president of the International Paper Company, informed a representative of the PAPER TRADE JOURNAL that the company signed a lease late Monday afternoon, May 22, for the 17th and 18th floors of the Pershing Square Building, now under construction, to be occupied May 1, 1923. Since the establishment of the company in 1898, it has been located at 30 Broad street, New York.

* * *

The Trunk Line Auxiliary Committee has arranged for a public hearing at Room 401, 143 Liberty street, New York, on Thursday, May 25, at 3.00 p. m. for a shipper's proposal to establish a rate of 26½ cents per 100 pounds, min. wt. 24,000 pounds, subject to Rule 34 on waste paper and rags from New York, Philadelphia and Baltimore to Buffalo and points to which Buffalo rates are published. All other commodity rates on the above named articles to the same destinations to be cancelled.

* * *

L. M. Alexander, of Port Edwards, Wis., has been in New York a few days, having attended the meeting of the National Chamber of Commerce at Washington last week. Mr. Alexander is the National Councillor representing the American Paper and Pulp Association. He gave a report of the convention at the Executive Committee meeting held Friday morning at the offices of the Association, 18 East 41st Street, New York City. The purpose of the meeting was to lay out plans for the coming year.

Buy Mill at Scotch Plains, N. J.

PLAINFIELD, N. J., May 22, 1922.—The paper factory, formerly known as the Seely Mills at Scotch Plains, and more recently known as the Twin Falls Paper Mills and the Pulp and Fibre Products Company, Inc., has been sold to David Robinson and Max Rosenthal, who are to continue the operations on a more extensive scale. They are at present replacing the old machinery with more modern equipment and installing boilers to enable them to develop five hundred horse power, and are also installing large beaters and other machinery.

This plant manufactures binder board, but the new owners are expecting to expand the more modern paper manufacturing.

The plant is ideally situated, in that there are two large ponds on the fifty-six acre tract which enables the owners to operate their plant by water power.

The new owners expect to develop the large tract of land and build modern country bungalows on what is known as the Valley road to Summit. D. Robinson will eventually build himself a modern and up-to-date summer residence there.

The new owners of the property have been assured of large orders by several paper brokerage firms in New York City. They have a considerable number of orders. At present there are employed upward of twenty-six to thirty-eight men on a single shift. With a double shift this number will necessarily be increased.

The new owners have incorporated under the style of the Twin Falls Binder Board Mills with capital stock placed at \$125,000.

Technical Section Appreciated

MITTINEAGUE, Mass., May 17, 1922.

Editor PAPER TRADE JOURNAL:

Please let me commend the PAPER TRADE JOURNAL through you for including in its editorial columns in the issue of May 11, 1922, the article entitled, "Drying of Paper."

It seems to me that this is an excellent way of presenting to the paper industry at large one of the most important and fundamental subjects of manufacturing. It emphasizes more than in any other way the importance of the matter, and the work which has been undertaken to improve the present practices.

Personally, I believe that the section of the PAPER TRADE JOURNAL, conducted in co-operation with the Technical Association, is proving a great success. Many favorable comments have come to my attention.

The spirit of co-operation thus far shown is highly appreciated.

Very truly yours,

G. E. WILLIAMSON, President Technical Association of the Pulp and Paper Industry.

E. H. Kellogg Leaves Paper Laboratory

[FROM OUR REGULAR CORRESPONDENT.]

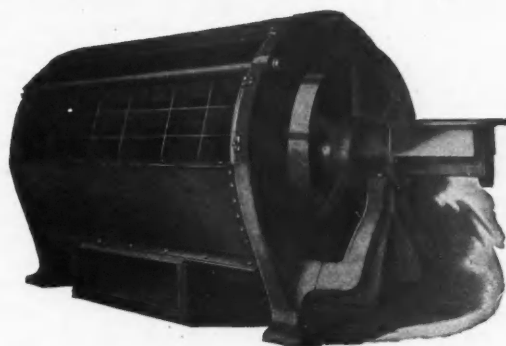
WASHINGTON, D. C., May 24, 1922.—Edward H. Kellogg, brother of R. S. Kellogg, secretary of the News Print Service Bureau, New York, who has been connected with the Paper Laboratory of the Bureau of Standards since November 1, 1921, has just severed his connection with the laboratory to take up new work with the Mine Safety Appliance Company of Pittsburgh as assistant sales manager.

Mr. Kellogg has been in charge of the investigation of American seed flax for paper making and is reported to have succeeded in making a fairly good sheet of paper both bleached and unbleached. The main drawback to the process was the high chemical consumption and the low yield. Small scale pulping and paper making tests were conducted at the bureau, followed by a semi-commercial pulping test in co-operation with a pulp mill. When these tests are completed, a pamphlet will probably be published by the paper division of the bureau.

"IMPCO" TAILING SCREENER

FOR SCREENING GROUND WOOD TAILINGS

Very Low
Power
and
Upkeep Expense



Delivers
Rejections Free
from Good
Stock

ANOTHER UNIT OF OUR CLOSED SYSTEM FOR PULP SCREENING
WRITE FOR FULL DETAILS CORRESPONDENCE A PLEASURE

IMPROVED PAPER MACHINERY CO. **Nashua, N. H.**
SHERBROOKE MACHINERY CO., LIMITED, SHERBROOKE, CANADA

WHALEN SULPHITE PULPS

Made from the SITKA SPRUCE of BRITISH COLUMBIA
Noted for Fibre, Color and Strength

**SNOWWHITE
BLEACHED
SULPHITE**

**GLACIER
EASY BLEACHING
SULPHITE**

**SWAN
STRONG
SULPHITE**

As exclusive Sales Agents for all of the products of the WHALEN PULP & PAPER MILLS, LTD., in addition to stocks at the mills, we will carry large stocks of the above well-known brands in New York, thus insuring prompt deliveries.

Your inquiries addressed to any of our offices will bring prompt quotations by wire.

CANADIAN ROBERT DOLLAR CO., Limited
VANCOUVER, B. C.

U. S. ADDRESSES

Robert Dollar Co., Robert Dollar Bldg., San Francisco.
Robert Dollar Co., 15 Moore Street, New York, N. Y.
Robert Dollar Co., Harris Trust Bldg., Chicago, Ill.
Robert Dollar Co., L. C. Smith Bldg., Seattle, Wash.

FOREIGN OFFICES

Robert Dollar Co.,
Shanghai, Hong Kong,
Hankow, Tientsin,
Ichang, Chungking, and
Pekin, China; Kobe,
Japan; Calcutta, India;
Manila, P. I.; Singapore,
S. S.

The Austrian Paper Industry

WASHINGTON, D. C., May 22, 1922.—American Trade Commissioner, Upson, at Vienna, has sent out the following report to the Department of Commerce on the Austrian paper industry:

"The paper industry, which played an important role as an export industry in the former Austro-Hungarian monarchy, has a still greater importance for the Republic of Austria, since almost two-thirds of the factories of old Austria are within the boundaries of the present country. The following table shows the exact ratios of present to former production in the Austrian paper industry:

Items	Production capacity in of the industry in —		Ratio of present to former capacity Per cent
	Old Austria Tons	Present Austria Tons	
Paper	360,534	188,426	52
Wood pulp:			
Chemical	194,253	121,364	63
Mechanical	113,863	75,143	66
Board	113,243	70,045	62

"The 188,426 tons of paper include 29,000 tons of wrapping paper, 1,600 tons of tissue and cigarette paper, and 47,000 tons of news print paper in rolls. The industry is working to about 70 per cent of its pre-war capacity at the present time and employs about 17,000 workmen.

"The consumption of present Austria is, of course, materially less than that of pre-war Austria-Hungary. Only about one-third of the output of paper and allied products can now be marketed within the country. Hence, large quantities must be exported. Most of the exports go to Italy, the Succession States, and Switzerland. They amounted in the first half of 1921 to 11,753 tons of pulp, 10,641 tons of board, 21,036 tons of paper, and 3,295 tons of paper articles.

"Only certain specialties such as copying paper and wall paper are imported for consumption. A large quantity of cigarette paper is imported from Czechoslovakia to be re-exported in a finished state.

"Wood, the principal raw material of the paper industry, is found in abundance in Austria. No pulpwood has to be imported. The factories must import coal, however, for wood is not satisfactory as a fuel.

"The following wholesale prices were fixed by the association on February 11, 1922, and are now (March 6, 1922) in force: Rag paper for printing or drawing, sized, or semisized, 975 crowns per kilo; ordinary writing paper, glazed, sized, over 56 grams per square meter, 520 crowns per kilo; brown wrapping paper, 60 grams or over, semisized, 413 crowns per kilo; cigarette paper (20 per cent rags, 80 per cent cellulose), 19-20 grams per square meter, in sheets, 2,880 crowns per kilo; ordinary tissue paper, 18 grams per square meter (50 per cent cellulose, 50 per cent wood pulp), 1,485 crowns per kilo. (The exchange value of the Austrian crown in New York on May 2 was \$0.000125.)"

National Salesmen to Meet

The National Council of Traveling Salesmen's Association, whose headquarters are at the Hotel Claridge, Broadway and 42nd street, New York, will hold its first annual convention at Cincinnati, Ohio, October 9-11. All traveling salesmen's organizations throughout the United States are invited to send a delegation to the National convention.

Herbert L. Schamberg writes of the work of the association:

"Briefly, the activities of this association, since its inception have been along lines of national welfare. The things for which we have labored have been general and universal.

"We refer to our past and present endeavors toward securing the issuance of an Interchangeable Mileage Book at wholesale rates for which we caused to be introduced a bill, since passed by the U. S. Senate, and now being considered by the Interstate and Foreign Commerce Committee of the House of Representatives.

"We will presently urge the passage of bills introduced into both houses, providing for the elimination of the Pullman Surcharge.

"We secured a new interpretation of the Income Tax Ruling, as affecting traveling salesmen, which in its result, now permits the deduction of hotel charges, meals, and other sundry expenses incident to business travel.

"Our support of the sales tax in opposition to existing 'nuisance taxes' and levies on excess profits have met with some measure of success and we believe it is destined to go still further.

"We secured the absentee voting privilege in New York State and assisted toward the passage of similar legislation in New Jersey.

"Our Hotel Committee is co-operating through the secretaries of 64 hotel associations with all leading hotels toward a moderated charge for rooms and service, just as fast as changing conditions warrant.

"The benefits from the things we achieve are not limited to a class, indeed, since they affect instantly the seller of merchandise, they affect the consumer and en route, the middleman.

"The National convention is devised with a view of a closer alliance with existing bodies, having similar aims as ours. Also the formation of new salesmen's organizations which may become attached to the National Council, with a unity of purpose, freely reinforced from every strategic point. With the above accomplished, it will be immeasurably easier for business legitimately to resist the constant inroads of the pork barrel cooper and the political spell-binder."

Middle States Wrapping Paper Men Meet

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, May 22, 1922.—At the annual meeting of the Middle States Wrapping Paper Association held at West Baden, Ind., May 11 and 12, the following officers were elected to serve for the ensuing year:

President: F. T. Jamison; first vice-president: H. J. Merickel; second vice-president: S. L. Schwarz; third vice-president: R. Roesch; treasurer: W. W. Thompson. Walter Seinsheimer was elected national committee man.

A resolution was passed at this meeting which read in part: "Resolved, That this association go on record as being entirely and absolutely opposed to the passage of Senate Bill Number 3385 as introduced by Mr. Edge of New Jersey."

One of the faults the association found with the proposed bill is that it would place trade associations under Federal Trade Commission control.

There were a number of other interesting matters brought up before this body, one of them being a discussion on cost of doing business when the members were advised to take small orders with a profit attached to them or leave them alone, and permit someone else to accept the loss. Orders of less than \$10 were generally considered as very small.

The motion picture, "The Romance of Paper" was a feature of the meeting.

Southern Paper Co. to Start July 1

[FROM OUR REGULAR CORRESPONDENT]

CHATTANOOGA, Tenn., May 22, 1922.—The new plant of the Southern Cotton and Paper Company will begin operations July 1, according to Mercer Reynolds, president of the company.

Practically all of the equipment has been installed, with the exception of the huge paper machine. Ninety per cent of the machine is in, and 50 per cent has already been installed. All of the buildings contemplated by the company for the present have been completed.

Mr. Reynolds stated that when in operation the company will employ about seventy-five men.

Quality - it means more than price



**"HAFSLUND BEAR" } Bleached
and "FORSHAGA" } Sulphite**

**"KLARAFORS" } Easy Bleaching
Sulphite**

STRONG UNBLEACHED SULPHITE

**"HURUM" and "BAMBLE"
Extra Strong Kraft; Bleached and Bleachable Sulphate**

**"EDSVALLA" and "DEJEFORS"
(50% Moist) (Dry)
White Spruce Ground Wood**

Tonnages available on dock for prompt shipment

**THE
BORREGAARD COMPANY**

Inc.

200 1/2 FIFTH AVENUE,

NEW YORK CITY

OFFICE **HOSPITAL** **BANK**

HOTEL **SHOP**

Sell These Prospects

who are waiting for you to take their order for \$5 dispensers and cups—and then will regularly send in repeat orders for Burt's Drinking Cups.

BURT'S DRINKING CUPS ARE:
Lowest in cost. Conical. Always open. Without bottom to fall out or

set aside on. Withstanding hot drinks. Without wax to affect taste. Trebly reinforced. Without waste in dispensing.

LOWEST COST PER DAY TO KEEP SICKNESS AWAY
and cut down sick pay or maintenance expense in factory, office or institution.

F. N. BURT COMPANY, Ltd.

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Paper Cup Division

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Buffalo, N. Y.

WOOD PULP

We solicit your inquiries for

Bleached Sulphite
Unbleached Sulphite
Bleached Soda Pulp
Groundwood
Kraft

THE MEAD SALES CO.

111 West Washington St., Chicago, Ill. PULP DEPT. Callahan Bank Bldg., Dayton, Ohio.



An Interesting Story

is told of an heroic little Hollander, who, to save his country from flood, plugged a small leak in the dike with his clenched fist. His act of plugging the leak, though small, was one of tremendous significance; and the principle applies to-day as forcefully as it did then. The little things, even though apparently insignificant, are really of vast importance.

It is one of these inconspicuous, yet important little things that instantly distinguishes Columbian from all ordinary rope—and that is the red, white and blue *Tape-Marker*, bearing the words "Guaranteed Rope." These significant words are certified by the signature "Columbian Rope Company" also appearing thereon.

This *Tape-Marker* can be found in each and every yard, foot and inch of all Columbian *Tape-Marked* Pure Manila Rope, as it is just as long as the rope itself and is one continuous piece from end to end. It is your Guarantee.

Write for a copy of the folder "How Columbian *Tape-Marked* Pure Manila Rope is Made."

Columbian Rope Company

373-90 Genesee Street

Auburn, "The Cordage City," N. Y.

Branches: Boston New York Chicago Houston Baltimore

BY INVITATION
MEMBER OF



NEW YORK, U.S.A.



Editorial

Vol. LXXIV New York, May 25, 1922 No. 21
FIFTIETH YEAR

Paper Demand Increasing

Several very encouraging steps in the right direction have been taken during the past week to alleviate market conditions. One of the most important of these was the meeting of seven railroad executives and the Interstate Commerce Commission for the promulgation of plans for lowered rail rates.

"It is believed," says the *New York Times* of May 23, "that the committee which has been appointed to confer with the Interstate Commerce Commission will be able to work out a solution which will leave the income the roads are now enjoying practically intact and at the same time give them the advantage of added recovery in trade. This would mean, of course, a concurrent move on the part of the Labor Board to cut wage costs to the extent that rates were reduced."

Under the same date the *New York Tribune* further reflects the general feeling of optimism which is held regarding market conditions in the country when it quotes Francis H. Sisson, vice-president of the Guaranty Trust Company, as follows: "The business outlook in this country is decidedly more promising than at the beginning of the year. In addition to the increasingly favorable position of the banks as a whole an expanding volume of production, greater than can be accounted for by seasonable variations, has been sustained for some months. This industrial progress, following, as it does, a prolonged period of credit liquidation, has substantial basis for continuance."

Employment gains, according to statistics from the Department of Labor, amount to over 11 per cent in the iron and steel industry over April of last year; 34 per cent in the hosiery and underwear trade; nearly 15 per cent in the boots and shoes industry, and 13.7 per cent in the car building and repairing business.

With gestures being made for lower rail rates, an increasing volume of production, amelioration of the financial situation, general industrial progress, and pronounced relief for the unemployment situation, the light of day is beginning to shine again in the paper situation.

The general outlook is more encouraging than it has been in several years, and mills are kept busy. The increased demand has been brought about by increased newspaper advertising and larger circulations and the increase in the general consumption of practically all varieties of paper.

Studying the Business Cycle

The President's Conference on Unemployment last autumn suggested that an analytical study of the business cycle be prepared and an attempt be made to collect statistics and facts as to the methods for offsetting the bad results of those periods of expansion and depression which have been characteristic of our industries.

A committee on the Business Cycle was appointed by Secretary Hoover, consisting of Owen D. Young, chairman, Clarence Mott Woolley, Joseph H. Defrees, Matthew Woll, Miss Mary Van

Kleek, and Edward Eyre Hunt, secretary. Secretary Hunt believes that in this work, may lie an indication of the right road which industry is yet to take, if the ever-present threat of hard times and business depression is to be put permanently behind the manufacturers and the workers of the United States.

This committee is to report in the autumn. It will make certain definite recommendations. Some of them will deal with the part which the Government is to play and some of them with industry's share in the new business life of the nation. Statistics, of course, will have much to do with the solution of this problem of the business cycle, to which forehanded men are looking as a possible way out of their many troubles.

The Department of Commerce, through the Survey of Current Business, aims to give the careful American business man such statistics as will help him to make sound judgments on what is happening and what is to happen in the future. The committee on the Business Cycle expects to put down in words and figures the swing of the pendulum from high to low and back again.

Both are interested in furnishing such information as will enable the wide-awake business man to lop something off the boom times and put it on the slump periods.

More business men are studying the cycle than ever before. The experience of such men will shortly be made available to the many.

Four times in a single generation, there have been cycles of depression following booms,—in 1921, only now just beginning to disappear; a similar situation in 1914-15; again in 1908; and back in 1894-96. Well within thirty years, then, we have had four situations in which the unemployed have been reckoned by the millions and the idle capital by the billions.

How are we going to make more even these ups and downs,—that is, take something off the top of the good times and with it fill in the troughs of the depressions?

This is the question which the committee hopes in some measure to answer in its study of the cycle.

It plans to point the way to a knowledge of the long-range trend of business. It will make a study of the financial devices for controlling the business cycle; and the improvement of the statistical indices of employment and other business barometers.

These recurring periods of inflation and deflation in general business are intimately reflected in each individual business, and each individual manufacturer needs now to study his own business cycle. The organizations which have done this in the past have reaped prompt benefits. Some of these are the Dennison Manufacturing Company, the American Radiator Company, and the American Telephone and Telegraph Company, but a rapid survey of American business shows more than fifty other examples of intelligent anticipation of the business cycle by American business men.

It is worth noting that this intelligent anticipation results not merely in greater security on the job for the employees—and of course the President's Conference on Unemployment is interested in that—but also it has resulted in profits to the employer at a time when other people's business was in the doldrums.

There was a time when the country had a financial panic about every so often, precisely as it now has the business depression, but the Federal Reserve Banking system has taken away this threat of financial cataclysm, which used to accompany severe depressions.

Why not tackle the other features of the business cycle as well, making a competent study of them, at least? That is Secretary Hoover's position exactly, and he hopes to find an answer to his questions in the results of the study now being made by the Business Cycle Committee.

The work of making the survey of the business cycle has been undertaken by the National Bureau of Economic Research, Inc., 175 Ninth avenue, New York, of which Dr. Wesley C. Mitchell, the American authority on the business cycle, is director.

Purchasing Against Long Price List

At the annual meeting of the National Association of Purchasing Agents held in Rochester, the subject of the long list was, on May 19, debated by William J. Eynon, past president of the U. T. A., and Bryant Venable of the Whitaker Paper Company on the affirmative side and William C. Ridgway, secretary of the National Paper Trade Association on the negative side.

After this debate, the following resolution opposing the long list was adopted:

WHEREAS the New England Purchasing Agents Association passed the following resolution at its regular meeting, February 13, 1922:

WHEREAS the Long Price List would appear to tend to raise the price of printed matter to the consumer, and

WHEREAS such tendency is contrary to the spirit of the times

BE IT RESOLVED that the New England Purchasing Agents Association is opposed to the adoption of such a list, and

BE IT FURTHER RESOLVED, that a copy of this resolution be sent to the secretary of the Executive Committee of the National Association of Purchasing Agents, and

WHEREAS the Executive Committee of the National Association of Purchasing Agents in session February 20 and 21, 1922, passed the following resolution:

WHEREAS anything that tends to increase the cost of competition to the ultimate consumer is decidedly out of line with the spirit of the times, and

WHEREAS we, as purchasing agents, are endeavoring to curtail the cost of commodities and are therefore opposed to any increase in the price of materials purchased,

THEREFORE BE IT RESOLVED that we oppose the adoption of the so-called long or retail price list recommended by the United Typothetae of America as applying to the sale of printing paper for the reason that it tends to increase the cost of printing to the ultimate consumer, and

WHEREAS such action commends itself as in accordance with the best opinion of the purchasing profession,

BE IT RESOLVED that the National Association of Purchasing Agents in convention assembled at Rochester, N. Y., hereby ratify and adopt the above as the official opinion of the National Association of Purchasing Agents.

I. P. Not to Confer with Former Employees

Col. W. E. Haskell, vice-president of the International Paper Company, denied the rumor that Philip T. Dodge, president of the company, had requested to confer with representatives of 8,500 former employees in Albany, as was stated in daily press dispatches of Tuesday, May 23. In evidence of the company's refusal to negotiate with former employees now on strike, a representative of the PAPER TRADE JOURNAL was given copies of the Western Union telegrams exchanged between Mr. Dodge and Maurice T. Jones, chairman of the committee of strikers. The telegrams follow:

"PHILIP T. JONES, pres.

"International Paper Company.

"At a meeting of your employees now in session at Albany, we

were authorized to communicate with you and ask if you will meet the undersigned committee of your employees for the purpose of negotiating a settlement of the existing difficulties in the mills of your company. A reply will reach us, Stanwix Hotel, Albany, N. Y.

"Committee—Maurice T. Jones, John Connolly, P. J. Fagan, Edward Harpe, Clinton Gagnon, Patrick Cohan, H. E. Arcutt, James Beard, Dennis Relihan, Mary Hanley, Ed Yerrington, Joseph Moffett, Secretary Committee."

In reply to these "overtures," Mr. Dodge wired the following:

"MAURICE T. JONES,

"Chairman of Committee, et al.,

"Stanwix Hotel, Albany, N. Y.

"Replying to your telegram of May 20, delivered in my absence from town and received this morning, the existing rules of this company make ample provision for meetings with employees and adjustment of all questions arising both at local mills and with the General Management. These rules fix the permanent policy of this company and will be rigidly observed until changed by agreement between the company and its employees. Employees are only those actually on the pay rolls from time to time. No man signing your telegram is on our pay rolls or in the service of the company. Your committee apparently represents only former employees still on strike. Manager Curtis' letter of July 1, 1921, specifies the company's position relating to employment of former employees. Re-employment can be secured only by making individual application to local managers where there are vacancies. We trust your committee understands this company is now producing all the paper that market conditions require and that its present employees are fully competent to perform their duties. The longer application for employment is delayed by those desiring to enter our service, the less opportunity there will be for such employment. Our desire is and always has been to re-employ the faithful men who were in our service, and we will continue to give them preference when they make application where there are vacancies.

"INTERNATIONAL PAPER COMPANY,

"PHILIP T. DODGE, President."

Berkshire Hills Paper Co. Issues Bonds

NORTH ADAMS, Mass., May 22, 1922.—A new \$500,000 bond issue, designed to create funds to discharge current obligations and increase working capital, is being floated by the Berkshire Hills Paper Company, it has been learned through announcements from the office of Treasurer, Henry L. Harrington.

The bonds, in denominations of \$1,000, \$500 and \$100, are classified as 20-year sinking fund first and refund mortgage eight per cent gold bonds, dated November 1, 1921, and due November 1, 1941. Interest is payable semi-annually. The First National bank of Boston is trustee.

The company is nearly twenty years old and has had a remarkable growth under the management of H. L. Harrington.

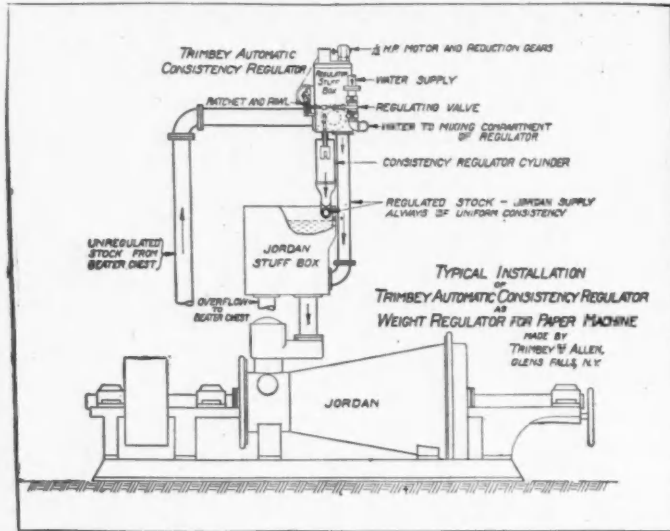
The assets of the company show that the issue is secured by more than two and a half times the amount of the total funded debt and fixed assets alone are valued at nearly twice this amount.

These bonds have a sinking fund provision which is designed to retire a certain amount annually and which is intended to provide a ready market for the sale of these bonds. Subscriptions are being received by the company at its mill office here and the bonds are offered at 100, the interest to yield 8 per cent.

Opens Cincinnati Office

CINCINNATI, Ohio, May 22, 1922.—The Tyner-Cammack Company has opened an office here with Edward H. Hearn in charge. He will handle the state of Ohio and parts of West Virginia and Kentucky. Mr. Hearn was formerly with the Chatfield Woods Company and is well acquainted with the jobbing trade in the territory in which he will operate.

UNIFORM STOCK



This is the machine that will regulate your paper stock to a uniform consistency, thus insuring **UNIFORM BRUSHING ACTION** at the Jordan. Given stock of uniform character and consistency going on to the wire you will get **UNIFORM WEIGHTS** and **UNIFORM RUNNING CONDITIONS**.

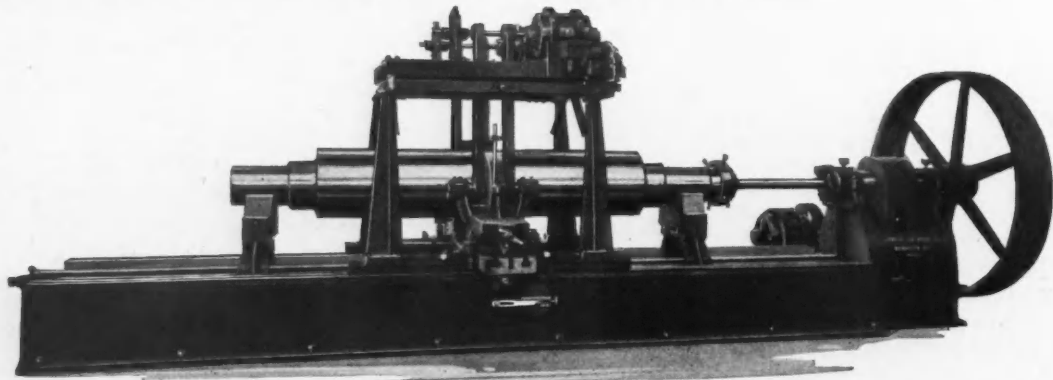
This regulator will also cause to be delivered at Beaters, Mixers or Bleachers, stock of a set, uniform consistency.

TRIMBEY MACHINE WORKS

Glens Falls, N. Y.

M. G. TIBBITTS, Sales Manager

LOBDELL ROLL GRINDERS are the only machines of the kind fitted with automatic crowning device which develops a perfect crown without the use of a guide or former and repeated trying for the correct setting.



LOBDELL Calenders are equipped with Patent Electric Motor, Hydraulic or Ratchet Lift all operated from the floor.

LOBDELL Micrometer Calipers are handy and accurate.

LOBDELL CAR WHEEL CO. Est. 1836 **Wilmington, Del. U. S. A.**

Section of the

Technical Association of the Pulp and Paper Industry



AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.



Conducted by W.G. MacNAUGHTON, Secretary

WHY A CORD? WHAT IS A CORD?

BY B. T. MCBAIN, DIRECTOR OF MANUFACTURING, NEKOOSA-EDWARDS PAPER COMPANY, PORT EDWARDS, WIS.

A cord is a cord—Because!—That about ends the argument as far as any evidence has ever been submitted to me. I am asked everywhere "How much sulphite and groundwood do you get per cord?" I answer "I don't know—what is a cord?" That brings up an argument and usually if the other fellow isn't also a Scotchman, he gives in and sides with me.

What the Dictionary Says

The dictionary says "a cord, when relating to wood, is a pile 4' x 4' x 8' and containing 128 cu. ft. of wood." Do we ever get 128 cu. ft. of wood when we buy a pile of wood measuring with the tape or rule, 4' x 4' x 8'? The fellow who piles it, usually puts his wood into the pile to make as few sticks measure up to 4' x 4' x 8' as he thinks he can get by with and you are lucky if you average 80 cu. ft. of wood (solid measurement).

Then, further, do you buy your wood with the bark on or off? If you buy it with the bark on at least one-fifth and sometimes one-fourth is bark. So again you are cheated and receive only 75 percent to 80 percent of the 80 cu. ft. or 60 to 64 cu. ft. that you first called a cord and probably thought 128 cu. ft. or about one-half of what Webster calls a cord.

Again, rot in the wood is not wood and will not produce fiber of any kind. This is another great loss to the Mill Company. I have been told by some, that they don't use cordwood but use logs and buy them under Spaulding, Scribners or Doyle scale; that they get them with the bark on, but don't pay for the bark as the scale is inside the bark. Yet they pay \$5.00 more freight on the bark as against peeled logs and figure they are getting the bark as fuel for nothing.

The Matter of Rot and Other Factors

They argue further, 1,000 ft. makes two cords. What is a thousand feet? I am answered, "oh! we have expert scalers who measure the small end of the log and the length and who scale out the rot." Are these scalers expert sulphite or pulp makers? Is there one in one hundred who can tell how much rot there is in a given log, especially Wisconsin hemlock? Will 1,000 ft. with the bark off, sawed into 4 ft. lengths and split pile up 4'x4'x16' and measure gross 256 cu. ft. or what Webster calls two cords? If it will and it is barked properly, split to chipper size, and piled properly, then you get more actual cu. ft. of wood than you get in two, so called, cords of peeled

wood and more than you get in two and one-half so called cords of smaller wood with the bark on. Split wood will pile closer and the voids will be smaller, the rot will all have been removed by the barker or the clean up splitters and you will have only wood and nothing but wood.

This all leads where? There is no way of being sure what is a cord and you are almost as badly off buying by board measure. What can we do, I am asked.

We buy coal and every other article used in the manufacture of paper on a weight basis—we sell our product on a weight basis, but we pay for our wood under the greatest gambling system known to any manufacturing game.

"A cord equals 800 pounds of sulphite," one says.

"A cord equals 1,000 pounds of sulphite," another says and still a third, "a cord equals 1,200 pounds of sulphite," but on closer questioning each one is found to be using a different kind of cord. The first one a so-called cord of wood with the bark on, 128 cubic feet less voids of 48 cubic feet equals 80 cubic feet less 20% bark, or 64 cubic feet. The second is using a so-called cord, one half of 1,000 feet measured by his expert scaler in the woods who never saw the inside of a sulphite mill, and the third one is using rossed spruce bought as a so-called cord 128 cubic feet less voids, say 48 cubic feet or about 80 cubic feet. But the figures of all of them are guesswork.

The Weight Basis

Then, what can we do? My answer is buy on a known basis and the only known basis can be a weight basis, for a pound is always a pound and you figure your product and sell it on that basis. You buy wet pulps of all kinds by weight. Why not the wood from which it is made?

A million dollars worth of wood lies out in the weather unprotected from the elements, disease, insect and animal life, unthought of—bought one year on a cord basis, left there for season after season, value greatly depreciating each season and then when it doesn't check out years hence with original buying scale, who is to blame? Where did it go? Who got it?

You buy it wet—probably with the bark on. It is in the pile, perchance a year, possibly two, some of the bark falls off, the wood dries out, it shrinks. It goes into the mill on a 4'x4'x8' cord basis, as it was bought, but there can be as much as 10 per cent shrinkage, not considering the bark, the rot, the disease, and

all the other losses. But a pound remains a pound. But what is a cord?

A few pounds of nails bought by the pound are locked up in the store room, carefully weighed and charged in and out by the pound. Why? We all do both. Why?

Comment

NOTE: It is a Scotch saying "Aim at a silk goon and ye may get the sleeve o't." The weight method for pulpwood carries with it too many difficulties of application for ready adoption especially in production or purchase. The first step that could more easily be taken is in mill practice. The wood supplied to the wood preparation department could easily be based on the weight where mills are equipped with track scales. Then with conveyor scales between the wood preparation department and the mechanical pulp mill. Sulphite mill and the power plant a record by weight would be had of the wood to the grinders, chips to the digesters and wood refuse to the furnaces.

The difficulties in applying the method to production and purchase of pulpwood are obvious to everyone familiar with the question. In Scandinavia the solid cubic measurement has long been used and it is a legal measure for pulpwood in the Province of Ontario, where although the term "cord" is still employed, it is defined as 115 cubic feet of solid wood. With many of the large operators the unit is 89 cubic feet which is supposed to be the quantity of wood in a so-called "tape cord" of sixteen foot material. That is a pile of sixteen foot pulp logs four feet wide, four feet high and sixteen feet long is supposed to contain 178 cubic feet of solid wood. The measurement is taken of the ends of the logs indiscriminately where the logs are scattered in the woods, the presumption being that as many butts are measured as tops. A skidway must be piled so that the top is level and one end even which is used to measure the diameter of each log. This goes far to insure fair measurement comparable to taking the middle diameter which is sometimes used.—Editor.

Proposed Investigation by Woodlands Section

In connection with the article by B. T. McBain, "What is a Cord and Why?" readers will be interested in the attached statement and proposed investigation under consideration by the Woodlands Section of the American Paper and Pulp Association.

Pulpwood, so far as known, is produced, purchased or used in the following forms:

- (1) Four feet in length or shorter
 - (a) Rough (with the bark)
 - (b) Rossed or peeled
 (Sometimes split in either (a) or (b))
- (2) Eight feet in length
 - (a) Rough
 - (b) Peeled
- (3) Longer than eight feet

Twelve, thirteen, fourteen, sixteen and longer—in such cases, it is usually required that longs shall be six inches or more longer than specified.

So far as known, there are three systems of measurement; in each case, varying somewhat in the method:

- (1) Stack measure with 128 cubic feet (cord) as the unit.
- (2) Solid wood volume in cubic feet computed from the diameter and length.
- (3) Log scale measured by various log rules—sometimes calculated by means of a conversion factor to another unit, also known as "Cord."

While, in view of the diversity of units of measurement employed, it has been urged to adopt the weight as a standard, it is believed advisable to analyze the present practice to find so far as possible the extent to which the different systems are in use at the present time.

To get this information, the following questionnaire has been prepared. You are requested to furnish the information called for, with the addition of further details as you may consider of value in the investigation:

QUESTIONNAIRE

1. Enumerate the different methods of wood measurement used by you with the quantity in units of each used in a normal year.

Unit of Measurement	Quantity	Species	Length
(1) Cord (Stack Measure)
(2) Solid Volume (Cu. Ft.)
(3) Logscale M.

Notes.

- (1) Indicate clearly the method of measurement.

How is deduction made for rot?
Is deduction made for voids?
Is a conversion factor used to compute peeled or rossed wood to rough measurement?
- (2) Indicate clearly the method of measurement—Is middle diameter the basis of computation? Is the volume in cubic feet converted to a unit known as a "cord"? If so, specify conversion factor and explain its basis.

Is bark included in the measurement? How is deduction made for rot?
What is the practice as to excess over specified length?
- (3) Specify log scale used. Is log scale measure converted to a unit known as a "cord"? If so, specify conversion factor and explain its basis.

Is bark included in the measurement? How is deduction made for rot?
What is the excess specified over the length called for?

Committees and Their Chairmen

The Sulphite Pulp Committee of the Technical Association of the Pulp and Paper Industry this year will be headed by Ralph A. Hayward, Newton Falls Paper Company, while the previous chairman, W. E. Byron Baker of York Haven, is appointed to head a new committee on Cellulose which it was decided to form.

The Committee on Coated and Processed Papers will have Edwin Sutermeister as its chairman and the work of this committee which has been suggested for the coming year, covers first, frothing of coating mixtures, its cause and prevention; and second, possibilities of improvement in design of a coating machine to operate at much higher speeds than present ones.

The new committee which it was decided, at the Annual Meeting, to form, dealing with the subject of Waste in the Industry, has been fortunate in getting for its chairman, Robert B. Wolf who participated with Herbert Hoover on the Committee on Elimination of Waste in Industry. The vice chairman of this committee is George D. Bearce, engineer of the News Print Service Bureau. It is planned to make a rather extensive survey of the pulp and paper industry and afterwards to concentrate on the study of two well known subjects—mill effluents and drum barker waste. The Forest Service and the Forest Products Laboratory have agreed, to active co-operation and the membership of the committee is expected to include some of the ablest men in the industry.

The Committee on Heat, Light and Power is continued under the chairmanship of Howard S. Taylor who will have associated with him W. W. Cronkhite, R. W. Leeper, C. L. Higgins, H. D. Eliason, and R. T. Anderson. The good work which this committee has shown in the past is expected to be continued during the present year.

Oregon Paper Co. to Make Improvements

SALEM, Ore., May 9, 1922.—Improvements aggregating between \$50,000 and \$60,000 will be made at the plant of the Oregon Pulp and Paper Company within the next few months, according to an announcement here today by the general manager of the plant.

PRODUCTION OF SULPHITE ALCOHOL*

BY DR. R. HEINZELMANN

Braconnot, in 1819, obtained a gummy mass by the treatment of wood with cold 90 percent sulphuric acid, dilution of the reaction mixture with water, filtration and neutralization with calcium carbonate; upon heating with dilute sulphuric acid this product was transformed into sugar which, upon fermentation, yielded alcohol. Similar experiments were carried out by Arnould (Dinglers polytechn. J., 134, 219) in 1855. This method did not prove technically successful, however, since the use of large quantities of the then expensive sulphuric acid was necessary.

About this same time Melsens sought to accomplish the same end by using dilute sulphuric acid and heating the wood with it in an autoclave to a temperature of 180°C. This method was patented in France and a factory was started in 1855 under the direction of the chemist Pelouze for the manufacture of ethyl alcohol from wood (Dinglers Polytechn. J. 150, 394); this method did not justify itself, however, and was soon abandoned.

The next method proposed for the production of alcohol from wood, and which is the forerunner of the present sulphite alcohol process, consisted in the combination of the preparation of both alcohol and paper from the wood, and is also a French discovery. According to Payen in his work "La fabrication du Papier etc.," the process was proposed by Bachet and Marchand, as early as 1860. For some time the method was in operation at the Swiss factory of Bex.

In this process the wood was cut into small pieces, heated with dilute hydrochloric acid, the sugar-containing solution drawn off, neutralized with calcium carbonate, fermented with yeast and the alcohol distilled off, while the residue was thoroughly washed, bleached with chlorine gas and used for the manufacture of paper.

A further advance was made when A. Mitscherlich, of Munich, proposed to treat the wood with calcium bisulphite at a temperature of 108° and transform it into sugar and paper pulp. The tannins and adhesives were first separated from the solution, which was then fermented and worked up into alcohol in the usual way, while the cellulosic part was changed into paper. This method was protected by German patent 4179 of Jan. 23, 1878.

Further exhaustive experiments with the sulphite liquors were carried out in 1891 by Lindsey and Tollens. For this purpose they used liquors from A.-G. für Maschinenpapierfabrikation in Aschaffenburg. This liquor contained only 1.2 percent fermentable carbohydrate (sugar) out of 9-10 percent dry residue and gave a yield of alcohol from 5.8 to 6.7 cc. per liter of liquor or 58 to 67 liters per ton of cellulose (pulp), assuming that a ton of pulp gave 10 cubic meters of liquor.

This investigation was repeated in 1905 by Krause with sulphite liquors from the same factory, and about the same results obtained.

These experiments did not give any promise that the manufacture of alcohol from waste sulphite liquors could be made a commercial operation. In 1908, however, two Swedish engineers, Hugo Wallin in Köpmanholmen at Fort, Sweden, and G. Eckström in Skutskar, Sweden, independently of each other and almost simultaneously, worked out a method for the manufacture of sulphite alcohol, which led to commercial processes that were successful.

From then on various proposals and modifications have

been made in various countries, all relating to the yield of sulphite alcohol from the waste liquor. It has not been possible to place the industry on a paying basis in Germany as yet, and alcohol is also manufactured from other raw materials (potatoes, cereals, molasses).

In discussing the patent and magazine literature the following headings will be used:

- I. Preliminary treatment of the sulphite liquor before fermentation.
- II. Fermentation of the sulphite liquor.
- III. Distillation of the fermented liquor.
- IV. Recovery of by-products.

I. Preliminary Treatment of the Liquor

German patent 246,708 (July 31, 1908) to Joh. Hugo Wallin, of Sweden, protects a method for the preparation of alcohol from the waste liquors of sulphite mills. According to this patent the liquors are neutralized and aerated without any previous treatment, mixed with a suitable yeast, fermented and the alcohol which is formed obtained by distillation. The aeration may be carried out during and after the neutralization. Lime or calcium carbonate may be used for the neutralization; the excess of lime is precipitated by carbon dioxide and the liquor filtered. In order to increase the sugar content, some malt was added; this may also be accomplished by the addition of peat moss, sawdust, or the like and heating at a high temperature.

Eckström obtained a patent covering a similar process in Sweden on May 9, 1908, with additions on Oct. 7, 1908. According to the corresponding Austrian patent of Oct. 1, 1909 (No. 41,479), the method is as follows:

The neutralization of the sulphurous acid is not carried out by the use of ordinary lime, but by a lime waste product (lime sludge), which is formed in the recovery of alkali in sulphate or soda pulp mills. In addition to calcium carbonate, this product contains organic substances, as well as sodium and magnesium salts, so that it not only neutralizes the acid, but also furnishes necessary nutrients for the fermentation.

The treated liquor is then rendered neutral or slightly acid by the addition of acids or bases, separated by decantation from the precipitate, and cooled to fermentation temperature (25°C). This cooling may be accompanied by a concentration of the liquor, in that one sprays the liquor at about 90°C into a tower, a current of air in the opposite direction assisting the evaporation. This liquor is then fermented, after the addition of yeast and suitable nutrient materials, and the alcohol distilled.

A report in Z. anorg. Chem. for 1910, page 1539, states that the yield by Eckström's process is 60 liters of alcohol per ton of pulp, and that by Wallin's process a somewhat higher yield was obtained, which might have been due to the addition of malt.

Eckström's original process was modified by Aktiebolaget Ethyl of Falun, Sweden, in French patent 446,718 (Oct. 8, 1912), and Swedish patent of Jan. 15, 1912. They proposed to treat the hot liquor as it comes from the digesters, having a temperature of about 100°C, not with air, but with an oxygen carrier, such as manganic sulphate (100 grams per cubic meter of liquor), which exerts a marked oxidizing action upon the liquor before the digestion. The liquor may simultaneously be neutralized with lime sludge or pulverized calcium carbonate.

*Translated by Clarence J. West, Chairman, Committee on Bibliography, Tappi. From der Papier-Fabrikant, April 2, 1922.

The air treatment was carried out on the liquor when it had been cooled to 25-35°C, using, if desired, Eckström's procedure of spraying the liquor into a tower, against a stream of air.

This process was carried out as follows: The liquor from the digester at a temperature of about 85°C passes through the tube 2 (figure 1), into the container 1, in which it is at once mixed with the oxygen carrier (manganic sulphate, or other material) in the above-mentioned proportions. If one wishes to neutralize the liquor at the same time, one adds the corresponding amount of lime sludge or other base, opens the cock 7 and passes a stream of air through the lines 3 and 4, which causes an energetic stirring of the contents of the con-

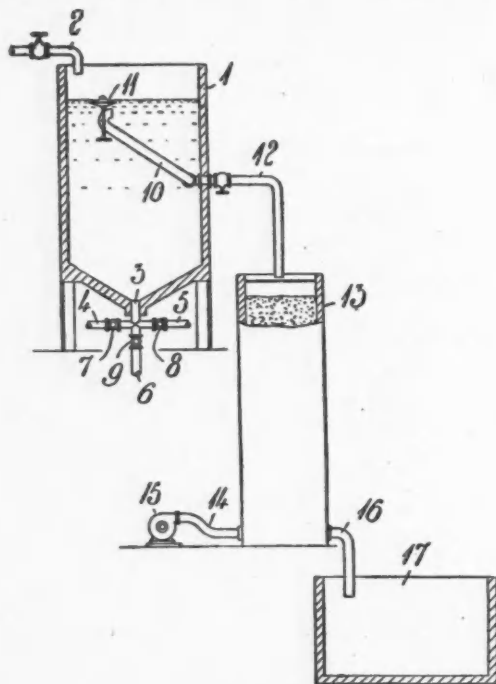


FIG. 1.

tainer, and at the same time accelerates the oxidation of the liquors. After a three hours' treatment of the product in this manner, the liquor is cooled and allowed to flow through the floating valve 11, the flexible tube 10 and the tube 12 into the tower 13, in which it is subjected by renewed aeration at a temperature of 25 to 30°C; the air is forced into the tower by means of the compressor 15 through the tube 14.

A further modification by the same company is found in Austrian patent 60,762 (April 15, 1913), and a Swedish patent of Jan. 4, 1912, and consists in the addition of an ammonium salt to the liquor before fermentation, and before, during or after the neutralization. The purpose of this addition is to change the sulphur dioxide bound to organic compounds into substances which are not deleterious to the fermentation. The ammonia liberated by the decomposition of the ammonium salt, remains in part as such in the liquor, but in part is changed into organic nitrogen compounds (amides), which compounds are better nutrient media for the yeast than are the ammonium salts themselves.

Eckström, according to U. S. patent 1,046,160 of Dec. 3, 1912, uses urine as the nitrogen-containing medium for the nutrition of the yeast, which he adds to the liquor from the digester in amounts of about 3 liters per 1,000 liters of liquor.

The urine, before being used, is sterilized by heating to about 100°C.

Eckström describes another use for sulphite waste liquors in U. S. patent 1,087,744 of Feb. 17, 1914. In this he proposes to use the waste liquor as a diluent for the concentrated, sugar-containing cellulose solution which is obtained by heating cellulose with 70-80 percent sulphuric acid. The addition of the hot liquor as it comes from the digester, which contains principally organic compounds, potassium bisulphite, free sulphurous acid and sugar, has the advantage that the concentrated cellulose solution is heated at the same time it is diluted, and its acid content is, in part, neutralized. In addition, the cellulose solution is enriched by the sugar content of the waste liquors. Upon fermentation of this mixture and distillation, alcohol may be obtained. One thousand liters of the waste liquors are added to 50 liters of the cellulose solution, so that the final temperature of the mixture is about 85°C. The mixture is then heated at the ordinary pressure for about an hour, during which time the cellulose is transformed into fermentable sugar.

A similar idea, that is, the use of sulphite waste liquors for the digestion of solid material (sawdust and the like) and thus the preparation of fermentable sugar, is contained in Austrian patent 53,046 by the A.-G. für Papier- and Druck-Industrie Leykam-Josefsthal, dated Aug. 15, 1911.

The sulphite liquors and the sawdust are heated in a digester at a pressure of 3 to 6 atmospheres with the formation of sugar. The mixture is filtered and the residue again heated with hot acid sulphite liquor to complete the process. The liquor thus obtained is treated with wood ashes, also a by-product of the cellulose plant and the neutralization completed by the addition of a base and the decanted and cooled liquor is fermented and distilled in the usual way.

A modification of this idea is found in U. S. patent 1,056,152 (July 15, 1912), and in Austrian patent 75,274 (Nov. 15, 1915), granted to the Standard Alcohol Co., of Maine. They observed that the hydrolytic action of the sulphite liquors was increased by the addition of a small amount of a strong mineral acid, such as sulphuric acid before the digestion of the sawdust. This effect is probably due to the considerable content of sulfone compounds in the liquor. As such these have no hydrolytic action, but the strong mineral acid transforms them into sulfonic acids, which have a marked hydrolytic effect but does not influence the content of fermentable sugar already present in the liquor.

The sulphite liquor is treated with 0.33 percent of concentrated sulphuric acid, and the sawdust is heated with this mixture with a liquor ratio of 3:1 about 30 minutes at 9 atmospheres, pressure. About 22 percent of fermentable sugars are obtained.

L. Spassky, French patent 451,268 (Feb. 9, 1912), mixes the sulphite liquor obtained by digesting sawdust, peat, etc., with a solution of calcium bisulphite at 5-6 atmospheres pressure and separation of the liquor from the residue, with a 10 percent aqueous sulphuric or hydrochloric acid solution, which causes the precipitation of lignin. The solution, after removal of the lignin, is returned to the digester containing the cellulose residue, a quarter percent of aqueous hydrofluoric acid added and the mixture heated at about 140°C (5 to 6 atmospheres) until the cellulose is completely transformed to glucose. The neutralized solution is then fermented with yeast, yielding a solution containing 6 to 8 percent alcohol.

O. W. Willcox, U. S. patent 1,044,615 of Nov. 19, 1912, proposes a manner of treatment of the waste liquors to make them more suitable for the growth of yeast. These liquors,

according to this patent, contain about 1.8 percent of fermentable sugars but they also contain a considerable amount of calcium salts, among which is 1.1 percent of calcium oxide. While fermentable sugars and calcium salts are important elements for the growth of yeast, these must be supplemented by the addition of nitrogen and phosphoric acid in suitable form. Besides this, it is also necessary to change the sulphurous acid, which is present in free and combined form in the liquor, so that it is not harmful to the growth of the yeast. To accomplish this, the yeast is treated as follows:

Aqueous ammonia is first added in such an amount that the liquor still contains about 0.2 percent acid in the form of ammonium bisulphite. If the amount of ammonia added for

this purpose is not sufficient to furnish the nitrogen necessary for the growth of the yeast, further ammonia may be added in the form of ammonium salts (the chloride or sulphate). The neutralization may also be carried out in part with lime and in part with ammonia.

The liquor, which now contains the necessary amount of nitrogen, is treated with a sufficient amount of phosphoric acid either in the form of free phosphoric acid or as acid phosphoric salts (calcium, ammonium, etc.). The amount to be added should be such that it amounts to 0.16 percent of the weight of the sugar which is present in the solution. The liquid is now ready for fermenting in the usual way with yeast.

(To be concluded)

SUGGESTIONS CONSIDERED ON PAPERMAKING FELTS

If the sizes of felts could be standardized to inches in width and even feet in length the manufacturing costs of the felts would be considerably reduced.

In the felt finishing room standard sizes would mean a standard method of finishing, consequently the finished product would be much more uniform than at the present time. If the paper mills would accept the standard sizes the felts would always be uniform and would give much better results than those specially made up to meet their particular conditions. At the present time some customers ask for felts lightly napped, some medium napped and others heavily napped. If felts were standardized, there would be only one nap.

Standard sizes and designs of felts would mean a great saving in time and labor which, with the present method, is lost in changing to the various sizes and designs of felts. The slight difference in the work that the special felts produce would be more than offset by the advantages gained, such as the decrease in price, more prompt deliveries, the possibility of carrying standard sizes in stock.

There would be less chance for errors in the manufacture of felts, and the manufacturers would be able to concentrate on these standard sizes and designs and work out efficient improvements.

After careful study it has become perfectly plain that a better felt could be made at a lower cost provided there could be eliminated most of the small variations both in size and design, and such elimination would not make any material difference to the users, or at least the difference would be more than offset by the advantages. The advantages that would accrue to the user would be as follows:

Difference in Price

First, From a study of the cost figures it would be quite safe to anticipate a difference of 10 per cent between those felts which were standardized as to style and design and the others, with a very strong probability of considerably larger reductions to follow.

Delivery Question

The second, and perhaps even more important aspect to the user, is the delivery question. With proper standardization prompt delivery would be possible with no injustice to anyone. Under the present system the only way the customer can get prompt delivery is to order the felts made up and held. In the past this has proved difficult both for seller and customer because of the general uncertainty of the transaction, but if the standardization could be worked out, enough customers would be using any standard felt to warrant a felt manufacturer carrying a reasonable stock and making quick delivery.

Workmanship

The third factor is workmanship. Many of the operations in the manufacture of felts are guided by individual judgment. This judgment can be exercised to better advantage when the same size and design of felt is run through in quantity one after another, than when each felt is different from the last. Many of the operations depend entirely on the eye and judgment of the workman and very

considerable improvement would result from such standardization.

Would Work Out to Benefit of Customers

All of these factors would work out to the benefit of those customers who are in a position to use standardized sizes and designs and they would not continue to pay for the higher priced work on the individual orders.

By having fewer sizes and designs to make the felt manufacturer would probably be able to concentrate on these and work out efficiencies and improvements more quickly than at present when each mill, and even each machine, takes an individual clothing.

The consolidation of size and design would enable many large paper manufacturers to cut their stocks of felts by the increased interchangeability between machines.

The extent to which such standardization could be carried out would have to be determined by joint action between the felt makers and the paper makers, taking into consultation the builders of paper making machinery for future machines.

Some Tentative Suggestions

As a purely tentative suggestion the following, as to size, is offered:

Length: Variations of only two feet in length in even figures from 24 to 50 feet, then 54 and 56, and from there on, in four-foot lengths.

Width: Inasmuch as we are dealing with a very large piece of woollen fabric (the same piece of which, when measured under different conditions, will vary several inches in width) it seems unwise to make modifications for variations of one inch in width because the cost of making these variations is very considerable and the resulting variation is somewhat indefinite. It is suggested, therefore, that variations in width be confined to four inch jumps, or if this is too great, then to two inch jumps.

Design: This question would have to be worked out by the individual felt maker largely for himself but the same general principles should govern all. We suggest, for instance, that two standard designs of bottom board felts, one for board where fineness of finish is necessary and another one where the greatest strength, openness and long life are the prime requisites, and felt marks are not a detriment, would answer the majority of purposes. In corrugated, sheathing, roofing, groundwood pulp and some others, a single design should be sufficient.

In all this standardization of both design and size, the felt maker would be free to make any deviations from the standard, but at a price commensurate with the increased cost.

This would enable any paper mill to get any kind of felt it wanted, as heretofore, but would put the cost where it belonged.

Inasmuch as each variation of either width or length, according to whether the felt is made joined or endless, necessitates a separate warp, it is evident that this is not economical manufacturing and must ultimately be paid for by the consumer of felts.

THE PROPERTIES OF VULCANIZED OR HARD FIBER*

How They Are Affected by Variation In Pressure Used in The Manufacturing Process.

By DR. RETZOW,

(NOTE:—This article gives the results of a series of experiments, made to determine the relation between the various properties of vulcanized paper and the pressure used in manufacturing the same. While the author writes this article predominately from the standpoint of the application of vulcanized paper in electrical technology, nevertheless, the tests, that he made, apply to other uses of the paper as well. As far as electrical uses are concerned, just the determination of the dielectric properties and the breaking-through voltage is of special nature; on the other hand, all the other properties of vulcanized paper, while important from an electrical standpoint, pertain as well to the many other uses to which vulcanized or hard fiber is put. This generality makes the article particularly useful and interesting.—Translator.)

The use of vulcanized paper for electrical purposes is, perhaps, one of the most important applications of this product. In the past few years, it has been employed in ever increasing quantities both for this purpose as well as for numerous other uses. Its popularity is due in no small part to the ease with which it is worked and pressed into any shape or form that may be desired. Among its many electrical uses there may be mentioned the making of parts of switches and transformers, bodies for coils and windings of all sorts, brushes and coverings for live wires, collector rings and fillers for slots on commutators and armatures, etc. It has also been used in large quantities in the manufacture of boxes, trunks, waste-paper baskets, containers of all sorts, and many other articles of important daily use.

Manufacture of Vulcanized Paper and Influence of Pressure

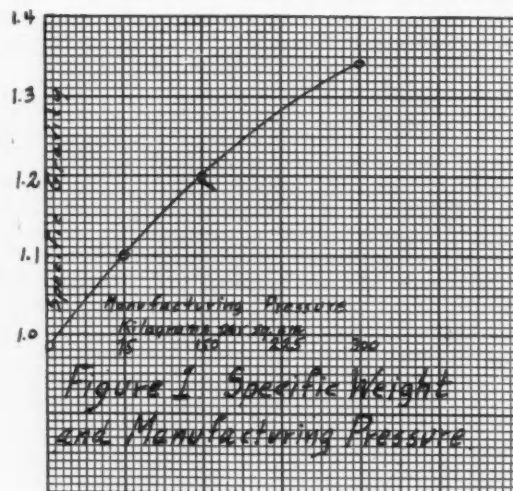
The process of making this paper product is too well-known to require more than mere cursory mention. Vulcanized paper is made from layers of paper which are pressed together to form a homogeneous mass at high pressure and at a definite temperature. Various binding agents are used to cause one layer to stick to the other, such as shellac, bakelite, or any other artificial resin. The best temperature at which this process should be carried out depends on the nature of the binding agent used. The melting point of the resin is of pre-eminent importance in this respect. The pressure that is used in the process of manufacture is, perhaps, the most important factor therein. The pressure may vary considerably but must not exceed the maximum of 350 kilograms per square centimeter, as above that point the paper is injured and the finished product will be full of cracks and fissures. The variation of the pressure below this limit results in various changes in the properties of the finished product, and it is the main purpose of this article to establish the conditions of this variation with its consequent effect on the physical, electrical and chemical properties of the hard fiber produced, so as to ascertain the most favorable conditions of pressure, which will yield a product of the desired characteristics.

Unless it is mentioned to the contrary, the tests, which are described below, are all made on the same product. The methods employed in the experimentation are all very familiar and have been explained frequently in other articles, so that they need not be discussed in any detail here. In each test, the value recorded is the average of three different determina-

tions with the sole exception of the experiment, which was made to establish the heat resisting qualities of the paper.

Mechanical Properties

SPECIFIC WEIGHT.—The specific weight of the paper is determined by weighing a sample and measuring the volume. The test was made, starting with two different thicknesses of sheets, 1.25 and 2.37 millimeters. The paper was subjected to different pressures and the results of the two series of readings, in as much as the difference between the individual determinations was less than one per cent, were plotted together and the



following curve was obtained. From this curve it is seen that the specific gravity of the finished paper increases regularly with increase in the manufacturing pressure.

HARDNESS.—The hardness of the paper was determined in accordance with the Brinell method, by the ball pressure test. A ball with a diameter of 4 millimeters is used for this purpose. It is loaded with 100 kilograms and this load is allowed to act on the paper for 20 seconds. The quotient of the load and the depth of the depression caused thereby gives the hardness factors which are shown in the following tables:

TABLE I.

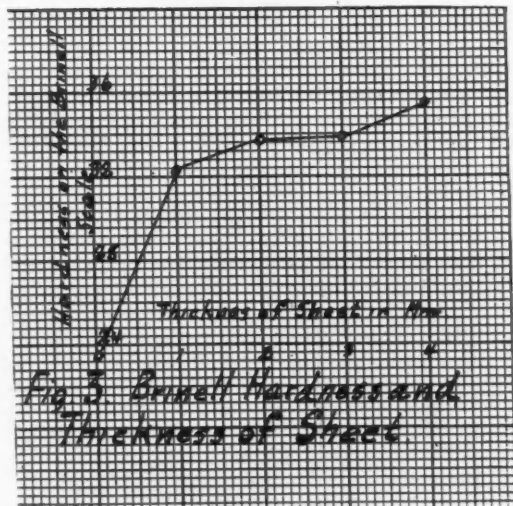
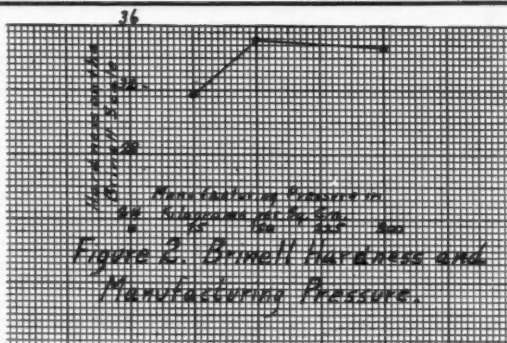
Manufacturing pressure in kilograms per sq. cm.	75 kilos.	150 kilos.	300 kilos.
Brinell hardness.....	31.8	35.2	34.6

TABLE II.

Thickness of the sheet in millimeters...	1.	2.	3.	4.
Brinell hardness.....	32.3	33.7	33.9	35.6

As it has been shown in numerous experiments, which have been made up to the present time, that the properties of the pressed paper are not independent of the thickness of the sheets, it did not appear to be out of place to introduce this factor in the discussion of the results of these experiments. Consequently, in the above table (Table II) there have been given the hardness factors, which were determined with increasing thickness of the vulcanized paper sheets. From this table it is clearly seen that the hardness of the paper increases as the thickness of the sheet. The numerical results, which are contained in the above tables, are shown in curve form below.

*Translated by Ismar Ginsberg, B. Sc., Chem, Eng, from *Kunststoffe*, 1922, pages 49 to 53.



In this case it is observed that the curves are not smooth, but are made up of broken lines, which indicates that the hardness of the vulcanized paper is not related to the manufacturing pressure through any general law. The most advantageous pressure at which the manufacture should be conducted, that is the one that will yield a product of the maximum hardness, when that property is most desired in the finished paper, is about 150 kilograms per square centimeter.

Resistance to Breaking—Shock Test on Notched Sample

For this purpose a sample is notched and subjected to sudden shock, to determine the resistance of the material to rupture. Numerous tests were made with various products, made under different manufacturing pressures, but no absolutely positive results were obtained. All that was established was simply that two different directions of the application of the force, producing the shock, can be clearly distinguished when the action of the force is perpendicular to the grain of the paper. The tests were made with forces acting at right angles to each other. These directions are dependent essentially on the direction of the operation of the paper-making machine in the manufacture of the basic materials from which the hard paper is made. The resistance of the paper to rupture by the notched shock test was found to be 17.7 and 14.9 kilograms per square centimeter. These figures are the averages of two different sets of tests. When the shock was applied in the plane of the grain of the paper, then the average resistance value was only 8.8 kilograms per square centimeter. This clearly indicates that cleavability and bursting of the vulcanized

paper are more apt to take place in the direction of the grain.

No tests were made to determine the resistance of the paper to compression or to shear. The resistance of the paper to compression, when the force is applied perpendicularly to the plane of the paper, is on the average 30 kilograms per square millimeter. This test cannot be carried out when the force is applied in the direction of the grain of the paper, for the reason that the vulcanized paper splits into single sheets when this is done. When the force is applied in the longitudinal direction, that is in the direction of the plane of the grain, then the resistance to tearing was found to be 12.5 kilograms per square millimeter, but when the direction of the application of the shearing force was perpendicular to the grain of the paper, the resistance to tearing was 9 kilograms per square millimeter.

Electrical Properties

SURFACE RESISTANCE.—The surface resistance of the hard paper was determined by the usual ballistic method with only a slight change in the directions for testing which have been adopted as standard by the VDI (Association of German Engineers). In the VDI method of carrying out this test a standard apparatus is provided for the electrodes, in which the two electrodes, 10 centimeters in length, are located at a distance of one centimeter from each other, fastened to a plate holder. However, in such an arrangement the resistance to the passage of the current cannot be cut out as far as the plate is concerned, with the result that in the determination of very high surface resistances, quite a considerable error is introduced in the readings. Preliminary tests indicated that quite uniform results were obtained when the electrodes are handled independently one of the other and set at the prescribed distance apart. This distance is indicated by making a pencil mark on the piece of hard paper that is being tested before the experiment is started, whereby any irregularities in the surface of the sample are also avoided, by selecting a part of the sample which is perfectly smooth. In order to prevent the effects of current of air moving over the surface of the paper sample, sudden variations in temperature and humidity, the entire series of tests was carried out in a closed box. Even when all these precautions were taken, it was found to be impossible to detect differences of any material magnitude in the surface resistance of the product, made under different conditions of pressure. Tabular results are accordingly not given. At room temperature the average surface resistance of the vulcanized paper was found to be 12,500 x 1,000 megohms per centimeter.

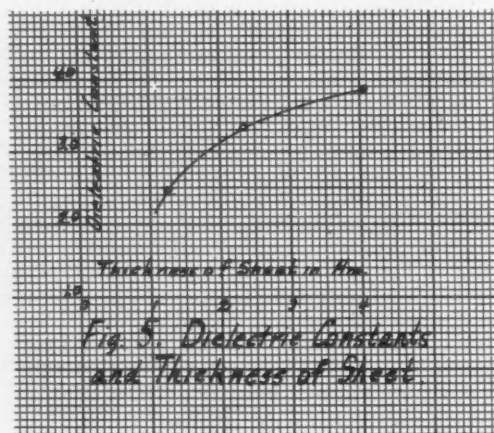
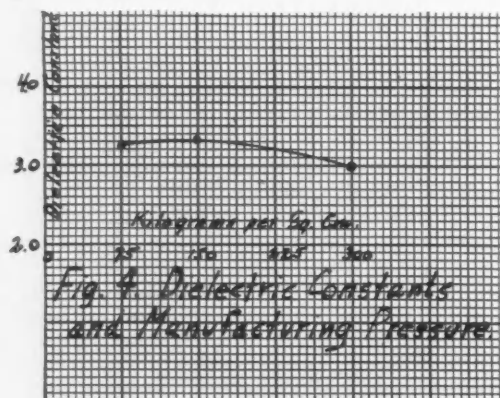
DIELECTRIC CONSTANT.—The experiments, made for the purpose of determining the dielectric constants of vulcanized paper, were carried out as capacity tests with the aid of the Seibt measuring bridge; comparison is made with a standardized rotary condenser. The ratio of the capacity measured when an air gap is interposed between the plates of the condenser to that when the sheet of vulcanized paper is used as the capacitive medium gives the magnitude of the dielectric constant. The results of the individual readings made in this test, many of which are influenced by the fact that the sheets of paper were not absolutely even and for this reason the distance of the sheet from the plates of the condenser was not constant over its surface, are summarized in the following table:

TABLE III.
Dielectric Constants of the Vulcanized Paper
(Thickness of the sheet in mm.) Average

Manufacturing pressure in kilograms per sq. cm.	1.25	2.37	2.75	4.05	Average
75 kg.	2.39	3.46	3.39	3.89	3.28
150 kg.	2.53	3.54	...	3.97	3.35
300 kg.	2.48	3.00	2.73	3.89	3.00
Average	2.46	3.33	...	3.89	...

From the above table it is clearly seen that the thickness of the sheet of paper has a considerable influence on the dielectric constant. As far as the manufacturing pressure is concerned,

it is concluded that in order to produce a paper which will have the most advantageous dielectric properties, a pressure of 150 kilograms per square centimeter should be used. No advantage is gained by using a higher pressure than this. The numerical results contained in Table III are shown graphically in Figures 4 and 5.



Resistance to Breaking Through of the Voltage

The author was unable to carry out any experiments to determine the voltages at which the current will break through the sheet of vulcanized paper, due to the fact that he did not possess facilities for producing high enough voltages to accomplish this, except for just one thickness of sheet. The curve, which is shown in Fig. 6, is taken from information supplied by a manufacturer of these paper products. It indicates that the resistance of the paper sheet to the breaking through of the current does not increase proportionally with the thickness of the paper, but that this increase is only slight, so that for the exact determination of the factor the measurement must be carried out for different thickness of sheets. In the aforementioned figure there is also shown a curve representing the relation between the calculated values of the breaking through voltage per millimeter thickness of sheet and the different thicknesses of sheets. It is remarkable that this curve shows a slight increase in these values as the thickness increases, instead of the expected decrease.

Physical Properties

RESISTANCE TO HEAT.—For many purposes for which vulcanized paper is used, its resistance to heat is of great importance. The tests that were made to determine what temperature differ-

ently made papers could withstand are therefore of very great interest. The criterion on which such resistance was based was change in color, the increase in the thickness of the sheets, the formation of blisters and bubbles on the surface, as well as the complete destruction of the paper by splitting.

This test was carried out in the following manner. The sample of paper was heated in an electric oven for one hour at the determined temperature. The accuracy in the temperature measurement was plus or minus 2 degrees C.

The results of the experiments are shown in numerical form in tables IV and V, and graphically in figures 7 and 8.

TABLE IV.
Percentage Increase in Thickness After One Hour's Heating

Temp. of Heating Degrees C.	Manufacturing pressure in kilograms p. r. sq. cm.			Remarks
	75 kgs.	150 kgs.	300 kgs.	
20	Brown color
80	0.4	0.8	0.9	
100	1.2	0.7	2.1	
120	1.2	0.8	3.2	
140	5.5	1.2	4.4	Reddish color
160	11.2	12.0	10.0	
180	19.2	15.7	18.8	
200	20.0	20.1	23.5	
220	19.7	20.3	23.8	

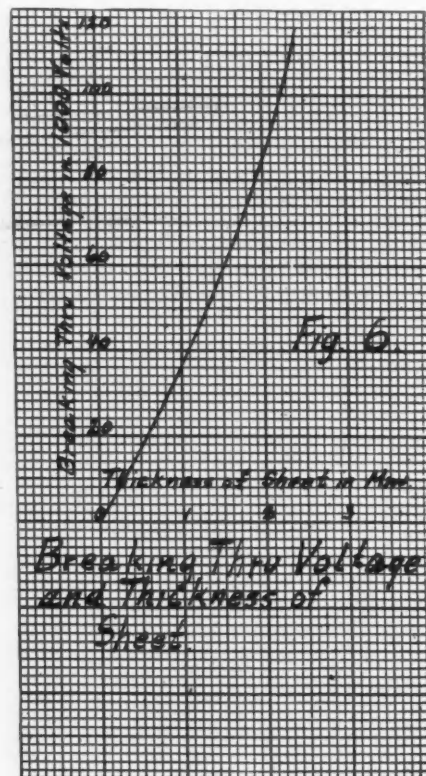


TABLE V.
Percentage Increase in Thickness After One Hour's Heating

Temp. of Heating Degrees C.	Thickness of Sheet			Remarks
	2mm.	3mm.	4mm.	
20	Reddish brown color
80	0.7	0.9	0.6	
100	1.4	1.8	0.9	
120	0.2	...	1.4	
140	6.8	3.3	1.8	Splitting begins
160	17.3	7.9	7.3	
180	24.7	18.7	10.8	
200	26.7	18.2	17.9	
220	26.4	20.3	17.1	

Strongly split, dark reddish brown

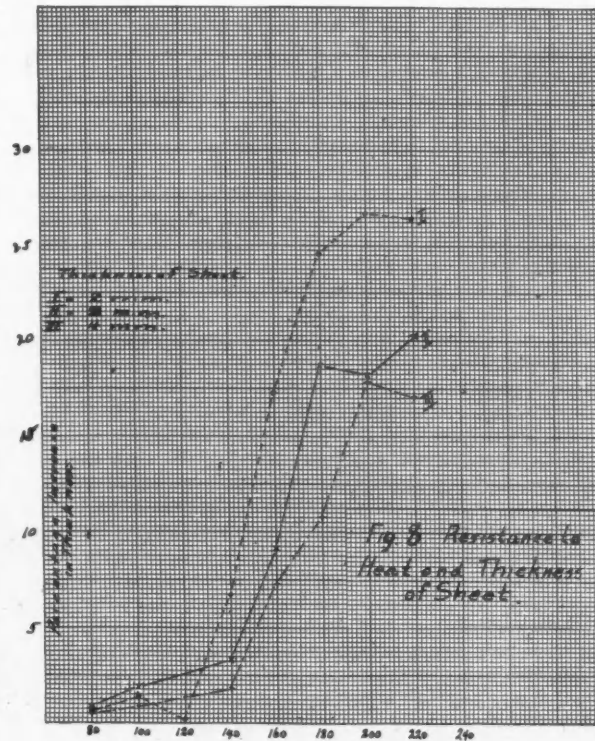
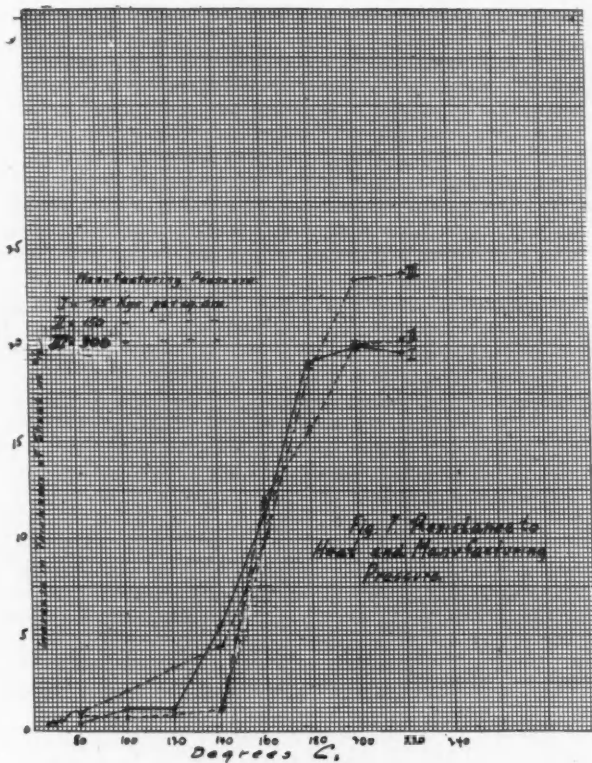
The results, shown in these tables and depicted graphically in the curves, take into consideration all the factors that are of any importance in the determination of the resistance to heat, exhibited by the vulcanized paper. It was deemed advisable to make two separate series of tests for the different manufacturing pressures and thickness of sheet, as the variation between the results is rather large at higher temperatures.

The first conclusion that may be drawn from these experiments is that the manufactured paper was better able to resist high temperatures when the manufacturing pressure was low. This agrees with another observation, made in the experiments, namely, that when a piece of the paper was subjected to high tension or pressure in a special test, the heat resistant powers of the paper were decreased to a considerable extent. In a like manner the influence of high temperatures is not so marked as the thickness of the paper increases.

It is also concluded from the foregoing tabulated results that the highest temperature at which the paper can be used for construction purposes, that is, in the making of parts, containers, devices, etc., which have to undergo high temperatures, is 140 degrees C. At 180 degrees C the reddish discoloration begins to take place uniformly throughout the paper. At 200 degrees C, the paper shows first signs of splitting. Bulging out of the surface of the paper and the formation of blisters were not observed in these experiments. In further

drying out of the paper is a very slow operation. For this reason the inherent capability of the vulcanized paper to absorb moisture is highly significant for many purposes for which this product is used.

The testing of the paper to determine this absorptive property was carried out under the severest possible conditions, namely, by immersing the paper in water and allowing it to remain that way for many hours. Observations were made of the external appearance of the paper, the gain in weight due to the moisture absorbed was determined, and likewise



the effect of the moisture in the paper on its electrical properties was established.

Various samples of paper, prepared under different manufacturing pressures and of various thickness, were tested. An additional absorption test with acids, lasting 96 hours, was made as well. The increase in weight was determined after careful drying of the water soaked sample and two hours' exposure to the air. The percentage increase in weight was calculated on the original weight of the sample. The results, thus obtained at various manufacturing pressures and for various thicknesses of paper, are shown in Tables VI and VII. The graphical representation of these results is given in figures 10 and 11.

connection with this property of hard paper it may be mentioned that the method of manufacture has a great deal to do with the power of the paper to resist high temperatures.

Absorption of Moisture

Hard paper will absorb moisture from the air. The condition of the atmosphere in the room in which it is used is of importance in determining how much moisture the paper will absorb, but it does not follow that this moisture will be given up again, as the humidity of the air decreases. The moisture is held in the fiber by capillary attraction and accordingly the

TABLE VI.
Absorption of Moisture and Manufacturing Pressure.
Manufacturing Pressure in Kilograms per sq. cm.

Treatment.	75 Kilos.	150 Kilos.	300 Kilos.
3 Hours in water.....	1.0	0.7	0.5
24 Hours in water.....	2.6	2.0	1.6
96 Hours in acid.....	3.4	4.7	2.8

TABLE VII.
Absorption of Moisture and Thickness of Sheet.
Thickness of Sheet in Millimeters

Treatment.	1.25 mm.	2.37 mm.	2.75 mm.	4.05 mm.
3 hours in water.....	1.4	1.0	0.6	0.4
24 hours in water.....	4.5	2.0	2.1	1.1
96 hours in acid.....	6.0	2.7	3.4	1.5

The acid absorption test is carried out in the same manner as the others. The results will be discussed later.

The numerical results, indicated in the above tables, indicate that the absorption of moisture decreases as the manufacturing pressure, under which the sheet is made, is increased. Likewise, as the thickness of the sheet increases, the capability of the product absorbing moisture diminishes slightly.

The importance of the moisture absorbing properties on the electric properties of the paper is far greater than the mere increase in weight. A large number of tests were carried out with the idea of arriving at some general law, connecting the two properties. The readings in the individual experiments varied from one another very considerably, but the averages were calculated and are given in the following tables, for the practical significance of these experiments is great.

TABLE VIII.
Surface Resistance and Moisture in Sample.

Treatment.	Surface Resistance in Megohms per centimeter.	Compared with Original Value of factor.
Original sample.....	12,500,000	1
3 hours in water.....	200,000	0.02
24 hours in water.....	100,000	0.01
96 hours in acid.....	8	0.0000006

From these results it is evident that the presence of a little moisture in the finished vulcanized paper product has a very great effect on the surface resistance of the same. Increased manufacturing pressure and thickness of the sheet have but little effect in ameliorating this injurious influence.

The effect of the absorption of moisture on the dielectric constant was also determined. The results may be seen in the following table.

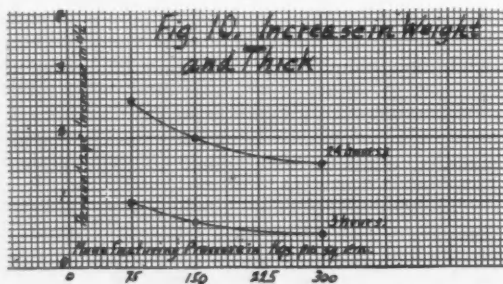
TABLE IX.
Moisture Absorption and Dielectric Constant.

Treatment.	Manufacturing Pressure in Kilograms Per Sq. Cm.		
	75 Kilos.	150 Kilos.	300 Kilos.
Original sample.....	3.28	3.35	3.00
3 hours in water.....	2.28	2.28	2.00
24 hours in water.....	1.96	2.09	2.03

It is evident that this effect is very considerable. The dielectric co-efficient appears to approach a limiting value of 2 after a slight absorption of moisture.

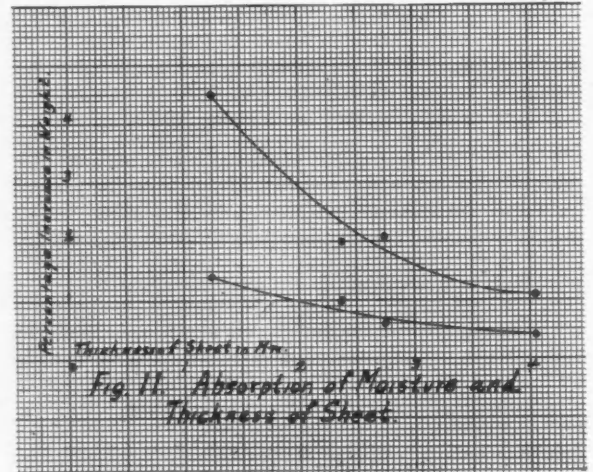
Resistance to Acid

The resistance of the hard paper to the action of acid was tested in the same manner as its water absorptive property.



The paper was allowed to remain for 96 hours in an acid bath, containing sulphuric acid, (specific gravity 1.18) such as is used in storage batteries. The effect of the manufacturing property on the resistance of the paper to acid is not clearly established from the experimental results available, but on the other hand, it was definitely determined that the thicker the sheet of paper, the less the percentage increase in weight due to the absorption of acid. The effect of the acid in the paper on the electrical constants is of course very great. The conductivity of the paper is increased greatly with the result that the dielectric constants fall so low as to be unmeasurable and the surface resistance becomes a mere fraction of the original value.

The practical application of the results of these experiments made it possible to manufacture a vulcanized paper which was best suited for the use to which it was put. It is only necessary to determine beforehand what particular property is most desirable in the finished product and then the conditions may be adjusted so as to make a product which possesses this property in the highest degree. There was just one other series of experiments that still remain to be reported, but due to the



fact that conclusive results were not obtained up to the present, this report is left for a future time. Reference is here had to the testing of the paper to determine its resistance to weather.

Waste Bark as Fuel

See PAPER TRADE JOURNAL, March 30, 1922.

This is one of the subjects suggested at the annual convention to a committee to be formed to investigate the waste in the industry—George D. Bearce, engineer of the News Print Service Bureau, has recently issued a questionnaire to the news print mills preliminary to its study by the Bureau.

The subject is of particular interest to the New England and Canadian mills where the pulpwood is floated to the mill and the bark is removed as the wood is taken from the water while there are still localities where the bark can be disposed of by returning it to the river, in most cases the disposal is a serious problem. This is particularly so on account of the high moisture content of the bark even after being pressed by the machines so far developed.

The Forest Products Laboratory at Madison, Wis., has generously offered to co-operate in the study of the problem. It has collected the data from the files and embodied it in the attached paper having in mind that possibly the immediate solution lies in its utilization as fuel.

Durability of Sole Leather filled with Sulphite Cellulose Extract

In the Bureau of Standards Technical News Bulletin 61, it is stated that the investigation of the durability of sole leather filled with sulphite cellulose extract as compared with ordinary vegetable tanning materials has been completed.

The results show that sulphite cellulose extract is as firmly fixed in the leather as the ordinary vegetable tanning material and that leather filled with it is as durable as leather filled with such materials as chestnut and quebracho.

The report will be issued as a Technologic Paper of the Bureau of Standards and has also been approved for outside publication.

THE UTILIZATION OF BARK AS FUEL

BY E. R. SCHAFER, Forest Products Laboratory, Madison, Wis.

[NOTE: *Superscripts refer to the bibliography listed at the end of the report.*]

The following is a brief résumé of the literature in the laboratory files on the use of bark as fuel. The subject falls under two heads: (1) The heating value of bark as compared with wood or coal. (2) The drying of bark in the most economical way, to such an extent that its available heating value is raised to make it comparable with the use of wood or coal. The heating value of wood and its preparation for use as fuel has been gone into with the idea that the same information could be applied to bark.

I. The Fuel Value of Wood and Bark

The calorific value of dry wood is generally stated from 4,200 to 5,000 cal. per kg (7,560 to 9,000 B. t. u. per lb.)^{1,2,3,4,5,6,7,8,9,10} for non-resinous woods and for resinous woods a somewhat higher value depending on the amount of rosin present. The fuel value of rosin is quoted as 9,400 cal. per kg.^{7,8} or about twice the value for wood. The heating value of moist and wet wood is lowered in proportion to the amount of moisture, also the heating value of non-resinous woods is in direct proportion to the specific gravity^{1,2,3,4,5,7,8,11,12,13}.

The heating value of bark can be considered equal to that of wood but in several instances is noted to be higher (dry weight basis)^{9,10,12}. As with wood, the moisture content affects the available heating value, a bark containing 65 per cent water is reduced from 9,500 B. t. u. per lb. (dry) to 2,665 B. t. u. per lb. About 1½ per cent total gain in available heat is obtained for each per cent decrease in water content^{5,6} and if the a contains 75 per cent water an increase of 250 per cent in heating value is made by drying to fifty per cent.²¹

The heating value of wood or bark can be calculated from the chemical analysis^{9,10,21}. In considering this point it should be noted that Sharples⁹ considers all the oxygen combined with hydrogen as water and hence exerting a lowering effect on the heating value. Bateman claims the oxygen is combined in wood as OH and hence has an appreciable heat value. He has recalculated Sharples results and the information given in references 7 and 8 are on that basis. (The original reference containing the calculations cannot be located.)

References giving methods and results of calorific determinations are 10, 11, 12 and 19. In comparing wood and bark with coal we find that 1, 1½ and 2 cords of wood are about equivalent to 1 ton of coal for heavy, medium, and light weight woods, respectively.^{6,7,8,16,21} Reference 6 gives information on boiler efficiencies when using spent tan bark as fuel.

II. Methods of Drying

It is obvious that the drying of bark for fuel need not be made as delicate an operation as when it is to be used for tannin extraction or the kiln drying of wood or the drying of wood previous to distillation. Nevertheless, these methods have been looked into as they contain features of design that may be of value in the drying of bark for fuel.

Considerable work has already been done at this laboratory regarding the drying of tan bark before extraction and is reported in project 238 (References 14, 15, 16, 17, 18). The various methods of drying described are briefly as follows: 1. The bark is piled on a screen (size preferably of about ¼ inch) in a 10 inch layer and hot air is blown through the layer from beneath. Reduction from 36 per cent to 5 per cent moisture is demonstrated—the maximum temperature of the bark reaching 185°F. This apparatus is in operation (1918) at the Marathon Paper Mills Company, Rothschild, Wis.^{15 17}

2. A continuous drying apparatus is described in which the bark on a moving screen is submitted to the action of a current of hot air which passes alternately through the layer of bark as it passes from the wet or dry end.¹⁸ This is the Bayley Process and the machine is made by the Bayley Manufacturing Company, Milwaukee, Wis. They have done some work on the drying of bark for fuel purposes¹⁸ but no definite information is given.

3. The Hess Warming and Ventilating Co. have an installation at the Nekoosa plant of the Nekoosa-Edwards Paper Company, Port Edwards, Wis. This is a vertical cylinder about 40 ft. high and 10 by 12 ft. in section. The material is fed into the top and removed from the bottom and carried away on a belt conveyor. Hot air is blown through the material, being introduced at two levels. The steam and hot air passes out through a ventilator in the roof.¹⁹ The material is reduced from 26.5 per cent water to 6.7 per cent¹⁹ in a large installation and from 31 per cent water to about 12 per cent in an experimental dryer.²⁰ The maximum temperature of the bark reached 104°F. in the commercial tests.

4. The J. P. Devine Company have made some tests on drying bark by vacuum and at atmospheric pressure in a rotary type of dryer and state a reduction of from 32 per cent water to 1 per cent, the proportionate time being about 2½ hours by vacuum to 6 hours at atmospheric pressure, under identical conditions of steam pressure, etc. The maximum temperature reached was 120°F. by vacuum and 180°F. at atmospheric pressure.²⁰

One observer states that wood waste is now dried for use as kindling wood. And another that wood for distillation is dried by the use of the hot gases from the retorts. Reference 4 mentions the use of a revolving drum heated by waste heat gases of combus-

THE HEATING VALUE OF BARK AND VARIOUS WOODS

Species	Per cent Moist	Per cent Ash	Heat Value		How Determined	Ref. No.
			B.t.u. lb.	Cal. kg.		
Hardwood	Dry	.....	9,410	5,220	Calorimeter-Parr	9
Eucalyptus	Dry	7.3	7,530	4,187	Calorimeter-Atwater	10
Eucalyptus	Dry	12.02	6,840	3,802	Calorimeter-Atwater	10
Eucalyptus	Dry	6.48	7,520	4,179	Calorimeter-Atwater	10
Eucalyptus	Dry	9.04	7,300	4,057	Calorimeter-Atwater	10
Eucalyptus	Dry	6.16	7,430	4,129	Calorimeter-Atwater	10
Eucalyptus	Dry	11.53	7,050	3,920	Calorimeter-Atwater	10
Eucalyptus	Dry	7.53	8,160	4,532	Calorimeter-Atwater	10
Lodgepole pine (flumed)	Dry	.....	9,246	5,130	Calorimeter-Parr	12
Lodgepole pine (unflumed)	Dry	.....	9,386	5,210	Calorimeter-Parr	12
Hemlock (spent)	65%	.....	3,325	1,845	Calorimeter	5
Hemlock (spent)	Dry	.....	9,500	5,270	Calorimeter	6
Juniper	Dry	10.04	7,367	4,180	Calorimeter-Mahler	22
Douglas fir	Dry	0.95	10,820	6,010	Calorimeter-Mahler	22
Western yellow pine	Dry	1.30	9,275	5,140	Calorimeter-Mahler	22
Arizona white oak	Dry	17.38	5,618	3,130	Calorimeter-Mahler	22
Arizona black oak	Dry	9.13	7,839	4,350	Calorimeter-Mahler	22
Average bark from dashers and drum barkers	Dry	.....	8,660	4,810	Calorimeter	24
True bark as above cleaned by brushing	Dry	.....	8,878	4,930	Calorimeter	24
True bark as above cleaned by brushing	75%	.....	1,000	555	Calculated from analysis	21
True bark as above cleaned by brushing	50%	.....	3,500	1,942	Calculated from analysis	21

tion for drying spent tan bark. The use of presses for the reduction of water in bark are mentioned in references 6 and 21 in which the moisture is reduced to about 50 per cent.

Most of the foregoing references give data on power consumption and costs.

III. General

Thelen¹¹ gives some interesting information on the use of wood now wasted and states that 20 per cent of the entire tree is left in the woods and of the 80 per cent remaining only about half is converted into lumber. The bark consists of about 11 per cent. Work in this laboratory by Kress shows the valuable use of bark as a roofing material and in paper products such as wall board. This is reported in project L-219.

Bibliography

- | Reference Number | TITLE |
|------------------|--|
| 1— | The Use of Wood for Fuel. U. S. Dept. Agri. Bul. No. 753. |
| 2— | Blueprint. Available Heat from Wood at Various Moisture Contents and Various Temperatures of Flue Gases. |
| 3— | Chemical Abstracts Vol. 7, page 1415. |
| 4— | Chemical Abstracts Vol. 7, page 3857. |
| 5— | Chemical Abstracts Vol. 10, page 2812. Fuel Value of Spent Hemlock Bark. J. Am. Leather Chem. Assoc., 11, 361-4 (1916). |
| 6— | Chem. Abstracts Vol. 5, page 186. Tan Bark as a Boiler Fuel. School of Mines Quart. 31, 116. |
| 7— | Technical Notes, No. 98. Fuel Value of Wood. |
| 8— | E. Bateman and H. S. Betts—Fuel Value of Wood. |
| 9— | Blueprint, Heating Value of Wood Fuel. C. C. Wilcox. |
| 10— | The Fuel Value of Eucalyptus Wood. Laboratory files. |
| 11— | The Report on the Determination of the Calorific Power, Specific Gravity and Moisture of Mesquite Wood. Project 1000. |
| 12— | Report on the Determination of the Calorific Power of Flumed and Unflumed Lodgepole Pine. Study L-3, Chemistry of Wood. |
| 13— | The Utilization of Waste, by Rolf Thelen. |
| 14— | The Utilization of Waste Bark for Tanning Purposes. Project L-238 ND—Date May 2, 1918. |
| 15— | Same as 14—Progress Report of May 15, 1918. |
| 16— | Same as 14—Progress Report of Aug. 22, 1918. |
| 17— | Same as 14—Progress Report of Nov. 19, 1918. |
| 18— | Same as 14—Progress Report of Jan. 29, 1919. |
| 19— | U. S. Tenth Census Report Vol. IX—Forest Trees of North America. |
| 20— | Report on Barking, Drying and Analysis of Hemlock Bark Rosed at Escanaba, Mich., by the bark peeler of the Michigan Tanning and Extract Co. By Rolf Thelen and F. W. Kressman, 11-13-15. |
| 21— | Waste Bark as Fuel—Pulp and Paper Magazine of Canada. Vol. XX, No. 15, p. 296, April 13, 1922. |
| 22— | Wood Fuel Tests. H. S. Betts. Project No. 10. |
| 23— | Wood Fuel Tests. G. A. Bunell. Project No. 10. |
| 24— | Heating Value of Wood Refuse. Laboratory Files, 3-8 B311. |

REFERENCES OF GENERAL INTEREST

- Utilization of Wood Waste by Chemical Means. By H. F. Weiss. Project L-219. Use of Bark for Paper Purposes. Statistics of the Tan Bark and Tanning Extract figures as compiled from the Census of 1910. By-products of the Lumber Industry, Dept. of Commerce, Special agent series, No. 110.

Arrangement for Chemical Exposition

The Eighth National Exposition of Chemical Industries will be held this year in the Grand Central Palace, New York City, during the week September 11-16, inclusive. It will follow immediately upon the fall meeting of the American Chemical Society. "Raw Materials, Machinery, Products," is the way the exposition is described and is intended to carry this main impression. The raw materials are exhibits of the natural resources from out of the earth and above the earth. The machinery exhibits consist of apparatus and equipment and instruments for control, precision, recording, gauging, measuring, and machinery for every mechanical operation in the manufacture of products from the raw materials. The products themselves are the finished products and the exhibits will contain those of organic, and inorganic origin, of solid, liquid, or gaseous form, and of every conceivable nature. Many new things upon which manufacturers were working when the war ended and which have been since more leisurely perfected, will be shown for the first time. Industrial progress continually calls for advancement and progress in manufacture and each year we have many notable improvements in the exhibits at the exposition. Each year there are many new articles exhibited.

The managers report that three full floors of the Grand Central Palace are already taken for the exposition and part of the fourth.

There are at this time 350 exhibitors who have contracted for their space locations. In the exposition there are two special sections, one upon the subject of fuel economy where exhibits intended for the more efficient use of fuel, its combustion, distribution or control will be made; another where the subject of shipping containers will be given considerable attention and will have to do with the container itself, whether of metal, wood, fiber, paper or the cooerage of slack or tight barrels, tanks and towers with machinery for packaging, labeling, handling and conveying the packaged material and lastly making it ready for final shipment. This section will furnish the complete ideal for any industrial plant. There will be groups of exhibits of glass and ceramic products. Laboratory equipment will be thoroughly represented. There will be a group of Canadian exhibits where the natural resources of the adjoining Dominion will be made and there will also be a Southern Section.

The program of the exposition has been outlined and work is now in progress upon it and it may be expected to compare fully with the high standards of the preceding expositions. As has been the custom there will be exhibits of motion pictures covering all phases of the chemical industries and the exposition will hold many interests for every visitor.

The office of the managers, Charles F. Roth and Fred W. Payne, is in the Grand Central Palace, New York City, and inquiries should be directed to them there.

Rosin Size

By WALTER BAIN IN "MAKING PAPER."

Rosin size is usually made as follows: Soda ash is dissolved in a tank of hot water heated by steam coils to approximately boiling and allowed to dissolve over night. In the meantime, the rosin is crushed and put in the cooking drum. The soda ash is run in and after the foaming has ceased the lid is clamped down tight and steam turned in the heating coils. The cooking is continued for about eight hours, at a pressure of four to five pounds. When the cooking is complete the thick size is forced over into the storage tanks by pressure in the drum. The thick size is drawn off from the storage tanks to a measuring tank to make the thin size. The thin size is made by adding the thick size to a tank of hot water and dissolving by circulating the water and the size with a pump that draws the liquid from the bottom of the tank and delivers it again to the top. At the Camas plant, when the dissolving is complete, the size is pumped to the storage tank on the roof above the beater room, where it can be delivered to the beaters by gravity.

[I wonder how many mills adopt this practice.—EDITOR.]

Finest Work on Pulp Manufacture

C. E. Libby, professor of pulp and paper manufacture at the New York State College of Forestry, Syracuse, N. Y., has written the following letter to J. N. Stephenson, the editor of the series of text books on the manufacture of pulp and paper which is being published by the Vocational Educational Committee of the Pulp and Paper Industry, regarding volume III, which explains itself:

"This book is the finest contribution to the literature on the pulp and paper manufacture which I have ever obtained and you may be assured that I shall very heartily recommend its purchase by our students. The book will be invaluable to us for, as you know, we emphasize the production of wood pulp. I believe that you and your associate editors are to be congratulated on the authorship of such a valuable text book."

John Strange Paper Co. Issues Bonds

[FROM OUR REGULAR CORRESPONDENT.]

MENASHA, Wis., May 22, 1922.—A bond issue of \$500,000 is being floated by the John Strange Paper Company to finance improvements and additions to the plant. These additions have not been announced. The bonds are secured by a trust deed on the property.

CURRENT PAPER TRADE LITERATURE

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

Comparative Methods of Determining the Lignin Content of Chemical Pulp.—E. Heuser and G. Wenzel.—*Papierfabr.*, xix, 1177-1184, (Oct. 21, 1921).—The various methods are discussed and compared with each other. The method of König and Rump or of Becker gives too high values because of the separation of colloidal material with the lignin. The method of Willstätter and Zechmeister may be applied to this determination provided the pulp is hydrolyzed with 7 parts of hydrochloric acid for a sufficient time, diluted with 10 parts of water and heated to boiling for about 10 minutes. The method of Krull (treatment with hydrochloric acid gas) gave values much too high, though the method might be modified by sufficient study. The method of König and Rump (1 per cent hydrochloric acid) likewise gave too high results. Comparison is made of these results with indirect methods such as the methyl and methoxy numbers and the phloroglucinol method of Cross and Bevan. It would seem that at present the modified Willstätter and Zechmeister method gives the most reliable results.—I. G.

Distribution of Fillers in Finished Paper.—E. Albrecht.—*Wochbl. Papierfabr.*, lii, 3441, (Oct. 22, 1921).—From the behavior of ink marks on paper it is considered that the sizing and filling materials are to be found invariably near the under side, that is the wire side, of the paper. The fact that heavily loaded paper has the upper side whiter than the under side is due to the fact that the filling material, when it finally reaches the wire after travelling through the layers of stock, is carried away with the back water, so that the under surface of the paper is practically free from filling material; while on the other hand the upper surface contains some of it, even though small amounts only.—I. G.

Pure Cellulose from Waste Wood.—Ger. Patent No. 341,673, Drim, Futter-Mittel und Zellstoff, G. m. b. H., Aug. 7, 1918.—The woody mass, which is previously subjected to a steaming and extraction process, is ground up into a fine wet mass, which is subjected to the action of chlorine gas. The process is a continuous one, a steady stream of chlorine gas passing in countercurrent to the stream of wet, finely-divided wood.—I. G.

Freeness Tester.—Ger. Patent No. 342,574, F. R. Roller and K. Ferda, Jan. 30, 1921.—A machine for testing groundwood to determine whether it is wet or free.—I. G.

Wood Pulp Grinders.—Hoyer.—*Wochbl. Papierfabr.*, lii, 4334-4346, (Dec. 31, 1921).—Details are given regarding the feeding of the presses, the charges that they can handle, the choice and the sharpening of the stones, as well as the regulation of the wood pulp grinders.—I. G.

Determination of Sulphur Dioxide and Lime in Sulphite Liquor.—B. Deutsch.—*Wochbl. Papierfabr.*, liii, 314, (Jan. 28, 1922).—A comparison of Winkler's Höhn's and Sander's methods, in which the lime content is calculated from the total and free sulphur dioxide contents. The author suggests determining lime as oxalate, titrating total sulphur dioxide by means of standard iodine and starch indicator, and calculating the free sulphurous acid. This method would have the objection that the lime is not all combined with sulphurous acid, part being combined with sulphuric acid; so that the combined sulphurous acid would be too high and the free too low. A correction could, however, be made by determining sulphuric acid. The potassium permanganate methods was also tested out but was found to give uncertain results, probably due to the formation of dithionates.—I. G.

Utilizing Vapors from Sulphite Blow Pits and from Sulphite Waste Liquors.—Ger. Patent No. 344,955, E. Muerbe, Dec. 2, 1921.—The vapors are passed through a gas separator to separate the sulphur dioxide from the condensed steam, and after cooling to about 25 degrees C. the sulphur dioxide is redissolved in the condensate, any undissolved gas being fed to the sulphite towers. The sulphurous acid combined with the lignin in the spent liquor, which amounts to from 20 to 25 per cent of the fresh liquor used, can be recovered by the use of the heat in the vapors. The combined acid is evolved in the course of the treatment of the liquor in autoclaves on applying heat, and the lignin is separated out of the liquor at a high pressure (about 20 atmospheres) and at a high temperature (200 to 210 degrees C.).—I. G.

Decomposition of Sulphite Waste Liquor.—Ger. Patent No. 341,857, A. S. Sulfitkul, Oct. 26, 1919.—The waste liquor is decomposed at high pressure and temperature with splitting off of the chemically combined sulphur dioxide. It is first sent through a pre-heater in a continuous stream and thence through a decomposing vessel. The liberated sulphur dioxide is drawn off at the top, while the decomposed liquor and the lignin which is precipitated therein is drawn off continuously at the bottom.—I. G.

Protection of Containers Against Acids in Sulphite Waste Liquors.—Ger. Patent No. 341,765, Hugo Lauber, March 2, 1919. Concrete tanks, used to store sulphite waste liquors, are protected against the action of the acid in these liquors by coating the walls with a layer of gypsum.—I. G.

Efficient Utilization of Heat in Stationary Boilers.—B. Haas.—*Chem. Ztg.*, xlv, 1035-1037, (1921).—The experiments conducted by the writer reveal the fact that the digesters used in paper mills which possess dimensions in the ratio of 5:6.4 or 3.6:5.55 require considerably less heat than those with dimensions in the ratio of 4:10 or 3:8. An explanation of this fact is given. Automatic digesters with dimensions in the latter ratio will give more economical results when the heating coils are removed from the walls as far as is practically possible.—I. G.

Cement Lined Pulp Digester.—Ger. Patent No. 349,396, E. Belani.—The interior iron wall of the digester is well cleaned and then coated with Portland cement wash. After this has dried, a coating of cement, made in accordance with special mixing proportions and of a definite thickness, is applied. Small spiral wires are used for reinforcing the cement. They are arranged in a definite geometric pattern and serve to increase the tensile strength of the lining. The use of these spirals makes the coefficient of expansion of the lining practically equal to that of the iron shell, so that the formation of fissures in the lining is prevented and the acid liquor cannot penetrate through the cement and attack the shell.—I. G.

The Heat Problem in the Pulp Industry.—G. Sundblad.—*Zellstoff u. Papier*, i, 208-209, (1921).—The Stalnacke digesting process makes possible the working with about 20 per cent less liquor. The liquor is made stronger and less of it is used. After the digestion is complete the liquor is drawn off while still hot. In this way about 38 kilos of coal are saved per ton of pulp produced. The channeling of the presses, as recommended by Schaaning, makes it possible to press out about 50 per cent of the water, thus saving about 1,150 kilos of steam per ton of pulp. In the Ullgren process a part of the heat in the air and steam leaving the drying chamber is utilized for pre-heating new air. The steam accumulator,

devised by Ruths, results in savings in coal amounting up to 20 per cent. Several processes for the recovery of combustible material from the waste liquors are described.—I. G.

Purification of Pulp.—Ger. Patent No. 343,025, Exporting genieure F. Papier u. Zellstofftechnik G. m. b. H., May 8, 1920.—An apparatus for removing knots and heavy constituents from slush pulp. A semi-circular canal, which increases in width constantly, is formed in the direction of flow of the pulp, which is led therethrough. The semi-circular canal is open upwards, so that the direction, as well as the speed, of the stream of stock is changed.—I. G.

Process for Engine-Sizing Paper.—Fr. patent No. 520,102, Zellkoll G. m. b. H., Germany.—*Monit. Papeterie Française*, lii, 446 (July 15, 1921). Instead of the usual rosin-alum process, an easily dissociated organic salt of alumina is used without any rosin. The organic aluminum salt may be added as such to the beater or else aluminum sulphate (4 per cent on the weight of the dry pulp) is added, and an equivalent quantity of the harium salt of the organic acid is added, giving by double decomposition the dissociated salt of aluminum. Aluminum formate is particularly suitable for the purpose.—A. P.-C.

Apparatus for Drying Sheets of Gummed or Varnished Paper. Fr. patent No. 516,224, E. and H. Bush, England, Dec. 3, 1920.—*Papier*, xxiv, 254-255 (June, 1921); *Monit. Papeterie Française*, lii, 408-409 (July 1, 1921).—A. P.-C.

Expansible Cylinder Mould for Paper Machines.—Fr. patent No. 516,316, R. Richardson and J. F. Key, England, Dec. 4, 1920.—*Papeterie*, xliii, 450-451 (May 25, 1921); *Monit. Papeterie Française*, lii, 362-363 (June 15, 1921); *Papier*, xxiv, 256-258 (June, 1921).—A. P.-C.

Determination of the Chlorine Consumption of Pulps (as a Measure of the Degree of Digestion).—R. Sieber.—*Zellstoff u. Papier*, i, 181-184, (Nov. 1, 1921).—(Cf. this journal, lxxiii, No. 8, 38, Aug. 25, 1921.)—The determination must be carried out at a definite alkalinity of the reaction solution and at a constant temperature so as to make it independent of the alkalinity of the chlorine solution. Prepare two bleaching powder solutions, the first with 30 g. and the second with 80 to 90 g. Filter and keep in Brown flasks under a little paraffin oil. By mixing these two solutions it is possible to obtain the desired alkalinity. These "mixed solutions" are stable for about a week under the oil.—I. G.

Removing Printer's Ink from Paper.—U. S. Patent No. 1,406,322, A. F. Allen et al., assignors to Tidewater Paper Mills Co., Feb. 14, 1922.—Waste newspapers are macerated in an ordinary beating engine, with water, at a consistency of 6 per cent, and at a temperature of 140 degrees F. To the hot stock enough soda or other alkali is added to produce a decided alkalinity, which varies with the conditions under which the process is conducted. After beating for from 10 to 30 minutes, sufficient chipped or granular soap, preferably laundry soap, to produce a saturated solution and the beating is then continued until the oil, in the ink, is thoroughly emulsified. Sufficient cold water is then added to bring down the consistency to 3 per cent and to reduce the temperature to 100 degrees F. The effect of the cold water is not only to thin down the solution but also to throw out of solution more or less of the soap. As the beating proceeds dark soapy bubbles of oil, pigment and soap rise to the surface and are removed. A special skimming mechanism is provided which may be located at any convenient point of the beating engine. After the skimming operation the pulp is given a change of water. It is then ready for use and may be lapped on an ordinary wet machine.—I. G.

Rapid Circulation Beater.—Paul Ebbinghaus.—*Wochbl. Papier-*

fabr., lii, 4155-4156, Dec. 17, 1921. In the author's experience the increased gradient from the backfall to the front of the roll seemed to have caused too great an absorption of stock and to have affected the nature of the beating.—I. G.

Heating of the Stuff in the Hollander.—*Papierfabr.*, xix, 1399-1400, (Dec. 2, 1921).—Very warm stuff contains much finer flakes of the rosin size than colder stuff, consequently the particles of the size escape more easily. Warm stuff in the case of paper fiber used for spinning also results in a reduction of the strength of the fiber and on long continued beating the fibers become too brittle. In disc beaters the heating is brought about through the uninterrupted friction on one and the same surface. In this case the beating increases more rapidly the thinner the layer of charge in the machine. The production of heat increases with the width of the rubbing surface and with increasing thickness of the knives.—I. G.

Paper Size.—Ger. Patent No. 347,014, Farbenfabriken vorm. F. Bayer & Co., Jan. 12, 1922.—A sizing for paper is made by the action of salts of the halogenated fatty acids on the metallic salts of cellulose, or its decomposition products. To this there are added aluminium compounds. For example, sodium chloracetate is made to react with sodium cellulose with the formation of the sodium salt of cellulose acetic acid. The paper is first immersed in this solution and then in a solution of formate of alumina.—I. G.

Coumarone Resin as Paper Size.—Ger. Patent No. 348,063, Ruetgerswerke A. G.—About 100 parts of crude naphthenic acid, as obtained in the refining of petroleum, are dissolved in a caustic lye and the solution evaporated to a syrupy consistency. The sodium salt paste is melted with 100 parts of coumarone resin. The product will emulsify easily with water. In place of naphthenic acid, phenyl-xylyl-ethane sulphonic acid may be used. In another example the coumarone resin is dissolved in benzene; the hot solution is shaken with sulphuric acid; the acid resin formed is removed, and the benzol solution is neutralized with soda solution. The neutralized solution is then evaporated to the consistency of a paste, and a viscous, hard, resinous mass is obtained which also emulsifies well with water.—I. G.

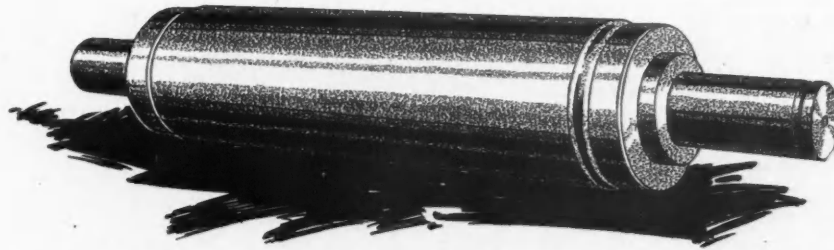
Sizing Paper with Bakelite.—Ger. Patent No. 342,255, Holzverkohlungs-Industrie, A. G., Oct. 15, 1921.—Addition to Ger. Patent No. 339,594.—The sizing of the paper is accomplished with alkaline solutions, which contain condensation products of phenols with aldehydes, or of naphthols and small amounts of alkali sulphites or other substances which are suitable for preventing the absorption of oxygen by the solution of resins. In general an addition of 0.5 per cent of sodium sulphite to the alkaline solution of the resin is entirely sufficient to prevent discoloration, which is generally caused by the oxygen of the air, and to obtain a well sized white paper, which is faultless as far as the color is concerned.—I. G.

Electrical Drier for Paper.—U. S. Patent No. 1,401,303, William Charles Baldwin, Dec. 27, 1921.—Same as Can. Patent No. 198,642.—See *Pulp and Paper*, xix, 307, March 17, 1921.—I. G.

Paper Drying Apparatus.—Ger. Patent No. 343,027, H. L. Kutter, May 8, 1915.—A paper drying device in which the directly heated drying cylinders are arranged in vertical series in such a manner that the cylinders of one series are placed in the center in between two drying cylinders of the other series, and the continuous band of paper is passed in snake-like fashion over the cylinders.—I. G.

Felt-Cleaning Device for Paper Machines.—U. S. Patent No. 1,406,821.—E. D. Bennett, Feb. 14, 1922.—Same as Can. Patent No. 196,497. See *Pulp and Paper*, xix, 281, March 10, 1921.—I. G.

The Manufacture of Hard Pasteboard.—H. Postl.—*Wochbl. Papierfabr.*, lii, 4154, (Dec. 17, 1921).—A discussion of a number



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of conditions that must be observed in the course of such manufacture.—I. G.

The Production of Leather-Board.—H. Postl.—*Papierfabr.*, xix, 1358-1365, (Nov. 25, 1921); 1429-1433, (Dec. 9, 1921).—Data regarding the choice and preliminary treatment of the wood, steaming, digesting, grinders, the feed to the presses and their charge, splinter catchers and screening devices, horizontal and vertical refining engines, the board machine and auxiliaries, the coloring of the product and the treatment of the spent liquor accumulated in the course of the operations.—I. G.

Paper Lacquering Machine.—Ger. Patent No. 340,433, O. Poeppel, July 29, 1920.—The lacquering machine possesses an electrically heated coating roll.—I. G.

Impregnating Composition for Paper.—U. S. Patent No. 1,401,524, J. Crespo, Dec. 27, 1921.—The composition is made up of: rosin 15,000 parts, stearin 1,500 parts, paraffin 1,500 parts, and sulphur 100 parts. These ingredients are mixed together and melted. The paper articles are dipped into the hot mixture.—I. G.

Marbled Paper.—Ger. Patent No. 343,028, H. Beyer-Preusser and F. Glasmann, Oct. 27, 1921.—Marbled paper with different color lines and color specks arranged alongside, or on top of, one another, of any form or size, produced with the aid of colored pencils. The dry pencil is led over the dry paper by means of a moveable arm which traces a design. In a single operation it is possible to obtain any sort of design in any desired color.—I. G.

Blistery Papers.—H. Postl.—*Wochbl. Papierfabr.*, lii, 3608 (Nov. 5, 1921).—Description of methods of preventing this defect.—I. G.

Objects from Paper Fibrin.—U. S. Patent No. 1,401,979, P. E. Winnertz and F. E. Neubert, Jan. 3, 1922.—Device for making hollow articles from thin solutions of paper fibrin (pulp) in several coats by precipitation of these coats upon wire cloth forms. The single coatings are couched and the excess liquor is sucked off in a suitable manner. Any thickness can be obtained in the finished article by varying the number of coatings applied. Moulds are heated with electricity for the final drying operations.—I. G.

Transporting Kaolin in Paper Mills.—Leonhardt.—*Wochbl. Papierfabr.*, lii, 4336-4337, (Dec. 31, 1921).—Description of the method used to transport kaolin from the car to the grinder and then to the dissolving tanks.—I. G.

Engine Sizing for Paper.—U. S. Patent No. 1,401,525, J. A. Decew, assignor to Process Engineers, Inc., Dec. 27, 1921.—The properties of rosin and alumina precipitate used in engine sizing paper are improved by the coagulation of other colloidal materials in the presence of one of these ingredients before the other is added. The rosin soap is first brought into dilute solution in water in the presence of mucilaginous material and a coagulating agent. To this end rosin soap containing 2 per cent of glue is dissolved in water to form a 1 per cent solution. Sufficient formaldehyde is added to render the glue insoluble in water. The mixture is then fed to the stock in the beating engine where the rosin soap is coagulated by the sulphate of alumina. Other ways of carrying out the process are described. Resulting engine size will give a better finish to the paper and will resist injury usually experienced during machine drying. Gelatin, starch products, casein, natural gums, etc., may be used instead of glue.—I. G.

List of Abbreviated and of Full Titles and of Addresses of the Journals from Which Abstracts Have Been Prepared for This Issue.

Chem. Ztg.....Chemiker Zeitung. Walter Roth, Cöthen, Germany.
Papierfabr.Der Papier-Fabrikant. Otto Eisner, Oranienstr. 140-142, Berlin, S. 42, Germany.
Wochbl. Papierfabr.....Wochenblatt für Papierfabrikation. Günter-Staib in Biberach a. d. Riss, Württemberg, Germany.
Zellstoff u. Papier.....Zellstoff und Papier.

A. P. & P. A. Publications

The American Paper and Pulp Association announces the publication of the following pamphlets, which are available at cost on application to the American Paper and Pulp Association, 18 East 41st street, New York:

American Paper and Pulp Association, Special Report No. 6, "Looking Forward in the Paper Industry." A compilation of addresses given at the 45th annual convention, April, 1922, including discussions of market conditions by P. T. Dodge, president International Paper Company, Col. B. A. Franklin, vice-president, Strathmore Paper Company; and addresses by Grosvenor M. Jones, Chief of the Paper Division, Bureau of Foreign and Domestic Commerce, Dr. Warren M. Persons, Committee on Economic Research, Harvard University, U. S. Senator, Frank B. Willis, and E. J. Cattell. Price25 cents

Salesmen's Association of the Paper Industry, Special Report No. 4, "Better Salesmanship." Addresses before the annual convention in April, 1922, including Prof. Harry R. Wellman, Amos Tuck School, Dartmouth College, Congressman Dan A. Reed and others. Price25 cents

Woodlands Section Series, No. 1, "Proceedings of April, 1922, convention, including discussions of many of the practical problems of the woods operations of the paper industry. Price50 cents

Wife of General Manager Seriously Ill

The following item is printed in *Mead Corporation* the mill magazine of the Mead Pulp and Paper Company. "Mrs. H. P. Carruth, wife of our General Manager, has been seriously ill at her home on Bell's Hill for the past few weeks. Her condition is quite serious and but small chance is held out for her recovery. We feel quite sure that the employees of this mill will deeply regret learning of Mrs. Carruth's illness, and that the very best wishes of all are extended to her and to the members of her family in that a rapid recovery may be effected, despite the difficulties to be surmounted."

Additional Contributions to Vocational Fund

The Paper Makers' Chemical Company, Easton, Pa., a previous contributor to the Vocational Education fund of the Pulp and Paper Industry has recently sent the committee an additional check for \$50 with the good wishes of the company for the carrying on of the work that is in progress.

Support of this kind is greatly appreciated by the committee at the time when such help is essential to the completion of the undertaking.

Standardization of Paper Mill Felts

The Joint Committee on Felts has received encouraging reports from paper mills and felt manufacturers indicating that progress is being made in endorsing the proposal to standardize the sizes of paper mill felts.

The proposal made in this regard is that felts for pulp wet machines and Fourdrinier paper machines be standardized to even feet in length and to even inches in width; on multi-cylinder machines to even ten feet in length and to even inches in width.

Parchment Paper Co. to Build Addition

PASSAIC, N. J., May 22, 1922.—The Paterson Parchment Paper Company has applied for a permit to Building Inspector John Jellemo for erecting a three-story brick building on its premises in Eighth street. The estimated value of the new building is placed at \$50,000.

Howard Bond



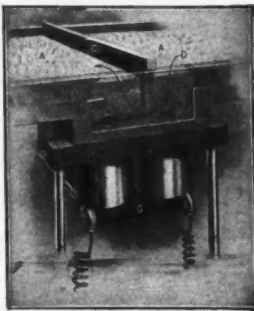
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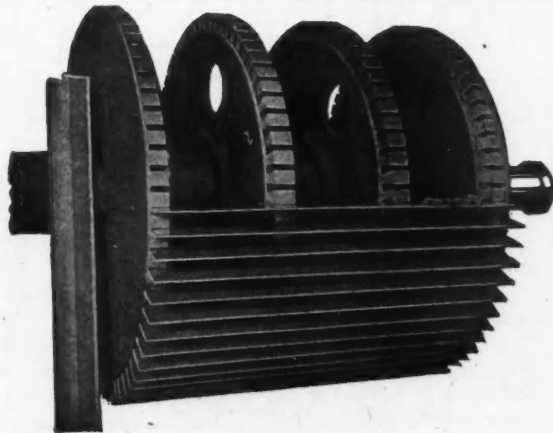
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Cost Accountants***

You are hereby notified that you are to arrange your affairs and proceed with dispatch to

Kalamazoo, Michigan

so as to arrive there no later than

June 1st, at 9 P. M.

that you may assist in the opening of the Joint Convention of Cost Accountants and Mill Superintendents and are to stay there all through the sessions, as at each meeting there are subjects of interest to be discussed.

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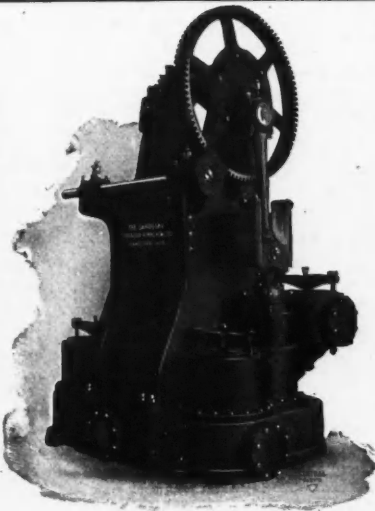
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(Signed) General Manager.



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New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, May 24, 1922.

The demand for practically all varieties of paper is gradually increasing. The demand for news print is especially encouraging.

Book paper merchants, however, still find the market in a rather spotty condition, the \$6.25 base price on super being not too firm. Numbers of inquiries are still being received, however, and activity is becoming more pronounced.

Fine papers have followed the example of many other branches of the industry in that they have been improving gradually. The general tone of the market is much better, and the rapid strides which are being made in the export of fine papers, especially among the better grades of sulphate bonds, point to a general strengthening of the market in the near future.

Tissue is coming into its own again, and, despite the havoc wrought in the market by the clothing strike and the general dullness in the shoe industry of late, dealers are beginning to receive many inquiries, some of which result in orders. Prices are generally conceded to be fairly firm.

Wrapping papers are in much stronger demand than they were several months ago, and merchants agree that the general condition of the market is much firmer. Imported kraft is quoted at the somewhat stiffer price of 6.00 to 6.25 cents a pound, in the face of the slight drop taken by No. 2 domestic last week.

That business is slowly but surely coming back to board manufacturers and merchants is evidenced by the increasingly larger number of inquiries. Boxboard has been the mainstay of the market during the many months of depression, and is continuing in good demand, and it is generally believed that the long period of slack business is rapidly nearing an end.

Mechanical Pulp

Dealers report a considerable increase in orders for mechanical pulp and the belief is current that the present market prices are about rock bottom under existing conditions. For this reason confidence has been restored almost completely in the groundwood market, and none but the most optimistic predictions may be made for the immediate future. The boom which is being enjoyed by the news print industry is reflected in the consumption of mechanical pulp to a great degree, and at the present rate of progress, there is no let-up in sight.

Chemical Pulp

The demand for chemical pulp is steady and mills are beginning to place orders for larger tonnages, many of them contracting over their year's requirements. This would indicate that consumers are disposed to believe that prices have attained the lowest level they will reach in some time. It is generally acknowledged that there is a possibility of a slight stiffening in the market, if there is to be any change. This period should offset the usual slack summer demand and maintain the firmness of the prices now quoted.

Old Rope and Bagging

Due to the fact that many of the mills have reduced their stocks sufficiently to again enter the market, the little rope available has been bought at higher figures and Manila grades are considerably more active. Bagging still remains in the rut, much of it being rejected due to improper or careless packing. In defense of packers, however, it may be said that rope prices have not warranted the extra labor required to put up the commodity in proper condition, and until confidence has been restored amongst buyers, this condition will probably prevail.

Waste Paper

Among the better grades of waste papers the demand exceeds the supply and conditions are rapidly nearing the point where mills will find it difficult to secure adequate supplies to meet their re-

quirements. As opposed to the ease with which any quantity could have been purchased several months ago, it is now hard to buy five or ten carloads of soft white shavings at any price. The reluctance of mills to buy tonnage ahead at that time may be contrasted with the unwillingness of packers to sell ahead with the market in its present improved condition. A general stiffening of price has taken place with the exception of kraft and manila cuttings, although the latter are moving readily. Old manilas are firm and some grades are stiffening.

Rags

There is a decidedly better feeling in the rag market and prices show a slight advance. Whites and bleachable grades of new and old rags are in good demand and there is some improvement in the lower grades. This is particularly true of roofing, which has been rather sluggish for some time. Nothing more indicative of a return of prosperity could be found than a pronounced change for the better in roofing stock, as it seems to be the key to the rag situation, all other grades following suit once it starts upward.

Twine

Raw jute fibre is reported to have advanced in price during the past week, but with this exception the market has shown practically no signs of activity, prices being quoted on a nominal basis only. This advance in raw material may, however, precipitate a general strengthening in the other grades of twine, many of which are being quoted at prices that admit of no profit. There seems to be no room for a further decline in prices in this market, and the general impression is that when a decided change comes it will be for the better.

Albany Felt Co. Issues House Organ

The Albany Felt Company of Albany, N. Y., has recently made another addition to the field of house organs in the publication, *Alfelco Facts*. The purpose of the editor is warmly expressed in the opening lines of his preface: "Let's shake hands. We ought to be better acquainted with one another—you paper makers and we felt makers. Think what it would mean to us all if we could have a conference occasionally where the practical men of these allied trades could 'face realities' together."

While the publication contains but fifteen pages, it is ably edited and thoroughly interesting. The first number deals with "The Art of Felt Making," and mentions that the company is called upon to make one hundred and fifty different styles of felts in order to meet the varied requirements of paper makers. Part I of this series is given in the current issue, and the felt making process is traced through the picking and carding of the wool.

Following a short article on the "Purchase of Felts," the editor has instituted a column entitled "The Broke Box" which is open to correspondents and is devoted to the betterment of understanding between paper makers and felt makers. The publication ends with a few humorous lines which the editor appropriately styles, "Long Felt Wants." The little magazine is well illustrated and, on the whole, seems to be a definite step toward a better and more intelligent understanding between the paper and felt industries.

J. W. Sewall Says Business Is Improving

OLDTOWN, Me., May 22, 1922.—James W. Sewall, forest engineer and timber expert, with offices at Washington, D. C. and Oldtown, Maine, reports that while business in his line is still quiet he is satisfied that conditions are very steadily improving. Activity in timberland purchases cannot as yet be said to exist, but some lands and timber are now being optioned with view to purchase and operation. This is decidedly different from last year at this time when the market was decidedly quiescent.

Mr. Sewall has recently been on quite an extended trip through the eastern states and looks forward to a reasonably busy season. His organization has over fifty men engaged in timber crushing.

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 Filter Paper68 cs., 22 bls., 60 rolls
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 Hudson Trading Company, by same, 177 bls.
 Seggerman Brothers, by same, 186 rolls, 17 bls.
 Pulp & Paper Trading Company, by same, 93 bls., 990 rolls.
 O. H. Sawyer, by same, 64 bls.
 M. O'Meara Company, by same, 277 bls., 206 rolls.
 Arkell Safety Bag Company, by same, 667 rolls.

PAPER

F. W. Devoc & Reynolds Company, Lafayette, Havre, 2 cs.
 Kern Com' Company, Minnekahda, Hamburg, 352 rolls.

D. S. Walton & Co., by same, 940 rolls.
 P. H. Petry & Co., Mt. Clay, Hamburg, 14 cs.
 Bernard Judae & Co., Saxonia, Hamburg, 8 bls.
 Republic Bag & Paper Company, Chickasaw, Hamburg, 4,751 rolls.

B. F. Drakenfeld & Co., Scythia, Liverpool, 3 cs.
 D. S. Walton & Co., Stockholm, Gothenburg, 213 bdls., 5,027 rolls.
 Chemical National Bank, by same, 86 bls., 278 rolls.

International Acceptance Bank, by same, 26 rolls, 210 bls.

M. O'Meara Company, by same, 203 bls.
 J. P. Heffernan Paper Company, by same, 167 bls.

C. G. Winans Company, by same, 73 bls., 710 rolls, 5 bdls.
 Gilbert Paper Company, Stockholm, Gothenburg, 1,160 rolls.

C. K. MacAlpine, by same, 63 bls.
 Cornell Corp., by same, 90 rolls.
 M. M. Cohen, by same, 189 rolls, 105 bls.
 The Celluloid Company, by same, 6 rolls.
 Japan Paper Company, by same, 14 cs.
 Becker Paper Corp., by same, 71 bls., 28 rolls.
 Whiting & Patterson, Paris, Havre, 14 cs.

RAGS, BAGGINGS, ETC.

Castle, Gottheil & Overton, La Bourdonnais, Havre, 30 bls. rags.

Crane Company, Assyria, Glasgow, 22 bls., paper stock.

Ladenburg, Thalman & Co., Gothland, Antwerp, 44 bls. flax waste.
 Ladenburg, Thalman & Co., Niagara, Bordeaux, 13 bls. rags.

Castle, Gottheil & Overton, Janus, Marseilles, 51 bls. new cuttings.

D. M. Hicks, Inc., La Touraine, Havre, 250 bls. bagging.

Stone Brothers & Sherwin, by same, 30 bls., rags.

B. D. Kaplan Company, by same, 62 bls. rags.
 Stoughton Mills, by same, 62 bls. rags.

Wilkinson Brothers & Co., Inc., Peninsular State, Bremen, 52 bls. rags.
 Irving National Bank, Maine, London, 17 bls. rags.

J. Periman, Pastores, Havana, 8 bls. rags.
 M. O'Meara Company, Chickasaw, Hamburg, 18 bls. rags.

F. P. Gaskell & Co., by same, 57 bls. rags.
 Castle, Gottheil & Overton, by same, 16 bls. rags.

E. J. Keller Company, by same, 40 bls. rags., 85 bls. bagging.

Salomon Brothers, Inc., by same, 40 bls. rags., 15 bls. flax waste.
 Royal Manufacturing Company, by same, 7 bls. cotton waste.

Irving National Bank, by same, 66 bls. paper stock.
 B. D. Kaplan & Co., Scythia, Liverpool, 971 bls. rags.

Atlas Waste Manufacturing Company, Havana Maru, Kobe, 68 bls. cotton waste.
 First National Bank of Boston, by same, 350 bls. cotton waste.

First National Bank of Boston, Paris, Havre, 29 bls. rags.

Stone Brothers & Sherwin, by same, 79 bls. rags.
 Stoughton Mills, by same, 73 bls. rags.

OLD ROPE

Brown Brothers & Co., Bristol City, Bristol, 194 coils.

American Exchange National Bank, Columbia, Glasgow, 78 coils.
 Chemical National Bank, Chickasaw, Hamburg, 55 coils.

Castle, Gottheil & Overton, Pt. MacQuarrie, London, 34 coils.

American Express Company, Gothland, Antwerp, 17 bls.
 Pollack Brothers, R. Maria Christina, Corunna, 31 coils.

CASEIN

A. Klipstein & Co., Vulcan City, London, 300 bags.

CHINA CLAY

English China Clay Sales Corp., Bristol City, Bristol, 100 casks.

WOOD PULP

Tidewater Papermills Company, W. Melbourne, Liverpool, N. S., 8,141 bls., 814 tons.

Tidewater Papermills Company, M. F. Anderson, Liverpool, N. S., 6,122 bls., 612 tons.

Tidewater Papermills Company, Barnholm, Port Au Lie, Quebec, 6,049 bls., 604 tons.

Brown Brothers & Co., Minnekahda, Hamburg, 1,000 bls.

H. Hellesen & Co., Seydlitz, Bremen, 1,470 bls.
 Brown Brothers & Co., Chickasaw, Hamburg, 525 bls., 105 tons.
 Seggerman Brothers, Stockholm, Gothenburg, 500 bls.

E. M. Sergeant & Co., by same, 1,260 bls.

BOSTON IMPORTS

WEEK ENDING MAY 20, 1922

J. A. & W. Bird & Co., Bronte, Buenos Aires, 455 bags cascin.

N. J. Bartlett & Co., Mackinaw, Antwerp, 1 case books.

F. A. Glass & Co., by same, 318 rolls paper.
 McLaughlin & Freeman, Caledonian, Manchester, 10 cs. tissue paper.

International Purchasing Company, Meltonian, Liverpool, 95 coils old ropes.

Train, Smith & Co., by same, 301 bls. bagging, 25 bls. new cuttings.

A. Katzenstein & Co., Caledonian, Manchester, 119 bls. new cuttings.

Train, Smith & Co., by same, 29 bls. new cuttings.

M. O'Meara Company, Mackinaw, Antwerp, 11 bls. new cuttings.

First National Bank Corp., by same, 110 coils rope.

International Purchasing Company, by same, 1,039 coils rope.

Train, Smith Company, by same, 41 coils rope.
 Sturgis Millbourne, by same, 261 bls. waste paper.

R. F. Downing & Co., by same, 137 bls. waste paper.
 E. Butterworth & Co., by same, 158 bgs. hide cuttings.

E. Butterworth & Co., Meltonian, Liverpool, 262 bgs. hide cuttings.

E. Butterworth & Co., Caledonian, Manchester, 363 bgs. hide cuttings.

E. F. Russ Company, by same, 274 bgs. hide cuttings.

E. F. Russ Company, Meltonian, Liverpool, 220 bgs. hide cuttings.

PHILADELPHIA IMPORTS

WEEK ENDING MAY 20, 1922

S. Bickenstein Sons, H. Luckenbach, Vancouver, B. C., 23 bls. rope, 33 bls. rags.

M. O'Meara Company, Chickasaw, Hamburg, 42 bls. rags.

Brown Brothers & Co., by same, 30 bls. wrapping paper.

Republic Bag & Paper Company, by same, 230 rolls wrapping paper.

F. Euders & Co., by same, 425 bls., 65 tons wood pulp.

Castle, Gottheil & Overton, by same, 150 bls., 30 tons wood pulp.

E. J. Keller Company, Blydendyk, Rotterdam, 71 bls. rags.

E. J. Keller Company, Schoharie, Hamburg, 88 bls. rags.

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It Advertises"*

AdPax—A family of papers.
Not for one retail business—
But one for every retail
business.
And each as profitable
as the other.

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320 Broadway, New York

MG. SULPHITE PAPER

Pure or mixed with any per-
centage of Mechanical Wood
Pulp.

Basis 24 x 36" --10 lbs. to 60 lbs,

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PULP AND PAPER

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pioneers, made the first endless paper machine
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Seamless felts for fast running.
atin Style felts for finish.
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end us your felt problems.

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CAMDEN, MAINE**

SOLD BY
BULKLEY, DUNTON & COMPANY
75-77 Duane St., N. Y., and direct

Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, May 24, 1922.

ALUM.—Powdered alum is fairly active at the quoted price of 3.90, ground at 3.65, and lump at 3.50 cents a pound. Demand is still considerably under normal, but the market shows ample signs of recuperation.

BLEACHING POWDER.—It is generally believed that the price of 1.60 cents a pound for bleaching powder can be bettered, but not much activity is apparent in the paper field and manufacturers are curtailing production.

BLANK FIXE.—With a steadily increasing demand, blanc fixe continues to hold firm at 3.50 to 3.75 cents a pound for the dry and \$40 to \$50 per ton on the pulp, depending on the seller.

CASEIN.—The firmness of this market is, undoubtedly, due to the strenuous competition of the Argentine supply and the strong demand in the domestic market. Prices are still given at 10.00 cents a pound, New York, and some merchants appear to be holding out for a better figure.

CAUSTIC SODA.—With export prices on caustic ranging from a quarter to a half a cent higher than domestic, the demand abroad continues to increase. It is quoted at 3.26 cents a pound, works, and is generally believed to be firm.

CHINA CLAY.—Leading importers of this product report a steady activity with a consequent strengthening of the market, but point out that there are large supplies of China Clay on the ground in England that cannot be disposed of. English clays sell for \$13 to \$18 a ton, domestic unwashed at \$6 to \$8 and washed at \$8 to \$10.

LIQUID CHLORINE.—Manufacturers are pushing this by-product on the ground that it is easier to handle than many other chemicals and retains its strength. The price of 5.50 to 7.00 cents a pound for cylinders of 100 pounds has been shaded somewhat for tank-car lots.

ROSIN.—Firmness is evident in the rosin market, the figure of \$5.20 for 280-pound barrels remaining the same on grades E, F and G. Foreign and domestic demands have each augmented during the past few weeks.

SALTCAKE.—Due to the fact that muriatic acid is in slack demand at the present time, production of saltcake has been hampered considerably. Acid cake is quoted at \$20 to \$21 per ton, while chrome cake holds firm at \$18.

SATIN WHITE.—Following, in the main, the course of the blanc fixe market, satin white has been exhibiting steady improvement and is quoted at 1.50 cents a pound.

SULPHUR.—Showing no appreciable change month in and month out, with the exception of a considerable strengthening throughout, the brimstone market holds firm at \$15 to \$17 per net ton and \$18 to \$20, f. o. b. New York.

STARCH.—With activity stimulated greatly, paper makers' starch has been quoted at 2.32 cents a pound for bag quantities and 2.60 for barrels. Pearl starch is selling for 2.22 and 2.50 for these respective amounts.

SULPHATE OF ALUMINA.—Prices are not as firm as they might be in the aluminum sulphate market, but the commodity is moving along fairly well according to dealers. Western manufacturers have caused a little alarm by their low quotations, but the New York price still holds at 1.40 to 1.50 cents a pound, with iron free at 2.15 to 2.35.

SODA ASH.—A strong export demand has recently occupied the attention of the soda ash market, but domestic coal difficulties have hampered production. The product is quoted at 1.50 cents a pound, works.

TALC.—Moving in similar channels to the China clay market, talc has firmed somewhat and is selling for the slightly lower figure of \$15 to \$17 per ton.

Market Quotations

(Continued from page 67)

Solid Ledger Stock. 2.00 @ 2.25	New Black Soft. .03 @ .03 1/2
Writing Paper. 1.80 @ 2.00	New Light Sec-onds02 @ .02 1/2
No. 1 Books, heavy. 1.50 @ 1.75	Khaki Cuttings.02 1/2 @ .03 1/2
No. 2 Books, light. 1.20 @ 1.50	Corduroy02 @ .02 1/2
No. 1 New Manila. 2.75 @ 3.00	New Canvas.07 @ .07 1/2
No. 1 Old Manila. 1.50 @ 1.75	New Black Mixed 2.75 @ 3.00
Container Manila. 1.00 @ 1.10	Old
Old Kraft. 1.90 @ 2.00	White, No. 1—
Overissue News.75 @ .80	Repacked06 @ .06 1/2
Old Newspaper.50 @ .60	Miscellaneous04 1/2 @ .04 3/4
No. 1 Mixed Paper.45 @ .50	White, No. 2—
Common Paper.40 @ .50	Repacked03 @ .03 1/2
Straw Board, Chip.40 @ .45	Miscellaneous02 1/2 @ .02 3/4
Binders' Bd. Chip.40 @ .45	Thirds and Blues—
Domestic Rags—New.	Repacked 1.65 @ 1.80
Price to Mill, f. o. b. Phila.	Miscellaneous 1.40 @ 1.55
Shirt Cuttings—	Black Stockings. 1.75 @ 2.25
New White, No. 1 .09 1/2 @ .09 1/4	Roofing Stock—
New White, No. 2 .05 @ .06	No. 1.90 @ 1.00
Silesias, No. 1.04 1/2 @ .05	No. 2.80 @ .90
New Unbleached. .08 1/2 @ .08 3/4	No. 3.70 @ .80
Washables03 @ .03 1/2	No. 4.70 @ .80
Fancy04 1/2 @ .05	No. 5A. nominal
Cottons—according to grades—	B. nominal
Blue Overall.04 @ .04 1/2	C. nominal
New Blue.02 @ .02 1/2	

BOSTON

[FROM OUR REGULAR CORRESPONDENT.]

Paper	Wood, Vat Lined. .47.00 @
Bonds06 1/2 @ —	Filled News Board. .37.50 @
Ledgers07 1/2 @ .09	Solid News Board. .42.00 @ 45.00
Writings — @ .05	S. Manila Chip. 52.50 @
Superfine11 1/2 @ .13	Pat. Coated. 70.00 @ 75.00
Fine08 1/2 @ .09 1/2	
Books, S. & S. C.06 @ .07	Old Papers
Books, M. F.05 1/2 @ .06 1/2	Shavings—
Books, coated.07 1/2 @ .08 1/2	No. 1 Hard White 3.50 @ 3.75
Label08 @ .08 1/2	No. 1 Soft White 3.00 @ 3.25
News sheets. 3.05 @ —	No. 1 Mixed. 1.50 @ 1.75
News, rolls. 3.75 @ 4.00	Ledgers & Writings .03 1/2 @ —
Manilas—	Solid Books. 1.75 @ 2.00
No. 1 Manila . . . \$6.75 @ 6.25	Blanks 1.30 @ 1.45
No. 1 Fibre. 6.00 @ 6.25	No. 2 Books Light. .60 @ .70
No. 1 Jute. 8.50 @ 9.00	Folded News, over-
Kraft Wrapping. . . 7.00 @ —	issues \$11.25 @ 12.50
Common Bogus. . . . 3.00 @ —	Mixed paper. 47.50 @ 50.00
	Gunny Bagging. 7.25 @ 7.50
Boards	Manila Rope. 4.25 @ 4.50
(Per Ton Destination)	Common Paper.35 @ .40
Chip \$33.50 @	Old News.80 @
News, Vat Lined. .35.00 @ 37.50	Old Kraft. 1.75 @ 1.80

TORONTO

[FROM OUR REGULAR CORRESPONDENT.]

Paper	Sulphite, bleached. .90.00 @ 95.00
(Mill Prices to Jobbers f. o. b. Mill)	Sulphate70.00 @
Bond—	Old Waste Papers
Sulphite11 @ .12 1/2	(In carload lots, f. o. b. Toronto)
Light tinted.12 @ .13 1/2	Shavings—
Dark tinted.13 1/2 @ .15	White Env. Cut. 3.75 @ —
Ledgers (sulphite).13 @ .13	Soft White Book 3.25 @ —
Writing10 1/2 @ .13 1/2	White Blk. News. 1.60 @ —
News, f. o. b. Mills—	Book and Ledger—
Rolls (carloads). 3.50 @ 4.25	Flat Magazine and
Sheets (carloads). 4.25	Book Stock (old) 1.45 @ —
Sheets (2 tons or over) 4.50	Light and Crum-
Book—	pled Book Stock 1.30 @ —
No. 1 M. F. (car-	Ledgers and Writ-
loads) 9.50 @ —	ings 1.80 @ —
No. 2 M. F. (car-	Solid Ledgers. 1.80 @ —
loads) 8.50 @ —	Manilas—
No. 3 M. F. (car-	New Manila Cut. 1.90 @ —
loads) 8.00 @ —	Printed Manilas. .90 @ —
No. 1 S. C. (car-	Kraft 2.25 @ —
loads) 10.00 @ —	News and Scrap—
No. 2 S. C. (car-	Strictly Overissue .90 @ —
loads) 9.00 @ —	Folded News.80 @ —
No. 1 Coated and	No. 1 Mixed Pa-
litho. 15.00 @ —	pers60 @ —
No. 2 Coated and	Domestic Rags—
litho. 14.00 @ —	Price to mills, f. o. b. Toronto.
No. 3 Coated and	Per lb.
litho. 13.25 @ —	No. 1 White shirt
Coated and litho.,	cuttings09 1/2 @ .10
colored 15.25 @ —	No. 2 White shirt
Wrapping—	cuttings05 1/2 @ .05 3/4
Grey 4.50 @ —	Fancy shirt cut-
White Wrap 5.00 @ —	tings04 1/2 @ .04 3/4
"B" Manila 5.50 @ —	No. 1 Old whites .04 @ —
No. 1 Manila 6.75 @ —	Thirds and blues .02 @ .02 1/2
Fibre 6.75 @ —	Per cwt.
Kraft, M. F. 8.00 @ —	Black stockings. . 1.75 @ 1.85
M. G. 8.15 @ —	Roofing stock:—
	No. 1. 1.35 @ —
Pulp	No. 2. 1.20 @ —
(F. o. b. Mill)	Roofing stock:—
Ground wood. . . \$25.00 @ 32.50	Manila rope04 1/2 @ .04 3/4
Sulphite easy bleach-	No. 2.01 1/2 @ —
ing 60.00 @ 65.00	Gunny bagging. . . 1.00 @ 1.25
Sulphite news grade. 50.00 @ 60.00	

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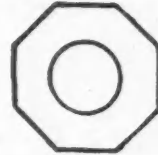
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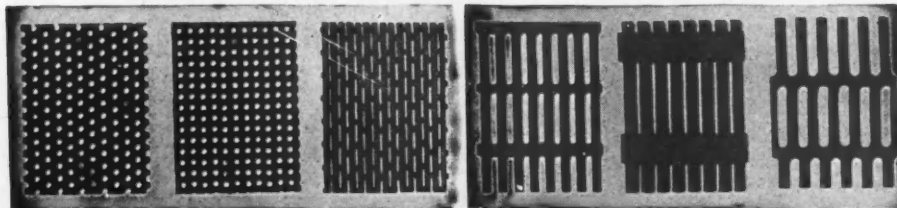
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CLASSIFIED RATES

Minimum rate for advertisements of 25 words or less, first insertion, \$1.00.

SITUATION WANTED, 4 cents a word for first insertion and 2 cents a word for each subsequent insertion of same ad. No ad of less than 25 words accepted.

HELP AND MISCELLANEOUS WANTS, and small For Sale Ads, 4 cents a word for each and every insertion. No ads of less than 25 words accepted.

When answering advertisements, please address the Box Number given in ad.

Answers can be forwarded care Paper Trade Journal, and will be promptly forwarded without extra charge. All should be sent to the New York office, 10 East 39th street. And all should be addressed as the advertisement directs in every case and not simply to the paper.

All classified ads for the current issue must be in hand not later than Monday preceding date of publication.

HELP WANTED

SALESMEN: TOILET PAPER—Experienced men who can sell quality toilet papers to the better class of jobbers. Our line will require carrying a complete set of samples in order to show the grades and exact appearance of the finished product. Good territory available. Universal Crepe and Tissue Mills, Inc., 117 East 18th St., New York City. My-25

WANTED—Boss finisher, mill making high grade bonds and ledgers; located Western Massachusetts. In replying give age, experience and references. Address, Box 5073, care Paper Trade Journal. Jf

WANTED—Thoroughly competent man to run calender and press roll grinder. Lobdell machine. News mill. Address, with full particulars, Box 5084, care Paper Trade Journal. My-25

MACHINE DESIGNER WANTED: One having experience in designing pulp screens, thickeners and wet machines preferred. Plant located half way between Boston and Providence. Address, Box 5043, care Paper Trade Journal. Jc-8

WANTED at once. Draftsman, experienced in paper machine design. State full particulars, experience and salary expected. None but experienced men need apply. Address, Box 5092, care Paper Trade Journal. Je-1

WANTED: Millwright to take charge of Repairs, Engines and Boilers in 15-ton Board Mill, located in New England. Address, Box 5091, care Paper Trade Journal. My-25

WANTED: Salesman. Leading dyestuff house has position open for energetic, live, and experienced man. Must be thoroughly acquainted with the paper trade and know dyestuffs and their application. State experience and references. Address, Box 5094, care Paper Trade Journal. My-25

WANTED: Draughtsman for work on reconstruction of a Soda Pulp Mill located in West Virginia. Please state experience had and salary expected. Address, Box 5095, care Paper Trade Journal. My-25

WANTED: One good steady Fourdrinier Machine Tender used to running light weight bond. Married man preferred. Address, Box 5104, care Paper Trade Journal. Je-8

WANTED: A practical paper maker, not over 35 years old, with knowledge of Chemistry. Will be required to travel part time. Permanent position assured with old established firm. Address, Box 5105, care Paper Trade Journal. My-25

HELP WANTED

WANTED: Chemist with a practical knowledge of paper making. First class position open for right party. Address, Box 5106, care Paper Trade Journal. My-25

WANTED: Machine tenders, back tenders, beatermen, in mill making tissues and crepe papers. Address, Box 5107, care Paper Trade Journal. My-25

WANTED: Boss finisher and shipping clerk for 3-machine mill-making Sulphite Specialties, state age and experience. Good location. No labor trouble. Only competent men need apply. Address, Box 5108, care Paper Trade Journal. Je-1

BEATERMEN: First class, for high grade tissue mill. State age, where employed. Correspondence confidential. Address, Box 5109, care Paper Trade Journal. My-25

POSITION OPEN for first class assistant superintendent in mill making Book Papers, also operating Greenwood Mill in connection therewith. Only a man who has had experience in both lines and understands the handling of help will be considered. All letters treated confidentially. Address, Box 5110, care Paper Trade Journal. Je-8

WANTED: First class thoroughly experienced machine tender for modern mill. One with experience on M.G. Tissue and light weight papers preferred. Give full details of qualifications, experience and reference in first letter. Address, Box 5111, care Paper Trade Journal. Je-8

WANTED: Two first class machine tenders and two beater engineers for book and railroad writing mill on Pacific Coast. None but A-1 men need apply. Send references in first letter. Address, Box 5112, care Paper Trade Journal. Je-8

WANTED: One machine tender and one back tender for Box Board mill. Foster Box Board Co., Utica, N. Y. My-25

WANTED: Experienced man on Langston corrugator. Must be familiar with asbestos paper. Address, Box 5121, care Paper Trade Journal. Je-1

WANTED—First class super calender man. Good pay for right party. Address, Box 5125, care Paper Trade Journal. Je-8

PAPER SALESMAN

Large well known New York firm has opening for high class young man of ability, having experience selling large New York jobbers and consumers both printings and wrappings. Excellent future. State age, experience, remuneration expected. Address, Box 5120, care Paper Trade Journal. My-25

SITUATIONS WANTED

POSITION WANTED by practical paper maker and mechanic and good organizer. What kind of position have you to offer? Address, Box 5079, care Paper Trade Journal. Je-2

SITUATIONS WANTED

PAPER SALESMAN in New York City who can produce a large volume of business with adequate co-operation, desires connection. Drawing account on Commission basis. Correspondence invited. Address, Box 4639, care Paper Trade Journal. Jf

WANTED POSITION—As superintendent. Twenty-one years' experience; used to Specialties, Colors and Wrapping, all grades of Boards and Fibres. Knows how to handle help. Can keep up repairs. Used to Fourdrinier and Cylinder Machines. Address, Box 4786, care Paper Trade Journal. Jf

DOES YOUR MILL pay? If not, why not have a superintendent with proven ability and experience that will make it pay? Address, Box 4977, care Paper Trade Journal. Je-2

SUPERINTENDENT of ability open for position with good company making box board, container board, wall board, Bristol board or straw. A man that understands a plant thoroughly and gets good results. Address, Box 4997, care Paper Trade Journal. Je-3

MASTER MECHANIC desires position. Twenty years' experience in mills of all grades of paper and pulp, also on steam, water and electric power. Best references. Address, Box 5014, care Paper Trade Journal. Je-15

WANTED—Position as superintendent. Twenty-five years' experience on book, coating, hanging, and tissue papers. Familiar with rag, wood, jute, and old paper stock. Fourdrinier and cylinder machines. Address, Box 5087, care Paper Trade Journal. Je-2

EXPERIENCED BOSS BEATERMAN and color man wants position. Twenty-five years' experience with leading and largest mills making most all grades and colors. Best references. Address, Box 5054, care Paper Trade Journal. Je-1

SULPHATE SUPERINTENDENT who can increase pulp production to a recognized standard for mill in U. S. and Canada, is now open for engagement. Knows mill construction and equipment that is necessary for maximum results. Best of references. Address, Box 5066, care Paper Trade Journal. My-25

BEATER ENGINEER: Open for position. Experienced on all grades of Box Boards, tests, etc., also bonds, ledgers and book. Address, Box 5068, care Paper Trade Journal. Je-1

EXECUTIVE with managerial ability, trained office manager, accountant and cost expert, student of Walton School of Commerce, Alexander Hamilton Institute and Industrial Extension Institute; specially experienced in paper mill administrative problems, seeks position of trust and responsibility. Highest references given. Address, E. J. B., P. O. Box 760, Cincinnati, Ohio. Je-8

SUPERINTENDENT of ability open for position June 1. High grade man on Kraft and Specialties. I have the ability plus a determined desire to work and make every effort to develop my opportunities. Address, Box 5099, care Paper Trade Journal. Je-1

WANTED position as superintendent or assistant superintendent. 19 years' experience on box board and container board. Good on repairs and can get results. Good references. Address, Box 5052, care Paper Trade Journal. Je-8

SALESMAN: One who is acquainted with the Paper Mill Trade and has a following in the Western & Southern Territory is desirous of locating with a reliable firm in the Paper Mill Industry. Best of references furnished. Address, Box 5102, care Paper Trade Journal. My-25

SPECIALTY SALESMAN, experienced in handling quantity business, wants good line to sell direct for a manufacturer. New Jersey Territory preferred. Commission. Address, Box 5103, care Paper Trade Journal. My-25

SITUATIONS WANTED

WANTED: Position as Mill or Box Plant Manager by Competent Executive. Experienced in manufacture of Box Boards, Folding Cartons and Solid Fibre Cases. Address, Box 5113, care Paper Trade Journal. My-25

WANTED: By a New York Manager and Representative of an out of town Manufacturer of Toilet Paper and Paper Towels, similar connection with reputable manufacturer. Have been in the line over 20 years, over 15 years of which I have spent with my concern. Address, Box 5114, care Paper Trade Journal. My-25

MANAGER AND SUPERINTENDENT: Two men with many years of experience in rebuilding and bringing mills up highest efficiency. If you require the best that practical experience and training can give. It is at your disposal on a salary basis; on salary and a percentage of net profits on increased production. If your mill is not on a paying basis, write us at once. Our experience covers the following on cylinder machines. Boards: Test, fancy box, single and double patent coated; Jute, chip (fancy and plain, single manila lined, bleached manila lined); Tag (Oak, manila and filler folder); and milk bottle cap. Specialties: Albums, Kodak, Book Covers, Electric Papers, Socket and Shell Papers; Battery Boards; Bristol (solid index and filler); Paraffin papers and wrappings. We have intimate knowledge of raw material markets and can furnish the best of skilled help. Address, Box 5115, care Paper Trade Journal. Je-8

A THOROUGH PAPERMAKER with twenty-eight years manufacturing experience, considerable wholesale and jobbing experience desires to connect with some good house as manager or buyer, high grade references furnished on request. Address, Box 5116, care Paper Trade Journal. Je-8

SUPERINTENDENT of many years' experience in producing Box Boards is seeking a connection where quantity and quality production at a minimum cost will be recognized. Have best of references, for efficiency and maintaining harmony among employees. Address, Box 5117, care Paper Trade Journal. JI-13

NORWEGIAN FIRM desires to communicate with a New York, Philadelphia, Boston or Baltimore firm with the object of getting some one to handle Woodpulp in the States. The advertiser is Murer and Company, Christiania, Norway, but all replies to be addressed to Box 5123, care Paper Trade Journal. My-25

TECHNICAL MAN with practical operation experience in Soda Pulp manufacture is open for engagement. Has developed technical control methods on mill operations and supervised the recovery of pulp making chemicals. Details furnished on inquiry. Good references. Address, Box 5122, care Paper Trade Journal. Je-8

MILL LINES WANTED

Inter-Ocean Bag and Paper Co., Inc., 121-123-125 W. Kinzie St., Chicago. Central and Western distributors for the Grand Lake Company, Inc., with large warehouses in Chicago and Minneapolis and Merchandise Distributing Points in Toledo, Milwaukee and Des Moines desires to make connection with mills that are not competitive with our lines. Address, Box 5118, care Paper Trade Journal. My-25

EXPERIENCED MECHANICAL ENGINEER seeks new connection Paper or Pulp mill. Capable and with record of maintenance at low cost. Familiar with foreign Mills operations. Best references. Address, Box 4981, care Paper Trade Journal. Je-1

FOR SALE

FOR SALE—Taylor, Stiles No. 2B Tandem Rag Cutter Graphite Bushings in Loose Pulleys. Extra set of knives. Norwood Engineering Co., Standard Rag Thresher N. S. adjustable screen. Holyoke Machine Co., R. H. 5' x 15' Fan Duster. Above new and in perfect condition. Houston Stanwood & Gamble Co. Steam Engine, 11 x 18 slide valve. 16" x 78" pulley. Wheel governor. Correspondence solicited. The Albemarle Paper Mfg. Co., Richmond, Va. My-25

FOR SALE: 14 Calender Rolls, 58" face, 3' 14" diameter. 2 No. 1 Claflin Engines, 1 small Jordan Engine. 1 6" Horizontal Water Pump. 2 Air Fans. Complete triple-deck frames for 44 Dryers. Will arrange terms to suit. Chesapeake Paper Board Co., Baltimore, Maryland. tf

MISCELLANEOUS

PROPOSALS FOR THE SALE OF ELECTROTYPE DROSS, PAPER SHAVINGS, LEATHER SCRAPS, ETC.

Government Printing Office, Washington, D. C., May 8, 1922. Sealed proposals will be received at this office until 2 o'clock p. m., June 5, 1922, for the disposal and sale of Electrotpe Dross, Paper Shavings and Leather Scraps from bindery. Old Roller Composition, Refuse Wood, Empty Barrels, and Sawdust which may accumulate and for the removal of ashes and debris from the Government Printing Office during the six months beginning July 1 and ending December 31, 1922. The right to reject any and all bids and to waive defects is reserved. Detailed specifications of the estimated quantities to be sold, accompanied by blank proposals and giving regulations with which bidders must comply, may be obtained by addressing GEORGE H. CARTER, Public Printer. My-11-25

STOCK SALESMAN, experienced, will undertake selling a legitimate stock issue for corporation requiring additional capital. Private investors. State full particulars for attention. Address, Box 5124, care Paper Trade Journal. My-25

MISCELLANEOUS

WANTED—Price on used Piling Machine for piling waste paper bales. The Kolb Carton Co., 146-150 Thompson Street, New York City. My-25

SWIFT, GEORGE W., JR., Designer and Manufacturer of Special Machinery for Manufacturing and Printing Paper Goods. Bordentown, N. J. 8-24-22

WANTED: Second hand Warren Drum Winder about 84" width. Address, Box 5119, care Paper Trade Journal. My-25

Sealed proposals will be received from manufacturers of banknote or other fine papers, until 12 o'clock m., Monday, June 5, 1922, and then opened for furnishing to the Department of Labor during the fiscal year to end June 30, 1923, certificate of naturalization paper of the highest quality containing the distinctive features of the paper now used by the department. Full information upon this subject will be given upon application to the chief of the Division of Publications and Supplies of the department, at whose office samples of paper required may be examined. Proposals are to be made by letter, no blanks for this purpose being furnished, and they should be addressed to the Division of Publications and Supplies, Department of Labor, Washington, D. C., and the envelope in which they are inclosed marked in the lower corner "Proposals for distinctive Safety Paper." The department reserves the right to reject any or all bids.

Rebuilt Paper Mill Machinery in Stock and Guaranteed NOT WHERE IS AND AS IS

- FOURDRINIER TISSUE MACHINE—One 96", one 68".
- FOURDRINIER PARTS—Pusey & Jones 118", 100". Kutter Trowbridge 96".
- PRESS PARTS FOR PAPER MACHINES—Pusey & Jones bell crank housing two sets 18"x96", Black & Clawson swing arm housings with rolls.
- DRYERS—Four 48"x111", thirteen 36"x95", four 48"x68", one 84"x67", eleven 42"x66".
- MARSHALL DRIVES—Two Black & Clawson self-contained stand with friction clutch cone pulley and 6" mortise gears. Mortise gears and pinions for Pusey & Jones Marshall drives 5" to 8" face.
- CHILLED CALENDERS—One 66" face, five roll; one 54" face, five roll.
- DILLON DOCTORS—For Machine Calenders 60" to 120" face.
- SLITTERS AND WINDERS—One 120" Warren, one 108", 36" Kidders.
- REELS—Pusey & Jones two drum upright 48" to 114".
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- JORDANS—One Wagg Majestic, three No. 2 Dillon Improved, one Large Horne, four Monarch, one Jones Standard, two Pope Brushing engines.
- SCREENS—Six 10 plate open side Packer, two 6 plate, one Moore & White auxiliary.
- STUFF PUMPS—Deane triplex, 9"x8", Gould triplex 8"x10", Sandusky triplex 4"x6".
- REVOLVING SHEET CUTTERS—One 104" Horne, five 61" Hamblet, four 61" Finlay, one 50" Hamblet diagonal, one 42" Finlay.
- WET MACHINES—Four 72" Bagley & Sewall Hydraulic.
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The Paper Trade Journal

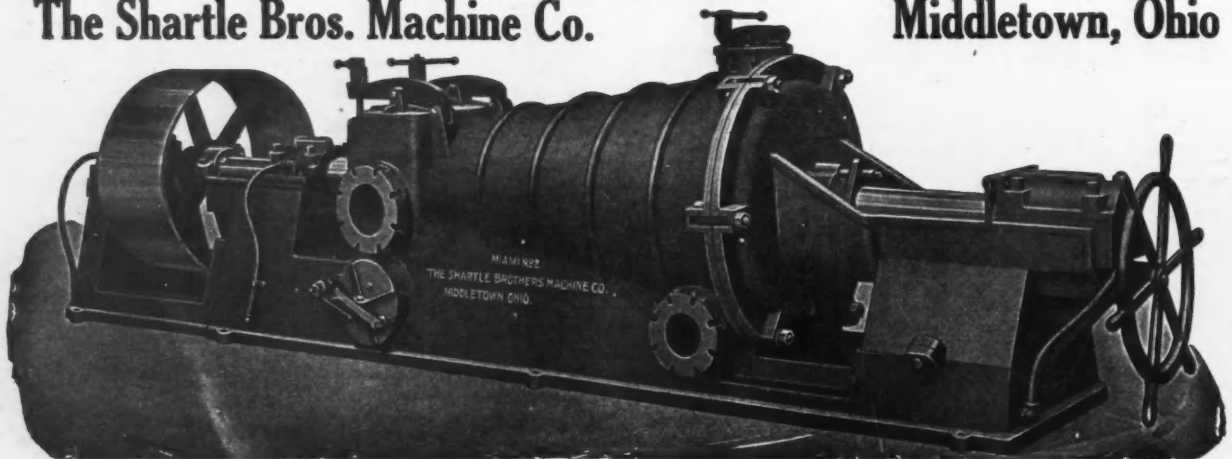
Is the One and Only Medium which covers completely the Paper and Pulp Industry.

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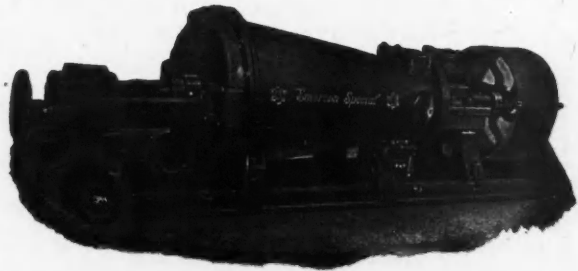
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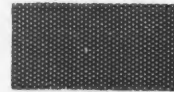
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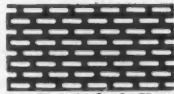
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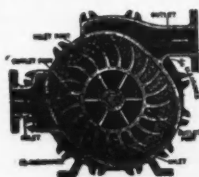
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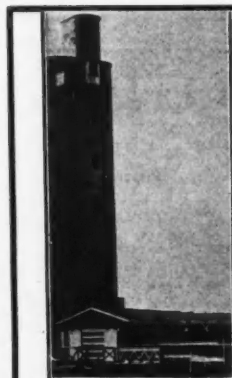
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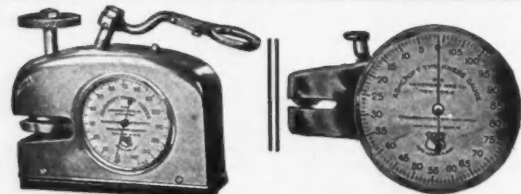
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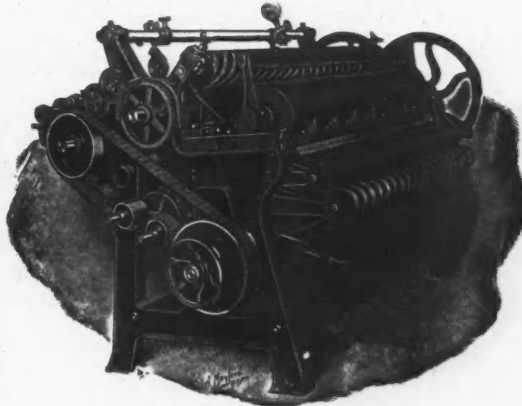
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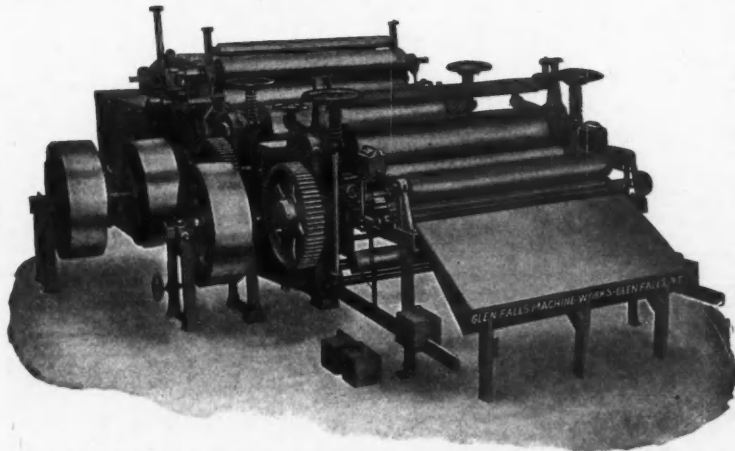


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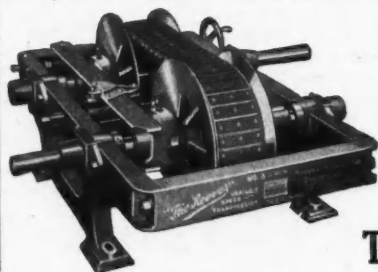
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If it's a question of getting the exact speed on your Paper Machine to suit the condition of the paper being manufactured, then "THE REEVES" Variable Speed Transmission is exactly what you want.

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3

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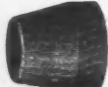
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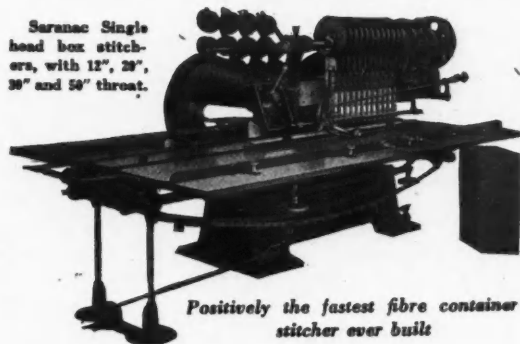
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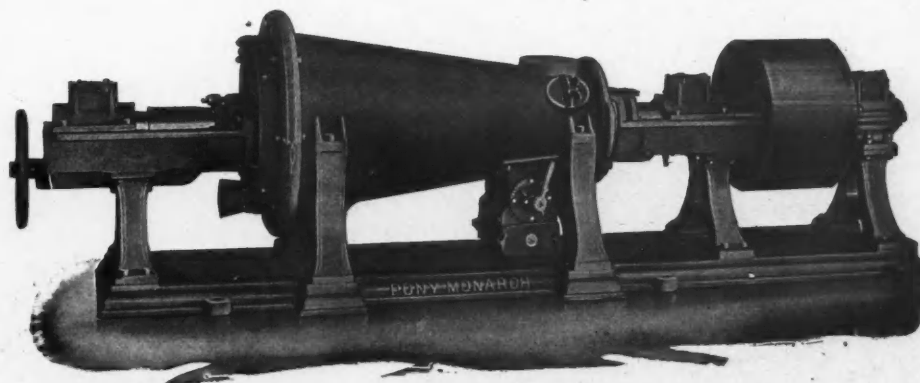
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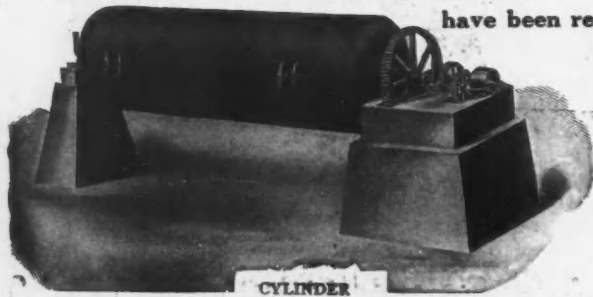


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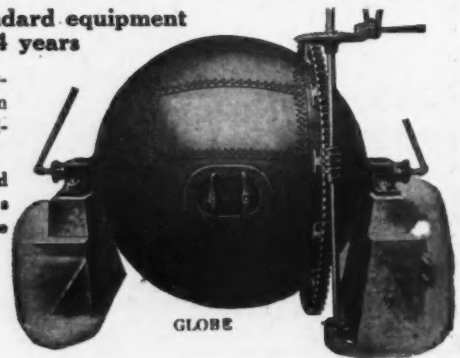
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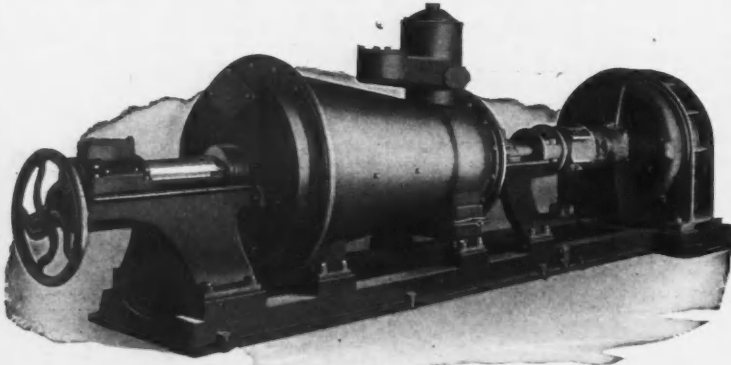
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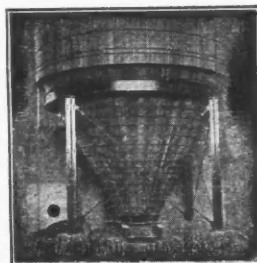
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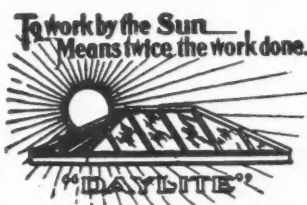
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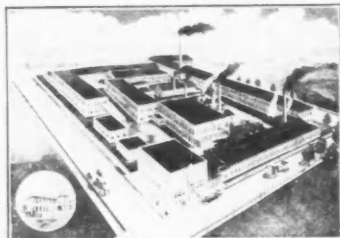
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