# CONTENTS OF SUPPLEMENT.

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d Electric Railways ..... light and Power Bridges Buildings Water-Works Water-Works Sewerage Garbage Disposal and Street Cleaning Streets and Roads Manufacturing Plants Contract Prices  $156 \\ 157$ INDUSTRIAL NOTES ..... 160

#### PERSONAL.

Mr. George H. Cox has been appointed Park Com-missioner of Cambridge, Mass.

Mr. Sumner Thomas bas been appointed Street Com-issioner of Glens Falls, N. Y.

Mr. Robert T. Danner has been appointed Superintendent f Water-Works of Frederick, Md.

Mr. Clark Smith has been appointed Superintendent of Water-Works of Fort Collins, Colo.

Mr. Joseph M. Byrne has been clected a Board of Works Commissioner of Newark, N. J.

Mr. George W. Keller has been elected President of the Board of Water-Works Trustees of Wooster.

Mr. T. W. Bauer bas been appointed Secretary to the Board of Water-Works Trustees of Sandusky, O.

Mr. Theodore C. Hewson has been elected President of he Board of Works of Newark, N. J., to succeed Mr. the Board of William Stainsby.

Mr. Waiter McCulloh, M. Am. Soc. C. E., has removed flice from 7 Crick Building to the Arcade Building, Niagara Falis, N. Y.

Mr. Waiter Dixon, electrical engineer, of Glasgow, Scotland, is on a tour of inapection of the electrical power plants of the United States.

Mr. I. Fujioka, manufacturer of electrical appara of Tokyo, Japan, la visiting this country on a tour of inof electrical machinery.

Mr. A. W. Trotter, M. Am. Soc. C. E., has removed his office in New York city from the Havemeyer Building to the Empire Building, No. 71 Broadway.

Messrs. Ford. Bacon & Davis, engineers, have removed their New York office from the St. Paul Bidg., 220 Broadway, to the Singer Bidg., 149 Broadway.

Mr. H. O. Nourse, Chief Clerk of the Water Depart-ment of Chicago, Ill., has been appointed Superintendent of the Water Office, to succeed Mr. Felix Lang, resigned.

Messrs. J. S. Van Horne, M. Am. Soc. C. E., and P. Warren Allen, Jun. Am. Soc. C. E., have removed their offices from 26 Cortlandt St. to 71 Broadway, New York city.

Mr. Eugene Washington Stone, M. Am. Soc. C. E., has resigned as Engineer of the Koken Iron Works, St. Louis, Mo., and is now located at 56 West 72d St., New York city.

Mr. P. J. Crossen, a member of the Board of Water-Works Trustees of Sandusky, O., bas resigned and has been appointed Superintendent of Street Work of that city.

Mr. Austin Lord Bowman, M. Am. Soc. C. E., Civil and Consulting Engineer, has removed his office from the Havemeyer Bldg., New York city, to the new Empire Bldg., 71 Broadway.

Mr. William S. Turner, M. Am. Inst. E. E., consulting and constructing electrical and mechanical engineer, has removed bis office from 1 Nassau St, to 141 Broadway, New York city.

Prof. Massashi Namba, Professor of Electrical Engi-neering in the University of Kioto, Japan, is on a visit to the United States for the purpose of studying the latest electrical developments.

Mr. G. R. Joughins, Superintendent of Motive Power of the Norfolk & Southern R. R., with headquarters at Berkley, Va., has been appointed Mechanical Superin-tendent of the government railways of Canada.

Mr. F. S. Highid, formerly Roadmaster of the New York vision and Assistant Engineer of the Erie R. R., has resigned to accept a position as Assistant Engineer of the Panama R. R., with beadquarters in Panama, Coof

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Mr. Perry Lawton, Assoc. M. Am. Soc. C. E., has opened an office as a civil engineer in the Savings Bank Bldg., Quincy, Mass. He is also a member of the Boston So-clety of Civil Engineers and of the New Engiand Water Works Association orks Association.

Messrs. Nagle & Ball, consulting mechanical engineers, have removed their offices to the New York Life Bldg., Chicago. They are at present the consulting engineers for electric lighting plant under construction at Grand Rapids, Mich.

Mr. S. Potts, Jr., M. Am. Soc. M. E., who for mauy years has been the Mechanical Engineer for the Yerkes System of street railways in Chicago, has recently re-signed his position to engage in business for himself, and will locate in New York city.

Mr. William Barclay Parsons, M. Am. Soc. C. E., consulting engineer, with offices at 22 William St., New York city, and Chief Engineer of the Rapid Transit Commission of that city, has been commissioned Chief of Engineers on the staff of Gov. Black, of New York.

Prof. William A. Pratt, of Delaware College, and President of the Street and Sewer Department of Wilmington. Del., has offered to the United States Government to raise a full corps of engineera for service in the war against Spain. The corps will be officered by practical and ex-perienced engineers, and the rank and file will be comed of railway bridge builders, carpenters, macbinists and other mechanics.

Mr. A. Tropenas, inventor of the Tropenas steel process, a modification of the Bessemer process, whose coming to this country was noted in our issue of April 21, has now arrived and will start a Bessemer plant on his system at the works of the Driggs-Scabury Gun and Ammunition Co., Derby, Conn. Mr. Tropenas' bead-quarters in New York will be with Messrs. Powell & Coine, Bowling Green Offices, 11 Broadway.

Mesars. Frank Boggs, of Pennsylvania; C. S. Smith, of Illinois; W. W. Worten, of North Carolina; Lytie Brown, of Tennessee; Robt. D. Kerr, of West Virginia; E. i. Brown, of Georgia, and A. A. Fryes, of Oregon, have been commissioned as Second Lieutenants in the Engiueer Corps of the United States Army. They are the seven highest graduates of the U. S. Military Academy this year, and have been ordered to duty at once at Willet's Point, N. Y.

The court martial to try Civil Engineer A. G. Menocal, M. Am. Soc. C. E., U. S. Navy, on charges growing out of the failure of the dry dock in the New York Navy Yard, Brooklyn, has been reorganized on account of the Fard, Brookiyn, has been reorganized on account of the necessity for giving sca duty to all the active officers of the Navy, and will consist of Rear-Admiral A. E. K. Benham, retired; Capt. Edwin Sbepard, Capt. H. Picking, re-tired; Capt. A. E. Reld, retired; Capt. Yates Sterling, Capt. Tbos. Nelson, retired; Commander G. R. Durran, retired, and Commander W. B. Newman, retired.

The Maryland Geological Survey has been constituted as follows; Mr. William Builock Clark. State Geologist and Superintendent of Survey; Mr. Edward B. Matbews, Assistant State Geologist and Chief of Division of Geology of the Piedmont Plateau; Mr. Charles S. Prosser, Chief of Division of Geology of the Appalachiau Region; Mr. George B. Shattuck, Chief of Division of Geology of the Costal Piain; Mr. Harry Fielding Reid, Chief of Division of Highways, and Mr. L. A. Bauer, Chief of the Division of Terrestrial Magnetism. Mr. A. N. John-son, formerly a road engineer on the Massachusetts Highway Commission, has been appointed Road Expert in the Division of Highways.

Mr. George W. Vanderbilt, son of the late William H. Vanderblit, is to he married, June 1, to Miss Editb Stuyvesant Dresaer, daughter of the late Bvt. Major George W. Dresser, U. S. A. Major Dreaser, who died at Newport, in 1883, was a Member of the American Society of Civil Engineers; and, having resigned from the Army in 1865, he practiced civil engineering in the neighborhood of New York city until his death. From 1870 to 1873 he was Assistant Engineer of the Departnent of Public Works, in New York; and from 1875 until his death he was the Editor of the "American Gas-Light Journal." Major Dresser was well known to many of the older members of the American Society of Civil En-

#### OBITUARY.

Mr. Joseph Darragh, for 22 years Chief Englneer of the Isabelia Furnace Co., Sbarpsburg, Pa., died April 27, aged 76.

Mr. G. R. Cook, formerly Superintendent of Parks of Cambridge, Mass., died in Salem, Mass., May 2, aged 37. He was born in Pawtucket, R. I., and was at one time an cditor on the Cambridge (Mass.) "Press." In 1893 he was city editor of the Cambridge "Tribune."

Mr. Joseph C. Turk, C. E., has been appointed Genco., with headquarters at Key West, Fla., to superin-tend the construction of the two large steel marine piers and coaling stations at Dry Tortugas and Key West, the pany, as noted in our recent issues.

Mr. Frederick Bernhard Otto Baensch, the Engineer the North Sea and Baitic Ship Canal, died on April 8. Mr. Baensch was born in Zeitz, Germany, June 6, 1825, and was educated as a civil engineer in the employ of the Prussian government. He was first engaged in bridge construction, over the Rhine and at Liegnitz; and later he built the barbors at Stolpmuende, at Ruegenwalde and at Colberg. His successful efforts in maintaining the at Colberg. His successful efforts in maintaining the dikes along the Baltic coast were especially commended by the government, and, in 1871, he was attached to the Ministry of Public Works, and was still connected with it at the time of his death. During this time he designed and built the rectification works of the Rivers Eibe and Rbine, and designed the Main River Canai, and the ex-tensive dikes and harbor works in Schleswig-Holetain tensive dikes and harbor works in Schleswig-Holstein. In 1881 he reported upon the project for a North Sea

and Baitic ship canai, and was later made its chief engincer. He completed this difficult work in a manner which won for him the praise of his government and the ap-proval of engineers throughout the world.

Maj. William Dransfield, rallway contractor, of Man cbester and Liverpool, England, died April 14, at Harform of Geo. Thompson & Co., railway and dock con-tractors, and was the principal manager of the firm uutil 1874. While in this capacity he built, among other im-portant works, a portion of the Birkenhead Docks, the North Docks branch of the Lancaster & Yorkshire Ry., the Edge Hill and Bootle hranch, the extension of Lime St, station, the fluyton & St. Helen's Rv., and numer-ous works of the London & Northwestern, the Great Eastern, the Lancashire & Yorkshire and the London & Southwestern Rys. In 1874 he joined Mr. Arthur H. Holme, of the present firm of Holme & King, and with him carried out heavy works on the Lancashire & Yorkshire Ry. Later he formed a partuersbip with Mr. James Thompson and Mr. William Smith under the firm name of Dransfield, Thompson & Holme, and afterwards left this firm to establish that of Dransfield & Smith. In the in the verse Wr. Dransfeld has done considerable work in the neighborhood of Manchester in widening the Lancashire & Yorkshire Ry.

# ENGINEERING SOCIETIES. COMING TECHNICAL MEETINGS.

- CHICAGO ELECTRICAL ASSOCIATION.
  May 6, Secy., J. R. Cravath, 825 Monadnock Block, Chicago, Ili.
  THE ENGINEERS' CLUB OF PHILADELPHIA.
  May 7, Secy., L. F. Rondinelia, 1122 Girard St., Phila-delphia, Pa.
  ENGINEERS' CLUB OF KANSAS CITY.
  May 9, Secy., F. W. Tuttle, Baird Bidg., Kansas City, Mo.
- ENGINEERS. May 9. Secy., F. W. LUMAN City, Mo. LOUISIANA ENGINEERING SOCIETY. May 9. Secy., J. F. Coleman, 712 Union St., New Orleans, La. RAILWAY SIGNALING CLUB. May 10. Secy., Earl M. Seitz, Signal Engr., C. & N. W. May 10. Secy., Earl M. Seitz, Signal Engr., C. & N. W.
- May 10. Seey., Earl M. Seitz, Signal Engr., C. & N. W. Ry., Chicago, Ili, DENVER SOCIETY OF CIVIL ENGINEERS. May 10. Seey., W. B. Lawson, 36 Jacobson Bidg., Den-ver Cole
- May 10. Secy., W. D. LUB. ver. Colo. NORTHWEST RAILWAY CLUB. May 10. Secy., T. A. Foque, Soo Line, Minneapoils,
- NEW ENG. May 11. Mas nn. ENGLAND RAILROAD CLUB. 11. Secy., Edward L. Janes, P. O. Box 1158, Bos-
- ton, Mass. ENGINEERING ASSOCIATION OF THE SOUTH. May 12\_ Nashville, Tenn. Secy., C. B. Wilson, Nash-
- May 12. Nasovine, Academic State ville, Tenn. CANADIAN SOCIETY OF CIVIL ENGINEERS. May 12. Secy., C. A. McNab, 112 Mansfield St., Mon-
- May 12. Secy., C. A. MCRAD, M. treal, Can. Civil ENGINEERS' CLUB OF CLEVELAND. May 12. Secy., Wm. 11. Searles, Case Library Bidg., Cleveland, O. BROOKLYN ENGINEERS' CLUB. May 12. Secy., A. J. Provost, Jr., 191 Montague St., BROOKLYN, N. Y. BROOKLYN, N. Y.

- DEVENDENCE OF THE STREET STREETS OF THE ST

- LOUISTIN, M.Y.
  ENGINEERS' SOCIETY OF WESTERN PENNSYL-VANIA.
  May 17. Secy., R. A. Fessenden, 410 Penn Ave., Pitts-burg, Pa.
  ILLINOIS STREET RAILWAY ASSOCIATION.
  May 18. Annual meeting. Secy., C. K. Minary, Spring field City R. R., Springfield, Hi.
  WESTERN RAILWAY CLUB.
  May 18. Secy., F. M. Whyte, 225 Dearborn St. Cbi-cago, III.
  BOSTON SOCIETY OF CIVIL ENGINEERS.
  May 18. Secy., S. E. TINKham, City Hail, Boston, Mass.
  WESTERN FOUNDRYMEN'S ASSOCIATION.
  May 18. Annual meeting. Secy., A. Sorge, Jr., 1020 Monadnock Biock, Chicago, III.
  ENGINEERS' AND ARCHITECTS' ASSOCIATION OF SOUTHERN CALIFORNIA.
  May 18. Secy., Frank H. Olmstead, Los Angeles, Cal.
  ENGINEERS' CLUB OF ST. LOUIS.
  May 18. Secy., C. W. Hunt, 220 West 57th St., New York city.
  WESTERN SOCIETY OF ENGINEERS.
  May 18. Secy., C. W. Hunt, 220 West 57th St., New York city.
  WESTERN SOCIETY OF ENGINEERS.
  May 18. Gaging of Streams," Wm. G. Price, and "The Use of Coke Breeze in Sewage Purification," John W. Alvord. Secy, N. L. Litten, Monadnock Clock, Chicago, III.
  SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.
  May 18. Secy., L. May 19. Secy., C. M. GUTHERN RAILWAY CLUB.
  May 19. Secy., J. K. Wisan, P. O. Box 333. Cinch-
- May 19. Secy., F. A. Charplot, Macon, Gs. ENGINEERS' CLUE OF CINCINNATI. May 19. Secy., J. F. Wilson, P. O. Box 333, Cincin-
- May 19. Secy., J. F. Wilbon, P. O. Box 600, Class nati, O NEW YORK RAILWAY CLUB. May 19. Secy., W. W. Whestley, 168 Montague St.,
- NEW YORK RALL.
   May 19. Secy., W. W. Whestley, M. Brookiyn, N. Y.
   ENGINEERS' CLUB OF COLUMBUS.
   May 21. Secy., M. S. Hopkins, 14½ N. High St., Columbus, O.
   AMERICAN INSTITUTE ELECTRICAL ENGINEERS.
   AMERICAN INSTITUTE ELECTRICAL ENGINEERS.
   May 25. Secy., R. W. Pope, 26 Courtiandt St., New York
- cly. AMERICAN SOCIETY OF MECHANICAL ENGINEERS. May 30, June 4. Spring meeting, Niagara Falis, N. Y. Secy., Prof. F. R. Hutton, 12 W. 31st St., New York city.

NATIONAL ELECTRIC LIGHT ASSOCIATION. June 7-9. Annual meeting, Chicago, Ili. Secy., Georga F. Porter, 136 Liberty St., New York city.
AMERICAN FOUNDRYMEIN'S ASSOCIATION. June 7-10. Annual meeting, Clincinnati, O. Secy., John A. Penton, Buhl Biock, Detroit, Mich.
OHIO STREET RALLWAY ASSOCIATION. June 8. Annual meeting, Columbus, O. Secy., Frank J. J. Sloat, Akron, O.
AMERICAN WATER-WORKS ASSOCIATION. June 1-16. Annual meeting, Bufalo, N. Y. Secy., Peter Mins, 95 William St., New York city.
MASTER CAR BUILDERS' ASSOCIATION. June 15-17. Annual meeting, Saratoga, N. Y. Secy., June 15-17. Annual meeting, Saratoga, N. Y. Secy., June 20-22. Annual meeting, Saratoga, N. Y. Secy., June 20-22. Annual meeting, Saratoga, N. Y. Secy., John W. Cloud, 974 Rookery, Chicago, Ill.

DETROIT ENGINEERING SOCIETY .- The annual DETROIT ENGINEERING SOCIETY.-The annual meeting of this society was held at the Hotel Ste. Claire on April 30. The following officers were elected for 1898: Pres., Geo. Y. Wisner; First Vice-Pres., Wm. J. Keep; Second Vice-Pres., Alex. Dow; Secy., Gardner S. Wililams; Treas., T. H. Hinchman.

CIVIL ENGINEERS' CLUB OF CLEVELAND .- At the meeting held April 26, Capt, Louis J. Germain lectured on the Des Moines River Improvements. It was main-tained that it was the offics of the real engineer to exercise his own genius in contending with emergencies, as well as to follow precedents in the routine of husiness. Wm. H. Searles, Secy.

ENGINEERS' CLUB OF CINCINNATI .- At the meeting of this club held April 21, Mr. A. O. Eizner read sev eral short papers in reply to questions on the following subjects:

subjects: "Amount of Compressibility of Soils," G. Bouscaren; "Timber Crihbing on Pile Foundations," Bert L. Bald-win; "Impurities in Water to be Used for Cement Mortar," W. B. Ruggles; "Draining Vauits for Dwsiling Houses in Suburbs," Thos. B. Punshon. No action was taken upon ths question of affiliating with the Associa-tion of Engineering Societies. J. F. Wilson, Secy.

AMERICAN FOUNDRYMEN'S ASSOCIATION .- The A annual convention of this association is scheduled to hegin June 7 at the Grand Hotel, Cincinnati, O. The session will continue until the 10th, inclusive, during

which time the following papers will be read: "A Modern Foundry," A. W. Walker; "The M Construction of Iron and Steel," S. S. Knight; "The Micro The Construction of fron and Steel, S. S. Knight, 'Ine Adoption of a Standard System of Test Bars for Cast Iron," R. G. G. Moldenke; "A Talk on Brass Found-ing," Chas. Vickers; "Manganese in Cast Iron," Guy R. Johnson; "The Overhead Trolley Track," H. M. Ramp; Jonnson; "The Overnead Froney Frace," H. M. Ramp; "Necessity of Well Mixed Furnace Casts and True Rs-ports of Analysis," Thos. D. West; "The Manufacture of Steel Castings," Stewart Johnson; "A Test for Deter-mining the Hardness of Cast Iron," C. A. Bauer. AMERICAN INSTITUTE OF ELECTRICAL ENGI-

AMERICAN INSTITUTE OF ELECTRICAL ENGI-NEERS.-The 124th regular meeting of the institute was held in New York city on April 27. A paper by Prot. W. E. Goldsborough, of Perdue University, entitied "An Economy Test of a Central Station," was read by title only, owing to the absence of the author. A hrief ab-stract of this is given elsewhere in this issue. Mr. C. J. Deed followed reading a beaps artitled "A Noval Form Reed followed, reading a paper entitled "A Novel Form of Thermo-Electric Battery." This was a description of a battery using a fused mass of caustic potash or soda and two steel rods as electrodes. It was claimed that as one rod had a smaller section than the other, and con-sequently hecame hotter, an electromotive force was produced. Ths paper size described a series of experinents with different materials employing, however, the same principle.

same principle. ENGINEERS' CLUB OF PHILADELPHIA.—At the meeting of this club, held on April 16, Mr. J. W. Ledoux presented the first paper of the evening on "The Deep Well Pumping Plant at Waukesha, Wis.," in which the details of the water-works plant at this place was dis-cussed as they were in February, 1897. This plant sup-plied an average of 723,000 gallons per day from three artesian wells located at the corners of a triangle having sides 50, 70 and 90 ft., the depth of two wells being 1,000 ft. and the third 1,500 ft. all being furnished with 6-in. drop pipes to the depth of 300 ft. At the center of the tri-angle was a cylindrical hrick-lined reservoir 25 ft. deep by 27 ft. in diameter. The pumping station contained hollers, englacs, pumps and air compressors. The coal hollers, englacs, pumps and air compressors. The coal consumption at that time was 12,000 lbs. per 24 hours. To reduce expenses, two more wells 10 ft. apart were drilled, and two deep well pumps, manufactured under patents of E. E. Johnson (Eng. News, Jan. 20, 1808) were installed. These were guaranteed to give an unusu-ally high efficiency. In this way operating expenses were reduced and a duplicate plant obtained. Later, Mr. Wil-fred Lewis explained the difficulty of measuring the inertia of moving machinery, and described an instrument devised by himself for this purpose. It consists of a curved tube hy himself for this purpose. It consists of a curved tube filied with water except for a small hubble which moves backward and forward, and a graduated scale hesides the tuhe for measuring the amount of movement.

THE NATIONAL ASSOCIATION OF MANUFAC-TURERS OF NON-BESSEMER IRON .- This association is the outcome of a meeting held at the Waldorf Hotel, New York city, on April 22-23, in response to a call authorized by the Southern Pig Iron and the Eastern Pig iron Associations, to consider the practicability of organization to co-operate among the different pro

ducing districts. The preliminary work consisted in the formation of local organizations, in which about 37 c

The service represented. Two representatives from each district were appointed to form a committee on permanent organization, on rep-resentation and on plan of procedure. The name given above was adopted, and it was stated that the object of the association "shall be the collection and distribution the association "shall be the collection and distribution of all statistics hearing upon the production, sale, ship-ment and consumption of non-Bessemer pig iron, and for the prompt distribution among the mamhers of the asso-ciation of this information, and also for such other objects as the association may deem proper from time to time.

The general plan finally adopted was that the votes The general plan finally adopted was that the votes would be on a hasis of number of stacks and output, each stack entitling the holder to a vote, and each 10,000 tons monthly output also adding a vote. It is likely that a secretary will be employed to collect daily statistics, such as production, sales and shipments, and it is under-stood that the position has heen offered to Mr. John Bir-kinbine of Philadeiphia. kinbine, of Philadelphia.

kinbine, of Philadeiphia. An Executive Committee, holding monthly meetings and composed of two elected delegates from each dis-trict, will manage the association. Operating expenses will be defrayed from a fund raised by an assessment of 10 cts, per ton on the hest monthly output of the last six months. In the future a monthly assessment of 10 cts, per ton will be made, from which the Executive Com-ultee will expend such amount as it thinks necessary per ton will be made, from which the incentive out mittee will expend such amount as it thinks necessary to promote the best interests of the trade. The plan as outlined will hs put in operation provided furnace com-panies aggregating 225,000 tons monthly output will join the association on or before May 20.

#### NEW PUBLICATIONS.

LITERARY MAGAZINES.—In the April "Fortnightiy Review" we find a paper on "The Maine Disaster and After," in which the author displays a sublime ignorance After," in which the author displays a summe ignorance of the United States that would be amusing if his topic were a less serious one. We need only remark that he considers Spain's hope of success in a war with the United States would be to foment internal dissensions in this country which would cause it to split up. To quote verhatim:

A reverse at the hands of Spain would mean the split-ting up of the United States into two, if not three, inde-pendent republics. The East hates the West and the South hates both, and many are the men biding their time. Comment on such a statement is superfluous, in these

Comment on such a statement is superfluous, in these columns at least. We only wonder that the editor of the "Fortnighty" should give space in his columns to the work of so ill-informed a writer. Other articles in the same magazine which deserve mention here discuss Brit-ish trads conditions in China and the clash of French and British colonizing interests in the Niger. In the "Ninetsenth Century" we find a most valuable article on "The Latest Reconstruction of the Navy," hy Sir Wm. H. White, Director of Naval Construction, which should he of interest just now when naval matters are of

Sir Wm. H. White, Director of Naval Construction, which should he of interest just now when naval matters are of such absorbing interest here. Mr. A. S. Hurd writes on "British Ships in Foreign Navies," and advances the idea that should England hecome involved in a naval war with a first-rate power, the ships she has sold to foreign na-tions might prove most unwelcome aids to the enemy. In "The Contemporary Review" we find an article on the information of the Britesian Summed up ha

In "The Contemporary Review we and an article on the "Cycls Industry" in Great Britain. Summed up in a nutshell, the English hicycle manufacturers have sold out their plants to hugely over-capitalized stock companies on the strength of the profits of 1895 and 1896. The result is that British hicycle hullding concerns are keeping up their prices in the attempt to pay dividends on enormously

their prices in the attempt to pay dividends on enormously watered stock, and the product of the small English man-ufacturers and the well-made American machines are fur-nished at a lower price, and are taking the trade. In the May "Popular Science Monthly" Mr. Worthing-ton C. Ford continues his discussion of "The Question of Wheat," which we noticed last month. He shows that in normal seasons the four countries of Europe which produce a curcience of wheat (Ruesle Jungary Enouron) and Bula surplus of wheat (Russia, Hungary, Roumania and Bul-garia) can export about 75,000,000 hushels, which about supplies the needs of Belgium, Switzerland, and the Scandinavian countries, leaving Great Britain, France, Ger-many, Austria and Italy, whose comhined demands over and ahove their own production amount to 430,700,000 bushels per annum, to he supplied from abroad. Except for bushels per annum, to be supplied from abroau. Exception the small contribution of India, nearly all this enormous demand must be supplied from the vast plains in the tem-Indian Bridge Between North and South America" is the title of a paper by Mr. J. W. Spencer, in which the strange conformation of the ocean bottom in the vicinity of the West Indies is explained. Mr. Geo. J. Varney contributes a summary of the progress of kite-flying achievements in 1897, and there is a thoughful paper translated from a French scientific journal entitled "Man's Dependence on the Earth," which raises many questions worthy of serious conalderation.

The May "Century," despite a delirium of color on its cover which is unpardonable, is a most excellent numher. The article of most interest to our readers is entitled "Railway Crossings in Europe and America," by Franklin B. Locke. The paper gives an interesting account of for-eign practice and American progress in the elimination of grade-crossing; but the writer displays very lame logic when he reasons that because European railways, which TI

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have few grade-crossings, maks larger returns ital invested in them than American, therefor-rallways could increase their dividends by grade-crossings. His criticism of the rallways the capmerican minating grade-crossings. His criticism of the railways tivating suburban traffic, also displays scant of the real facts in connection with Americ management. Among articles of scientific late account of the ascent of the "Mesa Encantada edge allway are an account of the ascent of the steam chicantaota last sum-mer, and its archaeological significance. "What Are the X-Rays," by John Trowbridge; "Submarine Photog-raphy," by Louis Bouton, and a description of the Pyra-

mids, In "Harper's" for May we find a most valuable teresting discussion of "The Trans-Isthmian Ca. lem," hy Col. Wm. Ludlow, U. S. Engineers, A our readers will recall, Col. Ludlow was one of mission of Engineers which reported on the Canal enterprise in 1805, and his remarks on are so interresting that we have remarks on Prob-Dost of aragua work are so interesting that we have reprinted this his paper elsewhere in this issue. Julian Ral, "Awskened Russia," and gives a moat intere-sion of the people, the resources and the on of Julian Ralph industries of modern Russia.

modern Russia. The "Review of Reviews" for May is very largely de-voted to a discussion of the stirring events in connection with the Cuban question which have characterized the past month. As a rule this journal is noted for its judicial discussion of the questions of the day, but in its remarks remarks

discussion of the questions of the day, but in its remarks on the Cuhan question, like many other journals, its sym-pathies appear to be enlisted to such a degree as to make it depart somewhat from its usual non-partisan attitude. In the English "Pall Mall Magazine" the series of arti-cles on "The Evolution in Comfort in Railwav Travel-ling," which we noticed last month, is continued with an article in which the progress in English passenger-car equipment is described. The writer goes out of his way to cast slurs on American passenger accommodations, pre-facing his remarks on the subject with the statement that "American railroads have done hut little to provide com-fortable vehicles for their patrons." As might be expected from a writer who starts out with a statement so wide of the truth, his further remarks respecting American pas-senger and parlor-car accommodations are very far from the truth, his further remarks respecting American pas-senger and parlor-car accommodations are very far from the mark.

the mark. In the May "North American Review," papers by Clara Barton on "Our Work and Observation in Cuba," and by Horatio S. Ruhens. Counsel of the Cuban Junta, on "The Insurgent Government in Cuba," will doubtless attract chiefest interest. Only second to these are papers on the Insurgent Government in Cuha," will doubtleas attract chlefest interest. Only second to these are papers on the methods of recruiting an army, by Capt. Parker and Lieut. Dapray. The former of these is a careful study of the recruiting methods adopted during the Civii War, and a discussion of the best means of raising an army for the United States to adopt. Our present experiences should teach us some valuable lessons as to the length of time required to transform even our trained militia into United States troops. It seems likely that when pages entire States toops. It seems likely that when peace again per-mits the careful study of these matters, we shall see some arrangement perfected by which a national militla will sup-plement our present state organizations. Added interest to given to this subject by the paper by Sir Wm. H. Russell, in the same magazine, on "Recollections of the Civil War," in which he vividly describes the tunuit of disorder in military matters which existed in the dark double In military matters which existed in the dark days of '61.

In mining matters which existed in the dark days of '61. STATISTICS OF RAILWAYS.—Ninth Annual Report of the Statistician of the Interstate Commerce Commis-sion for the Year Ending June 30, 1897. Pub. Doc.;  $6 \times 9$  ins.; pp. 706; map. This is the full report of the Commission, the advance sheets of which were reviewed in Engineering News of Oct 91 1807.

Oct. 21, 1897.

L'ARCHITECTURE DU FER ET DE L'ACIER.-Par A. Vierendeel. Professeur a L'Universite de Louvain. Conference donnee au Congrès International des Ar-chitectes reuni en Aout 1897, a Bruxelles. Paris, 1898; Ed. Lyon-Claesen. Pamph.; 8 x 10½ lbs.; pp. 16; illustrated.

This paper discusses the use of iron and steel for hulidlaga and bridges from the point of view of developing its capabilities for ornamental construction and ornamen-tation. A number of Illustrations show the practical application of the ideas advanced in the hody of the paper. COMMERCIAL DIRECTORY.-Providence Journal of Commerce, Providence, R. I., March, 1898.

In this number of this publication is begun the publication of a commercial directory in four languages, En-glish, German, French and Spanish, which will be continued in succeeding issues until completed. The purpose of this publication is to develop a complete directory of the commercial, industrial and manufacturing establishments of the United States, which will ultimately be published in book form

MUNICIPAL REPORTS .- The following municipal re names mentioned heing those of city engineers and the otherwise noted:

otherwise noted: Metropolitan Sewerage Commission, Boston and Vi-cinity, Wm, M. Brown, Jr., Chief Engineer, Boston, Mass; Brockton, Mass., F. Herbert Snow; Cambridge, Mass., L M. Hastings; Chelsea, Mass., J. H. Stubbs; Fitchburs, Mass., David A. Hartwell; Haverhill, Mass., Robert R. Fvans; Spencer, Mass., Special Report on Sewage Dis-oence, R. 1, Otis F. Clapp; Albany, N. Y., Horace An-drews; Gloversville, N. Y., C. Piske, Jr.; Utica, N. Y., Chapman L. Johnson; Bridgeton, N. J., Special Report on Sewerage and Sewage Disposal, Alex. Potter, Engineer, 137 Broadway, New York city; Baltimore, Md., Report of City Commissioner, William A. Hanway; Peoria, III, Department of Public Works, Almon D. Thompson; Min-mespolis, Minn., F. W. Cappelen; Des Moines, Ia., L. Hig-gins; Montreal, F. Q., Percival W. St. George.

TIDE TABLES FOR CHARLOTTETOWN, PICTOU AND ST. PAUL ISLAND, C. B., FOR 1898.-With Tidal Dif-ferences for Northumberland Strait; and for the Open Guif Shore, from Miramichi along the North Coast of Prioce Edward Island. Issued by the Tidal Surrey Branch of the Department of Marine and Fisheries of the Dominion of Canada: W. Bell, Dawson, Engineer in charge. Paper; 3% × 6½ ins.; pp. 10.

SPECIFICATIONS FOR STEEL FIRE BOAT, for the city of Chicago. Fire Department, March 1, 1898. Pamph.; 94 × 12 ins.; pp. 26. 12 ins.; pp.

This pamphlet contains a very elaborate set of specifi-This pamphlet contains a very elaborate set of specifi-cations for a new fire boat for the city of Chicago, 118 ft. long, 24 ft. heam, 9 ft. draft. It is to be provided with three double-acting duplex vertical crank and flywheel fire pumps of a capacity of 3,000 gallons per minute for each pump.

JERSEY STATE BOARD OF HEALTH.-Report for  $0e^{-7}$ . Henry Mitchell, M. D., Secretary, Trenton, N. Paper;  $6 \times 9$  ins.; pp. 389; many tables. NEW 180

J. Paper; 6  $\times$  9 ins.; pp. 389; many tables. A large part of this volume is taken up with reports from local boards of health, some of which give information re-garding water supply, sewerage and garbage disposal sys-stems. Two papers read hefore the New Jersey Sanitary Association in 1896 are reprinted: "The Public Health Law Association in the sub-state of the rubbe reach has a of New Jersey," by Judge W. M. Lanning, and "River Pollution," by E. J. Marsh. The usual report of vital statistics is given.

statistics is given.
FATIGUE OF METAL IN WROUGHT-IRON AND STEEL FORGINGS.—By H. F. J. Porter. The Bethlehem Iron Co., South Bethlehem, Pa. Pamph.; 6 × 9 ins.; pp. 55.
This pamphlet is a reprint from the Journal of the Franklin Institute of a lecture delivered hy Mr. Porter on the relative endurance of wrought iron and steel of different qualities to repeated loads. The results of the tests show that high carbon steel has a much longer life than low carbon ateel under stresses like those to which axles irections.

directions. THE COLLECTION AND DISPOSAL OF HOUSE AND STREET REFUSE IN ENGLAND.-By H. Alfred Roechling, C. E., Leicester, England. Paper; 6×9 ins.; pp. 28. Address the author, as ahove. This is a general survey of the subject named, "with especial reference to the destruction by fire of such refuse." The author states that the contract system of collection and disposal has been almost entirely ahan-doned in England, the work being done by the munici-maining and the cost met by reneral taxation. He esti-collection and the cost met by reneral taxation. palities and the cost met by general taxation. He esti-mates that 70 towns and cities, with an aggregate papu-lation of 8,279,000, have adopted refuse destruction by fire since 1876.

THE GREAT NORTH SIDE OR BOROUGH OF THE BRONX. New York: Issued by the North Side Board of Trade, 278 Alexander Ave., near 139th St., New York city. Svo; paper; pp. 249, xxv. Profusely Illustrated. This is a very creditable publication issued to show the advantage, for residence and business, of that portion of New York city included in the Borough of the Brony and greatly exceeding in area, of course, the Borough of Man-hattan, which is still commonly thought of and spoken of as New York city. Among the dozen or more contributors to the volume are such well-known men as Gen. Egbert L. Viele, Hon. Louis F. Haffen, the late John C. De La Vergne and Hon. Samuel McMillan.

and Hon. Samuel McMillan. CONNECTICUT CIVIL ENGINEERS' AND SURVEYORS' ASSOCIATION.-Proceedings of Annual Meeting at Hartford, Conn., Jan. 11, 1898. Secretary and Treaa-urer, Geo. K. Crandall, New London. Paper; 6×9 ins.; pp 51 + 1V.; Illustrated. 50 cts. This report contains the three following papers: "Chem-lcal Precipitation Works at New Rochelle, N. Y.," by J. K. Wilkes, of New Rochelle, N. Y.; "Roaring Brook Wa-ter Supply for New Britain," by T. H. McKenzie, of Southington; "The Loss to the Civil Engineer by His Laek of Sociability," by Edwin D. Graves, of Hartford. are subjected, such as repeated bending in opposite There is also a list of members and a general index to the reports of the association from 1885 to 1895, in-clusive. clusive.

REPORT OF NORTH CAROLINA RAILROAD COMMIS-SION.-Commissioners, L. C. Caldwell, John H. Pear-son and D. H. Abbott. Pub. Doc. Cloth; 6 x 9 lns.; pp. 527.

The first 90 pages of this report give in full the pro-ceedings in the matter of the suspension by Governor D. L. Russell of J. W. Wilson and S. O. Wilson from their positions of Commissioners, for violation of the section of the Railway Commission Law, which requires that no Commissioner shall hold any stock or bond of any railway company or have any interest in any way in such company. The remainder of the report is given up to the statistics of railways and the routine proceedings of the Commission

STREAM MEASUREMENTS.—Report of Progress for the Calendar Year 1896. By Arthur Powell Davis. Ex-tract from the Eighteenth Annual Report of the U.S. Geological Survey, 1806-7; Chas. D. Walcott, Direc-tor. Paper; 7½ x 12 Ins.; pp. 418; 23 plates, 75 fig-ures In the text and many tables. Washington, D. C.; Pub. Doc.

Pub. Doc. Detailed descriptions of the several gaging stations and the results obtained during 1896, and sometimes for other periods, are given in this volume. The work was ex-tended to the southeastern part of the country in 1896. The survey is gradually accumulating a large number of The survey is gradually accumulating a large number of widely distributing gagings which bid fair to become of great importance, especially when taken in connection with the special studies of the water resources of a num-ber of states, now in progress, and the rainfail records of the Weather Bureau. The report contains numerous maps and diagrams and many half-tone reproductions of pho-herenbe tographs.

DIE KNICKFESTIGKEIT IN THEORIE, VERSUCH UND \* PRAXIS.-By Fr. V. Emperger. Pamph; 6 × 9 Ins.; pp. 85. Published by der Zeltschrift des Oesterr. Ingeneur und Architecten Vereines, Vienna. Price, 50 cts.

This is a paper on the strength of columns, contributed to the Proceedings of the Austrian Society by Mr. von Emperger, together with the discussion. Among those taking part in the discussion were Professora Tetmajer of Zurich, Melan of Brunn, Mayer of Vienna, Ostenfeld of Copenhagen and our own Merriman and Duhois, mnking the discussion international in its scope.

ing the discussion international in its scope.
WATERBORNE TYPHOID.—A Historic Summary of Local Outhreaks in Great Britain and Ireland, 1858 to 1803, with a Tabular Analysis of 205 Epidemics. A Report Prepared for the Parliamentary Bills Committee of the British Medical Association. By Ernest Hart, D. C. L., Chairman of the Committee. London: Smith, Eider & Co., 15 Waterloo Place. Paper: 8½×11 Ins.; pp. 62; tables and illustrations. English price, two shillings; American price, \$1.
This is a carefully prepared summary and discussion of all well authenticated epidemics of typhoid fever that have occurred in Grea. Britain and Ireland during the past 26 years. Its important bearing upon the question

past 36 years. Its important bearing upon the question of pure water supplies is apparent at first thought, and grows stronger as one sees from the record the various ways in which water supplies become polluted.

MASSACHUSETTS STATE BOARD OF ARBITRATION AND CONCILIATION.-Report for the Year Ending Dec. 31, 1897. Chas. H. Walcott, Chairman; Bernard F. Supple. Clerk, State House, Boston. Paper; 6×9 Ins.; pp. 176.

ms; pp. 100. The efforts of this board to bring about speedy and equitable settlements of difficulties between employers and employed seem to have been more successful in 1897 than in previous years. This, however, is only the general impression received in reading the detailed reports from year to year. Work of this sort cannot easily he sumyear to year. Work of this sort cannot easily he sum-marized, and the board does not attempt it. It gives 36 reports and decisions of cases coming before it in 1897. A valuable feature of the report is an appendix contain-ing the constitutional or statutory provisions of 24 states of the union "for mediation of one kind or another in the settlement of industrial disputes."

settlement of industrial disputes." VIADUCT ACROSS ROCK CREEK, DISTRICT OF COLUMBIA.—Letter from the Commissioner of the District of Columbia, transmitting report, descriptions, specifications, plana and estimates for a hridge or viaduct across Rock Creek, on the extension of Con-necticut Avenue, Washington. Senate Document No. 96, 55th Congress, 2d Seasion;  $9 \times 5\%$  Ins.; pp. 26; 35 folding plans and diagrams. This is the full report and the competitive plans for the proposed viaduct on Consectivut Area is Washington.

Into its the full report and the competitive plans for the proposed viaduct on Connecticut Ave., in Washington, illustrated and described in our issue of Jan. 27, 1898. As there announced, six plans were sent in by Messrs. George S. Morison, L. L. Buck and W. H. Breithaupt, all Members of the American Society of Civil Engineers. The Commissioners decided in favor of Mr. Morison's plans for a masonry bridge; and awarded prizes to Messrs Methematical Society of Messre Methematical Society of Messre Messrs. Buck and Breithaupt, for alternate Melan and steel construction.

LE PONT VIERENDEEL.-Notes pour le Jury Concours Somzee, de l'Exposition Universelle de 1897 a Brux-elles. Bruges. 1898, Chas, Houdmont. Paper; 8 × 101/2 ins.; pp. 75; Illustrated.

Mr. Vierendeel, who is an architect and a professor of architecture in the University of Louvain, has devised a type of bridge in which the truss element is the rectangle Instead of the triangle. At the Brussells Exhibition of last year a bridge of this type was tested to destruction. The results of this test and the conclusions of the jury hv which it was made, together with the claims made by the designer for his construction, his answers to various criticisms, and a discussion of the methods of calculating both this construction and the ordinary truss construction are collected in this publication. The whole makes a very interesting little pamphlet to engineers who may be interested in seeing what an able engineer has to say for the advantages of replacing the triangle so long used as the fundamental truss element with the rectangle or portal construction.

SIXTEENTH ANNUAL REPORT of the State Bureau of Labor Statistics Concerning Coal in Illinois. 1807. David Ross, Secretary of the Bureau, Springfield, Ill. Pamph; 6 × 9 ins.; pp. 223.

This report, besides the usual statistical record of the state inspectors of mines, concerning production, acci-dents, etc., contains a review of the great cosl miners' strike, which lasted four months, involving 28,700 men and resulted in an average increase of wages of 26%. It also contains much interesting matter relating to coal mining economy. The output of coal in the state for the mining economy. The output of coal in the state for the year 1897 was 20.072,758 tons of 2.000 lbs., an increase of 1.46% over the preceding year. The average value of lump coal at the mines was 85.2 cts. and of other grades 36.5 cts. The average value of all coal was 72.1 cts., ranging from \$1.036 in the second district to \$0.531 in minimized the second district to \$0.531 in the sixth district. The average value of lump coal at all the mines in 1833 was \$1.025. The use of mining ma-chines has made but slight progress, only 19.66% of all the coal having been cut by machines.

PROPOSED SEA WATER PIPE LINE FOR THE CITY OF NEW YORK-Reports of Chief of Department Hugh Bonner and Consulting Engineer Foster Crowell to the Board of Fire Commissioners. Paper; 6×9 Ins.; pp. 27.

This report contains descriptions by both Mr. Crowell and Mr. Bonner of the special fire protection systems of Cleveland, Milwaukee, Detroit, Buffalo and Boston, each of which consists of a separate system of pipes supplied water from the lake front or ocean by means of

fire boats. The Boaton system alone makes use of salt water. The report recommends an experimental system for New York, consisting of nearly a mile of 12-in. and 14-in. mains, extending from the North River through Franklin St. to Broadway, with two branches. Stand-pipes and aerial lines of pipe are also considered advisa-ble for the protection of tail buildings and for checking the spread of first from roof to root. In our issue of March 24, 1898, there appeared a description of the separate high pressure fire protection system of Providence, R. I. The water for this system is taken from the same source as the regular supply of the city.

BROOKLINE PUBLIC BATH.—Reports of the Building Committee and of the Committee on Chre and Man-sgement. With an Appendix Containing a Description of the Building, Illustrations, Schedule of Hours, etc. H. Lincoln Chase, M. D., Secretary Committee on Care and Management of the Public Bath. Paper;  $6 \times 9$ ins.; pp. 20; Illustrated. Address the Secretary at Brookline, Mnss.

The report atates that this is "the first municipal all-the-year-around bothing establishment, with swimming facilities as well as cleanliness baths," to be established In this country. Besides private haths, to be estamated there are two swimming tanks, one for general use,  $26 \times 80$  ft., and one for instruction,  $10 \times 22$  ft. The water for the hath house is taken from the public supply. The water for the tanks is maintained at a temperature of  $70^{\circ}$  to  $75^{\circ}$  F. by means of a pulsometer. The total ap-(U) to (5)" F, by means of a pulsometer. The total appropriation for the construction of the hath house, including grading around it, was \$43,000. This does not include the cost of land, the site having been already owned by the city. Mr. F. Joseph Untersee, of Brookline, was architect for the hath house, and Mr. F. F. Forbes, Superintendent of the water-works of Brookline, is a member of the Committee on Care and Management. ber of the Committee on Care and Management.

GAS AND ELECTRIC LIGHT COMMISSIONERS OF MASSACHUSETTS-Report for 1897. Paper; 6 × 9 ins.; pp. 184 + CLXXXVI.; many tables. Boston: Address the Commission.
 The board now has under its supervision 134 companies.

The board now has under its supervision 134 companies, 13 towns and two cities. Of the companies 45 supply gns, 65 supply electricity and 24 both gas and electricity. Of the municipalities two supply both forms of light and 13 electric light only. The report contains the usual re-views of the proceedings to establish municipal plants; petitions, hearings and decisions for revisions of rates; reports on deaths caused by gas and electricity; the detailed operations of the several companies, with the charged for gas and electric lighting both public and private. The prices for lighting are the most detailed and satisfactory of any published in this country, so far as we know. Of course they are limited to Massachusetts towns and cities. The volume contains the following spewe know. Of course they are limited to Massachusetts towns and elties. The volume contains the following spe-cial reports by the board: On "Certain Deaths from As-physiation by Hluminating Gas;" on "Water and Coal Gas Used in the City of Boston;" and on "The Causes of the Gas Explosion on March 4, 1897, at the Corner of Tremont and Boylston Streets in the City of Boston."

and boyiston streets in the City of Boston. WATER RESOURCES OF INDIANA AND OHIO.-By Frank Leverett. Extract from the Eighteenth Annual Report of the U. S. Geological Survey, 1804-7; Chas. D. Walcott, Director. Wishington, D. C.: Pub. Doe. Paper; 7½ × 12 ins.; pp. 139; five plates, two figures in the text and numerous tables. This volume first describes the surface waters of Ohio

and Indiana, after which the underground waters of In-diana are treated at length and those of Ohlo more hriefly. The less full treatment of the underground waters of Ohlo The less full treatment of the underground waters of Onio is due to the fact that arrangements have been made for a separate report on that subject. The present volume does not take up water power, owing to the fact that Ohio was well covered in this respect in the Reports of the Tenth Census, while a special report on the water power of Indiana is forthcoming. A considerable amount of information, largely statistical, is given regarding the city water supplies of the two atates. This is based on correspondence, supplemented by "The Manual of American Water-Works" for 1897. A number of water snalyses are included. Among the plates one shows the topography and another the geological formation of the two states nud a third shows the relation of the glacial depoalt to ordinary wells.

weils, ANNUAL REPORT. MASSACHUSETTS RAILROAD COMMISSION, 1898.—Commissioners, John E. Sanford, Geo. W. Bishop and Hersey B. Goodwin. Pub. Doe.;  $6 \times 9$  ins.; pp. 421. The main body of this report is about equally divided between steam railways and street railways, and one of one that between steam railways and street railways, and one of the most interesting discussions in the report is that comparing the relative growth of steam and street railway passenger traffic during the past three or four years. During the year there was a decrease of 11½ miles in steam railway mileage, and a general falling off in traffic and earnings in all particulars, although this shrinkage was very nearly counterbalanced by strict economy and was very nearly counterbalanced by strict economy and a marked reduction in operating expenses. During the year it is stated that freight rates reached their lowest average point in Massachusetts, at 1.25 cts. per ton per mile. Although the falling off in the number of passengers carried by steam rallways has been very marked since 1893, the report says that no exact statement can be made as to how much of this is due to the general commercial depression and how much to the competition of electric rallways for the local and suburban travel. These electric roads have, according to the report, however, been in-creased by 148 miles during the year, making now a total ereased by 148 miles during the year, making now a total street railway mileage in this state of 1,453 miles, of

which 1,428 miles are operated by electric power alone The average cost of this railway per mile of main track has been \$44,457, ranging from \$10,000 to \$97,000. The business and earnings of these street railways both show an increase over the preceding year. Of the total 93 companies, 50 paid dividends of from 2% to 10%.

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## TRADE PUBLICATIONS.

m (The standard sizes for pamphlets and trade catalogues recom stended by all the principal engineering societies of the United ates are:  $3 \cdot 2 \times 6$  ins.;  $6 \times 9$  lines, and  $9 \times 12$  lines.)

NATIONAL BICYCLES.—National Cycle Mfg. Co., Bay City, Mich. Pamph;  $6 \times 8$  ins.; pp. 31. This pamphlet illustrates the various models of 1898 bicycles offered by this company.

DE LA HUNT FLUSH TANKS.-Malcolm V. Bolton, Ce-dar Rapids, Ia. Folder; 3½ × 6 ins.; pp. 4.

This pamphlet describes an automatic siphon, without oving parts. A section is shown.

VALVES, INJECTORS, STEAM SPECIALTIES.—The Lunkenheimer Co., Cincinnail, O. Pamph.; 4% × 7% ins.; pp. 208.

This is a very complete illustrated catalogue and price list of a great variety of steam, water, gas and oil fittings. EFFICIENT POWER PUMPS.—The Goulds Manufactur-ing Co., Seneca Falls, N. Y. Pamph.; 8 × 7 ins.

This is a six-page supplement to the catalogue of power pumps issued by this company to show some of the larger types of machines it builds.

WELL DRILLING PLANT.-O. P. Benjamin Mfg. Co., Lafayette, Ind. Paper;  $6 \times 8$  ins.; pp. 48. Well drilling rigs operated by hand and horse-power,

are illustrated and described, together with a variety of tools and appliances used in this class of work.

STEAM BOILERS.—The Murray Iron Works Co., Burling-ton, Iowa. Pamph.; 9 × 6 ins.; pp. 6. This pamphlet contains half-tone cuts of five styles of horizontai return tubular holiers, designed for high pressures.

STEAM FIRE ENGINES, ETC.-Waterous Engine Works Co., St. Paul, Minn. Pamph.; 9½ × 6½ ins.; pp. 50. This is a catalogue of steam, gasoline and chemical fire engines, hose carts, hook and ladder trucks and other fire apparatus.

STEAM VALVES.—Thos. G. Oakes & Co., 54 John St., New York city. Paper;  $6 \times 3\frac{1}{2}$  ins.; pp. 16; illustrated. This is a priced catalogue of the Oakes acorn, globe and

Oakes acorn jointing and royal red packing.

MECHANICAL STOKERS.-Westinghouse, Church, Ko & Co., 17 Cortlandt St., New York, Pamph.; 114 7% ins.; pp. 39.

This pamphiet contains an illustrated description of the ell-known Roney stoker, with views of boiler plants in which it is in use.

THE NATIONAL FEED WATER HEATER.—The Nation-al Pipe Bending Co., New Haven., Conn. Pamph.;  $3\frac{1}{2}$  $\times$  6 ins. In this small pamphlet the gain by the use of feed water heaters is set forth, and the National heater is illustrated and described.

FIREPROOF BUILDING MATERIALS.-Henry Maurer & Sons, 420 E. 23d St., New York. Pamph.; 6 × 9 ins.; 96.

pp. This is a handsomely illustrated catalogue of fire brick, porous terra cotta, flat hollow arches, tiles, etc., for fireproof huilding construction.

MECHANICAL STOKERS.-Wm. Sellers & Co., Incorporated, 1600 Hamilton St., Philadelphia. Pamph.; 5 x 7½ ins.; pp. 26.
This pamphlet describes the Vicars mechanical stoker,

which is in extensive use in Great Britain, and has recently been introduced in this country.

THE FINAL EFFORT OF THE TRUST DEFEATED.-The Walker Co., Cleveland, O. This somewhat warlike title introduces circular No. 1071 of the Walker series, in which the decision of the United States Circuit Court of Appeals in the case of Thomson-Houston Co., appellee, vs. Union Rallway Co. et al, appel-lant, is given. The Walker Co. considers this a great victory, as it practically throws the manufacture and sale of underrunning trolley open to all.

STATIC TRANSFORMERS .- Circular 1072, hy the same ompany, gives notice that all the transformers necessary in connection with Walker alternating current machinery will be of the well-known "Wagner type." These are manufactured for the Walker Co. by the Wagner Manufacturing Co., St. Louis, Mo. The circular describes the details of this make of transformer and gives tables of asions and results of tests.

DYNAMITE.-King Powder Co., Cincinnati, O. Paper fold-er; 9% × 6 ins.

This company's "Rex powder" is a high class of dyna-nite, and it also manufactures an ammonia powder of a nomewhat low grade. Both explosives are put up in cartridge form.

TRAVELING CRANES.—Case Mfg. Co., Columbus, O. Paper; 8×10% ins.; pp. 8. A great variety of cranes and hoists is manufactured hy this company, but this pamphlet deals with its three-motor electrical traveling cranes for heavy lifting in railway erecting shops and foundries, etc.

EXCAVATING MACHINE.—Calhoun Excavator Co., Unity Building, Chicago. Paper; 6×8% ins.; pp. 8. This pamphlet contains a reprint of an illustrated ar-ticle in Engineering News, describing the Calhoun excavating and conveying machine for handling coal, ore, etc.

TENTS AND CAMP OUTFITS.-H. Channon Co., 24 Mar-ket St., Chicago. Paper; 6% × 10 ins.; pp. 88, Tents of all kinds, flags, camp cooking outfits, waterproof coats, caps, gun cases, etc.; camp furniture, ham-mocks, hoat fittinga and a variety of articles of this character are included in this catalogue.

ROCK DRILLS.-The John M. Rogers Boat, Gage and Drill Works, Gloucester City, N. J. Circular; 4 pages. This circular describes a rock drill which has some novel features. The valve is of the Corliss type, which it is claimed has many advantages over the piston or sp valve used in other drills.

TELESCOPIC.METER COUPLING.—Neptune Meter Co., 253 Broadway, New York city. One-page circular. The Trident telescopic coupling is designed for use in connecting meters to iron pipes. It consists of a regular coupling inserted into a sleeve provided with plastic packing material, giving a telescopic movement of  $\frac{3}{4}$ -in.

PUMPS AND WATER SUPPLIES.-O. P. Benjamin Mfg. Co., Lafayette, Ind. Paper, 4½×7 ins.; pp 268. This is a comprehensive catalogue and price list of the lighter styles of pumps and an almost endless variety of supplies. Numerous styles of windmill and well pumps are shown, also hydraulic rama and special pumps for irrigation work.

MELAN ARCH BRIDGE, TOPEKA, KAN.-The Commer-cial Ciuh, Topeka, Kan. Pamph.; 9 × 7 ins.; pp. 32; cial Ciuh, iliustrated.

This pamphlet illustrates and describes briefly the new Kan., and fully described in Engineering News of April 2, 1896; Sept. 23, 1897, and Feb. 10, 1808.

FAN MOTORS.-General Electric Co., Schenectady, N. Y. Pamph.; 5% × 7 ins.

Pamph.; 5¼ × 7 ins. This is a very attractive little circular hearing the number 9060, in the General Electric Scries. Its 14 pages are devoted to illustrations and descriptions of the types of fan motors, both direct and alternating current, that this company is offering for the summer of 1898.

RAILWAY WATER SUPPLY.—U. S. Wind Engine & Pump Co., Batavia, Iil. Paper; 6% × 10 ins.; pp. 48. This company manufactures a full line of machinery and

supplies for railway water stations, including tanks and tank trestles, gas and windmill pumps, well pumps, tank fittings, and the Mansfield water column for filling locomotive tenders.

PAVING TOOLS AND MACHINERY.—The Contractors' Tool Co., 727 Arch St., Philadelphia, Pa. Paper;  $6 \times 9$  ins.; pp. 30; illustrated. This is a priced catalogue of asphalt mixers, wagons, rollers and thermometers; mastic and roofing kettles; dippers, stirrers and huckets; shovels, rakes and other asphalt tools; cement and concrete tools; picks and ham-mers; piows, scrapers and tools for road work.

mers; plows, scrapers and tools for road work. COAL HANDLING FOR STEAM GENERATION.—C. W. Hunt Co., 45 Broadway, New York. Pamph.;  $6\% \times 9\%$  ins; pp. 64. This pamphlet contains illustrated descriptions of the well-known Hunt Conveyor and other machinery for handling coal, ashes and other materials, for bolier rooms, coal yards, etc. Many sectional and photographic ylews are shown of actual illustrations.

LUNDELL FAN MOTORS.-Sprague Electric Co., 20 Broad St., New York city. Pamph.; 7×9¼ ins.; il-iustrated.

This pamphlet describes the various types of fan motore manufactured under the trade name of Lundell. A portion of the space is given up to illustrations of details of armature, field, hearings and hrush holders. The motors are made for both alternating and direct current.

PIPE THREADING AND CUTTING MACHINES.-Th Bignall & Keeler Manufacturing Co., Edwardsville Ill. Paper; 4 × 6 ins.; pp. 108; illustrations and table ardsville,

This is a priced descriptive catalogue of hand and power pipe threading and cutting machines, combination bench and pipe vises, shapers, emery surfaces, screw punches and special tools and machinerv. Many testionials are given and a number of useful tables.

FIREPROOF STEEL GRAIN ELEVATORS.—The Steel Storage and Elevator Construction Co., Buffalo, N. Y. Pamph.; 6×9 ins.; pp. 31; illustrated. The steel tank system of elevator construction controlled

by this company was described in Engineering News of

the more important PUMPS .- The Lawrence Machine Co., Lawrence, Mass. Pamph.; 8 × 5½ ins.; pp. 46. This is the 7th edition of an illustrated catalogue and price list of different forms of centrifugal for a variety of conditions. Some of the with engines direct connected. One of the adapted are huit by this company has a record of lifting without of the succion for 60 days continuously without of 26 11 by losing its suction.

RAILWAY VELOCIPEDES.—The Railway Hagerstown, Ind. Paper;  $3\frac{1}{2} \times 6$  ins. The Hartley & Teeter inspection cars bu Mig. Co. this com pany, are huilt on the hicycle system of co-tube frames and wire-spoke wheels. The tion, with le-seat car has a diamond frame with transverse mem to the axles, while the double-seat car has ( op frame side by side. The weights are 60 and 75 lb ELECTRIC ROCK DRILLS.-Marvin Elec Canastota, N. Y. Pamph.; 6×9 ins.; pp. Drill C

Canastota, N. Y. Pampn.; 6×9 ins.; p This pamphlet gives a very good gener the Marvin electric percussion rock driii, cription of has he quite extensively used for quarrying and rock at the quarries of the Solviay Process Co., the New York State Canals improvement, and at othe the drill and the generator construction are fully described and a number of records of capacity are also given. places. Bott GENERATORS AND MOTORS.-Armitage-Herschell Co.

North ionawanua, v. i. This is a card giving a very brief description of a type of slow-speed multipolar machine. A table of sizes, rating and prices is given from 1-16 to 50 HP. This is based on the output at a speed of 1,000 revolutions per minute Several electrical and copper equations and a table of weight, and drop per ampere per 1,000 ft. of copper wire. are included.

PORTABLE TESTING SET.—Queen & Co., Inc., Inde Chestnut St., Philadelphia, Pa. Pamph.; 6% rio 108. This pamphlet describes the Queen-Acme Portable Test ing Set, an instrument for making quick and reliable tests of electric resistance. The set includes a D'Arsonval galvanometer, a battery of 6 chioride of silver cells, two contact keys and the various platinoid resistance coils two con-essary to form a Wheatstone bridge with a range of 0.001 to 11,110,000 ohms.

ENGINEERS' AND SURVEYORS' INSTRUMENTS.-Queen & Co., 1010 Chestnut St., Philadelphia, Pa. Paper, 8½ × 5½ ins.; pp. 186. First edition; illustrated. A new descriptive catalogue of transits of various types, levels, plane table adjustments, stadia rods, etc. This is

not a priced catalogue, but rather a treatise upon these instruments, their care, handling, adjustment, faults of errors, details of manufacture, etc. Included are a numfaults or her of useful tables to he employed in connection with instrumental work.

TRINIDAD LAKE ASPHALT PAVING.—Warren-Sc Asphalt Paving Co., 81 Fulton St., New York, Pr 8 × 5% Ins.; pp. 53; Illustrated.

This pamphlet sets forth the advantages of Trinidad This pamphlet sets forth the advantages of Trinidad Lake asphalt sheet-pavement and illustrates its use by ex-cellent photogravures of asphalt paved streets in many American cities. Tables are also given, showing the sq. yds, laid in each year in a number of these cities, with city maps indicating in red the location of these streets. These last will be found convenient by wheelmen.

Intege last with the fourth conventent by weretimen.
INSTRUCTIONS IN PHOTOGRAPHY.-(1) A Reference Book of Practical Photography; (2) First Step in Pai-tography; (3) Second Step in Photography. By F. Dundas Todd. Chicago: The Photo-Beacon Co. Three pamphlets; paper; 4½ × 6 ins; (1) pp. 104; 50 cts; (2) pp. 52; 25 cts; (3) pp. 98; 50 cts.
These little hooks by Mr. Todd, Editor of the "Photo-Beacon," give practical instructions as to focusing, light, opsition apparatus and other matters connected with the

position, apparatus, and other matters connected with the taking of photographs, and also full instructions as to methods of developing, printing and enlarging.

TURBINE WHEELS, "CASCADE" WATER-WHEELS, ENGINES AND BOILERS.—The James Leffel & Co., Springfield, O. Three pamphlets; 7½ × 5 ins.; pp. 124, 42, 40.

42, 40. The Leffel turbine wheels are well known. The "Cas-cade" is an impulse wheel, something like the Pelton in external appearance, the form of the huckets being dif-ferent. The engines and hollers described are mostly of the agricultural portable and semi-portable type, but center crank stationary engines, both throttling and automatic cut-off, are also described. the

ILLINOIS STEEL CO., Chicago, U. S. A.-Pamph.; 5% × 7½ ins.; pp. 42.

7½ ins.; pp. 42. This pamphlet contains descriptions of the five iron and steel plants owned by the Illinois Steel Co. at Chicago and Joliet, Ill., and Milwaukee, Wis. The company is now a competitor in the markets of the world, although it is located 1,000 miles from the seaboard and assembles its materials from distances of 300 to 700 miles. The pamphlet is illustrated by numerous excellent half-tone

pamphlet is illustrated by numerous excellent half-tone cuts of scenes about the works.
GOLD DREDGING MACHINERY.—Catalogue No. 15. Gold Dredging on Feather River, California, Catalogue No. 16; Risdon Iron Works, San Francisco, Cal. Pamphs; 6% × 10 ins.; pp. 32 and 16.
The Risdon Iron Works has purchased the patents and rights of building Mr. R. H. Posilethwaite's dredges, which have been used with great success in New Zealand and are now heing introduced in California. Dredges on the Feether River Cal are sold to be handling gravel at the Feather River, Cal., are said to be handling gravel at a cost of 3 cts. per cu. yd. The pamphlets have a num-her of half-tone cuts showing the dredges in operation.

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ELECTRIC MOTORS IN THE ART OF PRINTING.-Sprague Electric Co., 20 Broad St., New York city. Pamph.; 6% × 8% ins. As implied in the title, this pamphlet presents the ad-entages of electric motors for driving printing ma-chinery, under the heads of Power and Increased Pro-duct. The experiences of the American Book Co. and the American Lithographic Co., both of New York city, ard green as evidence. The pamphlet is a most beautiful specimen of the printer's art, especially in its artistic cover. over.

cover. CAMERAS AND PHOTOGRAPHIC SUPPLIES.—The Western Camera Mfg. Co., 153 Wabash Ave., Chicago, III. Paper; 7 × 5¼ ins.; pp. 48. The principal specialty now being introduced by this company is its "Magazine Cyclone" camera, which holds iz plates and does not require any extra plateholders. The magazine holds the plates, and as each plate is used it is lowered to the proper position by means of a button outside the case. When all the plates have been used the magazine containing 12 new plates. =until AD LAKE ASPHALT PAVING.—The Barber As-

TRINIDAD LAKE ASPHALT PAVING.-The Barber As-phalt Paving Co., Main Office, Bowling Green Build-ing, New York. Paper; 7½ x 5 ins.; pp. 126; illus-trated.

This is a new edition of the company's catalogue, haud-This is a new edition of the company's catalogue, haud-somely illustrated by photographic views of the Trinidad Lake, the works of the company and many streets in prin-cipal American cities paved by the company. Lists of streets and areas laid in each, and maps of the cities paved, are siso given, along with testimonials from public health officers, city officials, etc.

bealth officers, city officials, etc. ENGINES AND BOILERS.—The Phoenix Iron Works Co., Meadville, Pa. Pamph.; IO × 7½ ins.; pp. 26. This is a catalogue of the "Dick and Church" engine, which is of the automatic high-speed type, and is equipped with the Rites governor. Tandem engines are built with the high pressure cylinder in front of, or nearer the shaft than the low, which is the reverse of the usual position. The pamphlet also has illustrations of four different types at builts: made by the company, viz. horizontat tubular. deblers made by the company, viz., horizontai tubular, Manning vertical, internai corrugated furnace drop flue, and Moyes "Combine" water-tuhe.

and Moyes "Combine" water-tuhe. TEST OF A NASH GAS ENGINE.—National Meter Co., New York. Pamph.; 6×9 ins.; pp. 14. This pamphlet contains the report of a test of a 20-HP. Nash gss engine coupled by a friction clutch to a Riker dynamo. The test was made at the Stevens Institute of Technology. Using gas of a heating value of 701 B. T. U. per cu. ft., the engine developed 22.71 brake HP., with a gas consumption of 17.62 cu. ft. per hour per B. HP. The amount of light furnished by the electric iamps fed by the dynamo was L69 times as much as would have been given by the gas burned in ordinary gas burners. by the gas burned in ordinary gas burners.

by the gas burned in ordinary gas burners. CONVERTED BELTED GENERATORS.-Walker Co., Cleveland, O. Pamph.; 77% × 10% ins. This circular is issued to call atteution to a line of gen-erators known as the "Converted type," which has been developed by the Walker Co. to suit conditions where a beited generator is preferred. The machine closely re-sembles in design and operation the weil-known line of direct connected generators manufactured by this com-pany. Some details of construction are illustrated and pany. Some details of construction are illustrated and explained, and outline dimension drawings of two-bearing and three-bearing belted generators are given.

and three-bearing belted generators are given. STEAM ENGINES.—The "Twiss" Automatic Cut-Off En-gine. Neison W. Twiss, New Haven, Conn. Pamph.;  $y \times 5^{5_2}$  ins.; pp. 8. The "Twiss" engine has some novel features. It is of the general form of the Corliss engine, with two rotary valves instead of four, each valve being both steam and enhaust valve. The valve is of a hollow cylindrical form, and inside of it there is journaled an auxiliary or cut-off valve. This cut-off valve is iberated by a tripping cam. The engine, therefore, appears to combine the principles of the Rider cut-off valve with a modified Cor-liss trip motion. as trip motion.

The trp motion. ELECTRIC, HYDRAULIC AND STEAM ELEVATORS.— Standard Elevator & Mfg. Co., Chicago., 11, Pamph.;  $6\zeta_{\lambda} \approx 0\%$  ins.; pp. 12. This pamphiet is issued to call attention to some of the types of clevators manufactured by the Standard Co. It includes a full-page half-tone of the interior of the com-pany's shop, to give an idea of its facilities, and several Blustrations of electric elevator motors of two and four-piel types. A small portion is given up to describing the pole types. A small portion is given up to describing the "special festures" of the electrical construction, such as operating devices, variation of speed, safety devices, pinions and cages and cars.

HOLLOW TILE SEWERS.—The National Web Tile Sewer Co., Kirk Building, Syracuse, N. Y. Paper; 9 × 7 ins.; pp. 32; illustrated.

pp. 32; inustrated. This catalogue describes glazed holiow tile terra cotta swers from 2 to 7 ft. in diameter, which the company named has been organized to introduce throughout the United States. The company claims as advantages for this kind of sewer over brick that the material is better burned, and of sever over brick that the material is better burnes, and therefore more durable and stronger; that it absorbs less water and gases; and, having a smoother surface and fewer joints, would have a greater carrying capacity. Shapes for manholes and keys for subway conduits are also described in the catalogue.

KODAKS.-Eastman Kodak Co., Rochesier, N. Y. Pamph.;  $5^{4}_{5} \times 7^{3}_{5}$  ins; pp. 52; illustrated. This is a pleasing little catalogue of that type of camera known everywhere where cameras are used by the name et "kodak." Descriptions are given of cameras ranging from the "Pocket kodak," which is  $2\% \times 2\% \times 3\%$  ins.,

through a variety of styles and sizes to what may be termed the very latest thing in cameras—the "Folding Cartridge Kodak" with blcycle case—a camera taking a  $4 \times 5$ -in. picture upon a film, enough of which is rolled on for 12 exposures. These cartridges, so called, can be placed in the camera or removed in broad daylight. Such accessories as trinods, lanterus developing sate care, are too listed as tripods, lanterns, developing sets, etc., are also listed or described.

or described.
CONTRACTORS' AND RAILWAY SUPPLIES.-H. Channon Co., 24 Market St., Chicago. Cloth; 7 × 10½ ins.; pp. 242.
This is a voluminous descriptive catalogue and prico list of a large range of supplies, including wire rope, blocks and sheaves, differential hand-hoists, pumps, derricks, winches, tools of all kinds, emery wheels, wheelbarrows, etc., etc. A comprehensive catalogue of this kind, giving prices, is a very haudy thiug for any contractor or engineer to have at hand.
GRADING AND ROAD MACHINERY.-Western Wheeled

GRADING AND ROAD MACHINERY.—Western Wheeled Scraper Co., Aurora, Iii. Paper; 9% × 6% ins.; pp. 56. Much ingenuity has been expended in the design of ma-chinery for excavating and handling earthwork, and this handsome catalogue illustrates and describes the various "Western" machines. It includes different styles of drag and wheel scrapers, grading plows and road machines. Some of these machines have elevating conveyors which load the excavated material directly into dump carts. Rock crushers, street sweepers, dump wagons, etc., are also included.

also included. HORIZONTAL STEAM ENGINES.--W. J. B. Albree Mfg. Co., Indianapolis, Ind. Paper;  $10 \times 6\%$  ius.; pp. 45. The "Economic" automatic engine is a single cylinder, horizoutal, center-crank cugine, with the crank disks running in an oil chamber. The slide valve is of trian-gular section, taking steam on the inside. The "Econ-omic" boiler has a single furnace flue, with a combus-tion chamber and return tubes. The catalogue shows also simple and compound side-crank engines, and spe-cialities in steam separators. condeusers. condeus and the state of ciaities in steam separators, condeusers, coolers and tank iubricators for cylinders.

BRIDGE RAILINGS.—The Beimont Iron Works, Phila-delphia, Pa. Pamph;  $10 \times 9$  ins.; pp. 28; illustrated. This pamphlet contains illustrations and prices of a large number of standard and special designs for bridge railings, newel posts, lamp posts, name plates, bridge portal castings, etc., manufactured by the company named above. Special attention is directed to the com-pany's rolled and drawn steel haud rail, which is claimed to be particularly rigid both laterally and varicely. to be particularly rigid both laterally and vertically, and also to the rolled and drawn steel base molding designed to correspond with the hand rail.

WOODILINE.-The American Wood Preserving Co., Philadelphia, Pa. Pamph.; 6×4½ ins.; pp. 39; iilus-trated.

This pamphlet contains a very good description of this new preservative for timber and of the methods of ap-plying it which have been employed in a number of implying it which have been employed in a number of im-portant works. Among the plants described are the one plant of the Pennsylvania R. R. Co. at Pavonia, N. J. (Eng. News, Dec. 31, 1896), and a portable plant de-signed for railway use which is now employed by a prominent Western railway.

WIRE ROPEWAYS.—The Hailidie Wire Ropeway, manu-factured by the California Wire Works, San Fran-cisco, Cal. Pamph; 6 × 9% ins; pp. 44. This pamphlet contains a most interesting illustrated

This pamphiet contains a most interesting illustrated description of the simplest method of conveying materials long distances by wire ropes. It is the single endless rope system, the same ropo traveling in a continuous circuit and carrying buckets suspended from it. A recent in-staliation of this system at Nelson, British Columbia, is  $4\frac{1}{2}$  miles long, with a fall of 4,000 ft. During 1807 it corrided 0.540 tons of are. It's cancelty is to be increment carried 49,540 tons of ore. Its capacity is to be increased to 100,000 tons per annum by increasing the size of the carriers.

STEAM PUMPS.--National Fonndry & Machine Co., Louisville, Ky. Cloth; 5½×8 ins.; pp. 96. This is a catalogue of the Reilly pumps, which are adapted to various classes of service. The ordinary pat-terns are horizontal (bilge pumps, vacuum pumps and pressure pumps, etc.), but vertical patterns are used for deep wells. The specialties also include horizontal air compressors, vertical blower engines, independent con-densing apparatus for non-condensing engines, and hori-zontal compound nunger pumps. Several pages are do zontal compound plunger pumps. Several pages are de-voted to testimoniais, and useful information, and at the end are some 20 blank pages of cross-section paper for nemoranda.

ROAD MACHINERY.-F. C. Austin Mfg. Co., Chicago, III. Paper;  $10\% \times 7\%$  ins.; pp.76. This is a handsome illustrated and descriptive cata-logue of machinery for road making and maintenance. There are faw rock crushers and complete crushing and screening plants, reversible rollers, grading machines (some of which are shown as used for removing snow on (some of which are shown as used for removing show on streets in Chicago), dump wagons, street sweepers and sprinklers, drag and wheel scrapers, etc. One New Era grader is shown hauled by a traction engine. Besides all this the catalogue includes tubular truss bridges, well drilling machinery, a ditching and sewer building machine and a current motor.

LAKE TRIPS .- Northern Steamship Co. Pamph.; 6% ×

World No Trip Like This," and is a reprint of an article appearing in the Chicago "Tribune," in which Jeannette L.

Gilder teils of the delights of the Great Lakes; nor must "A Briton's Frank Confession," which follows, be over-looked. The object of the pamphiet is twofold; the first, intimated by saying that it comes from the Northern Steamship Co., and in the second, shown hest by quoting a statement printed in red ink ou the cover: Steamer "Northwest," of this line, specially chartered by the North-western Electrical Association for 1898 Summer Couven-tion, salis from Chicago June 10. For reservations apply hefore May 20 to Thos, R. Mercein, Secretary, 110 Masou St., Milwaukee, Wis., or to J. M. Hill, 1,240 Monadnock Block, Chicago.

AMERICAN PORTLAND CEMENT.-Commercial Wood & Cement Co., New York. Pamph.; 51/2 x 8 ins.; pp. 91; illustrated.

This pamphlet describes briefly the method of manufac turing Portland cement at the works of the Glens Falls Portland Cement Co., and contains a uumber of weil considered remarks about the testing and general qualities of Portiaud cement and some rules for using it so as to of Portlaud cement and some rules for using it so as to get the best results abstracted from the little book, "Portland Cement for Engineering Works," by W. W. Msclay, M. Am. Soc. C. E. By the same mail we have received from the Commercial Wood & Cement Co. pam-phlets describing the "Commercial" Rosendale cement, the "Victor" Portland cement and the 'Commercial" Port-land computer for which they are also the adulting structure. land cement, for which they are also the selling agents.

STEAM BOILERS.—The Moyes "Combine" Water Tube Boller. Phoenix Iron Works Co., Meadville, Pa. Pamph, 7½ × 10 ins. pp. 8. The boiler described in this pamphlet is of the inclined

The boiler described in this pamphlet is of the inclined sectional type, with a different arrangement of the steam and water drums than is customary in most bollers of the type. The setting is roofed over so as to cover the whole of the drums. We notice that the makers insert one of the old-fashioned sweeping claims to the effect that the boiler "will deliver more steam and of higher quality per square foot of heating surface for each pound of coal burned than any boiler in the market." Wo very serious-ly question whether a concern does not prejudice cus-tomers against its goods rather than in favor of them by making such sweeping claims. We see nothing in the making such sweeping claims. We see nothing in the design of the boiler to lead oue to expect different re-suits than are obtained with other standard makes of horizontal water-tube bollers.

horizoutal water-tube bollers. NITRO HIGH EXPLOSIVES.-Nitro Powder Co., Kings-ton, N. Y. Pamph: 7 x ins; pp. 15. This company manufactures Nitro-Plastine, Nitro-Pow-der and Nitro-Granular; and as compared with other ni-tro-giycerine powders it claims greater safety in handling. iess liability to freeze and superior keeping qualities. Ni-tro-Plastine is of a gelatinous consistency and of high specific gravity; more powerful in the higher grades than specific gravity; more powerful in the higher grades than the strongest dynamite; safe against violent shock, and es-pecially adapted to difficult blasting. Nitro-Powder is an improved dynamite, made by substituting for part of the nitro-glycerine auother substance which is in itself inox-plosive, but in combination with nitrate of soda yields a large volume of gas and adds to the strength of the ex-plosive. Nitro-Granular Powder is in grains and free ruu-plant, a consolity applicable in blasting stump. Troopen ning; it is especially applicable in blasting stumps, frozen earth, tough clays and hard-pan. Full directions for use are given.

# CONSTRUCTION NEWS.

# CONDENSED LIST OF CONTRACTS PENDING

	WITH DATE OF	OPENING BIDS.	
Bids	to be		See Eng.
oper	work.	Piace.	News.
May	5. Paving, Buffalo, N. J.	7	Apr. 28
May	5. Easement, Sacramen	to, Cai	Apr. 28
May	5.Branch sewers, Phila	delphia, Pa	Apr. 28
May	5. Macadamizing, Cinci	nnati, O	Apr. 28
May	5.Iron bridge, Montice	lio, Ind	Apr. 28
May	5. Chapei, Jackson, Mic	h	Apr. 28
May	5. Electrie light plant, Advertised, Engineer	ring News, Apr. 21.	
May	5. Steel bridge, Jersey (	City, N. J	Apr. 21
May	5. Hospital building, M	orris Piains, N. J.	Apr. 21
May	5. School building, Mill	viile, Utah	Apr. 21
May	5. Grading, paving, etc. 5. Steam heating, etc., 1	, Cameron, W. Va.	Apr. 21
May	5. Steam heating, etc., 1	Buffalo, N. Y	Apr. 14
May	5. Electric wiring, etc.,	Buffalo, N. Y	Apr. 14
May	5. Sewer bonds, East Ci	eveland. U.	· · · · ADF. 14
May	5.Brick paving (47,000	sq. yds.), Tampa, I	Fla. Apr. 7
	Advertised, Eng. Ne	w, Apr. 7 to 28.	
May	5. Road bonds, Salem, 1	Ind	Msy 5
May	5. Sheet asphalt (14,200	sq.yds.), Newark,	N.J. May 5
May	5. Post office supplies,	Washington, D. C.	May 5
May	5. Bridge, Pittsburg, Pa	<b>l.</b>	May 5
May	6. Surf boats (21), Was	hington, D. C	May 5
May	6.Steel span bridge, Cl		
May	6.Dredging, Connectica Advertised, Eng. Ne	w, Apr. 7 to 28.	
May	6. Macadamizing, Scott	sburg, Ind	Apr. 21
May	6. Water-works, Calhou	in, Ga	Apr. 21
May	6. Sewers, Norristown,	Pa	Apr. 21
May	6. Plaster models, etc.,	Omana, Neb.	Apr. 21
May	6. Macadam (26 miles),	Scottsburg, Ind	Apr. 28
May	6. Pipe sewers, Clevela	nd, O	Apr. 25
May	6. Reservoir, Boston, M Advertised, Enginee	ring News, Apr. 28.	
May	6.Bridge, Aiken, S. (		Apr. 28
May	7. Improving road, Star	miord, Conn.	Apr. 28
May	7. Bridges (8), Sherbro 7. Macadamizing (161/2)	oke, N. Dak	Apr. 28
May	7. Macadamizing (10%)	miles), Kenton, U.	Apr. 25
May	7. Macadamizing, Mont	Dento, Ind	Apr. 28
Мау	7. Electric light plant,	Boston, Mass	Apr. 23
May	7. Lead pipe, etc., Syra	cuse, N. I	Apr. 20
May	7. Asphait block pavin	g. Alliance, U	Ann 14
May	7. Building substructur	ling W Vo	May 5
May	7. Brick paving, Whee	mg, w. va	
May	7. Superstructure (100 8. Macadamizing, etc.,	Renkolog, Decatur,	May 5
May	S. Macadamizing, etc.,	Berkeley, Cal	Apr 14
May	9. Water bonds (\$300,	(1 m) Leferand, U.	Ind Apr. 7
May	9. Sidewalk and curbin	limillo N V	Apr. 21
May	Advertised, Eng. N	ews. Apr. 21 and 2	28.
May May	9. County road, Hunt 9. School building, School	ranton, Pa	Apr. 28

 ENGINEERING NEWS.

 May 25. County bridges (9), Pembina, N. Dak.
 May 5.

 Arrented, Eng. News, May 24. to Apr. 28.

 May 26. County bridges (9), Pembina, N. Dak.
 May 5.

 Arrented, Eng. News, May 24. to Apr. 28.

 May 26. County bridges (9), Pentahung, Pa.
 May 6.

 May 26. County bridges (9), Pentahung, Pa.
 May 6.

 May 26. Dredging, Sahina Pasa, Tell.
 May 6.

 May 27. Electric plant, Caldwell, O.
 May 6.

 May 27. Electric plant, Caldwell, O.
 May 6.

 May 27. Electric plant, Caldwell, O.
 May 6.

 May 26. Stored Amg. News, Apr. 28. to May 19.
 May 6.

 May 26. Stored Amg. May 7.
 May 7.

 May 26. Stored Amg. May 7.
 May 7.

 May 27. Electric Induiting, etc., Des Moines, Ia.
 May 7.

 May 26. Stored Amg. May 7.
 May 7.

 May 27. Stored Amg. May 7.
 May 7.

 May 28. Store paving, Toledo, O.
 May 7.</

# RAILWAYS.

ABERDEEN & ASHBORO.-J. M. Bandy, Ch. Engr., Greensboro, N. C., informs us that the surveys have heen completed for the extension of this railway from Troy to Mount Gliead, via Wadeville, N. C., a distance of 13.8 miles, and that the right of way has been ob-tained and the capital secured. The construction work will be done by Carpenter & Gibbs, who have already begun grading near Wadeville. Pres., A. F. Page, Aber-deen, N. C.

begun grading near Wadeville. Pres., A. F. Page, Aber-deen, N. C. ARKANSAS & OKLAHOMA.-H. M. Frazler, Rogers, Ark, informs us that surveys for this line have been made from Bentonville, Ark., to inflain Territory. The completed line will run from East and West Seba to Gravatt, via Dixon, Ark., 200 miles. The company is doing the work, and at present has about 70 teams at work; four miles of grading have been completed. Pres., F. M. Bayliss; Ch. Engr., Frank Koresky, hoth of Ben-tonville, Ark. BELLINGHAM BAY & EASTON.-J. J. Donovan, Gen. Supt., New Whatcom, Wash., informs us that this com-pany contemplates the building of a 10-mile extension to its line into the timber district in Whatcom county, but that the time for commencing the work has not yet been decided upon. CAROLINA MIDLAND.-E. E. Ruiledge, Ch. Engr., Bateshurg, S. C., writes us that 16 miles of railway are being huilt from Seivern to Bateshurg. The grading, pridges and trestles have been completed and track is now being laid. CHICAGO & WEST MICHIGAN.-J. J. McVean, Ch. Engr., Grand Rapids, Mich., informs us that no new im-provements or extensions to its line set at present con-templated outside of the usual yearly work. A new inter-locking plant may possibly be established in Detroit for the protection of 12th St. yard of the Union Terminal Association.

the protection of 12th St. yard of the Union Terminal Association.
 CHICAGO JUNCTION.-C. W. Hotchkiss, Ch. Engr., 625 Monadnock Biock, Chicago, III., informs us that no further improvements are to be made to this line at present other than a new interlocking plant to be installed at North Harvey, III.
 CHICAGO JUNCTION.-C. W. Hotchkiss, Ch. Engr., 625 Monadnock Biock, Chicago, III., informs us that no further improvements are to be made to this line at present other than a new interlocking plant to be installed at North Harvey, III.
 CHICAW, OKLAHOMA & GULF.-F. A. Moliter, Ch. Engr., South McAlester, Ind. Ter., Informs us that the improvements and extensions being made or projected for this system are as follows: Extensions from Wister Junction to Howe, 7 miles, and from Fort Reno, Okla., to Custer county, 45 miles, which are under construction by the Bracey-Welles Construction Co., of Chicago, and J. W. Maney & Co., of El Reno, Okla., respectively; also an extension is being made from Shart No, 3 of the mine, 445 milles from the main line, with 4 milles of yards to other new mines. Two girder bridges are being substituted for trestles, and four pille trestles are being filled in ad four new pile trestles are being built. Two new stations will probably be erected.
 CINCINNATI NORTHERN.-W. D. Williams, Ch. Engr., Van Wert, O., informs us that this company is now filling up 1,255 feet of old pile trestles. A new interlocking plant with the New York, Chicago & St. Louis R. R. at Latty, O., is contemplated, but it is not yet deviated within four weeks on an extension of the Huff's New distributing yards are to be established at Brooklyn, o., at an estimated cost of \$25,000; all the work to be done by the company. The 3-story brick and stone passenger station at Cleveland, will probably be occupied, June 30, and a train shed, 540 × 80 t., will be added; variety steel Wroks, of Cleveland, have contracted to iterest a new steel freight station at West River

DES ARC & NORTHERN.-W. H. Hipolite, Ch. Engr., DES ARC & NORTHERN.-W. H. Hipolite, Ch. Engr., Higginson, Ark., writes us that 15½ miles of this new line are nearly completed. The proposed road, which will be standard gage, will run from Des Arc to Higginson,

Ark., a distance of 20 miles, and will be laid with a 54. ib. steel rail. Geo. C. Griffith, Pres.; Geo. B. Stone, Gen. Supt.; F. S. Belcher, Vice-Pres and Treas., sil of Hig-ginson.

1b. steel rall. Geo. C. Griffith, Pres.; Geo. E. Sind. S. S. Bolcher, Vice-Pres and Treas., sil of Hig-sinson.
DULUTH, MISSISSIPPI RIVER & NORTHERN.-I. N. Gray, Ch. Engr., Swan River, Minn., informa us that the work on the new 13½ mile extension of the mina branch of this line, which was let on February 1 to Williamson & Campbell, is being pushed as rability as the work on the new 13½ mile extension of the mina treat. Single and easy curvature. At Hibbing there will be a trestle J.200 ft. long and 35 ft. Single the work we have been laid, and it is expected to high the extension for many of the mina will permit; it is to be asy curvature. At Hibbing there will be a trestle J.200 ft. long and 35 ft. Bight where the road crosses the Duluth, Missabe & Northern Ry.
EVANSVILLE, WESTLAKE & JENNINGS-E. E. West, Pres., Westlake, Fla., informs us that four miles of new track have been laid, and it is expected to hay for a noor miles additional towards Beliville, Fla. The work is done by the company direct.
GULF, BEAUMONT & GREAT NORTHERN.-John H. Kirby, Fres., Informs us that this company expects to fome or the suit. Beaumont & Kanasa City R. C. O. GULF, COLORADO & SANTA FE.-C. F. W. Feit, Ch. Gull, COLORADO & SANTA FE.-C. F. W. Feit, Ch. Engr., Galveston, Fex., informs us that the improvements to this system now under way include the roward is to the System now under way include the ration of grade between Temple and Cleburne, Tex., to cost \$60,000, and a 24-stall stone engine house at Temple, to cost \$22,000. New machine shout shows are been also the south a south shout a store bound at the lay on the set of a store of a new passenger station at thouse the fact. House the rection of a new passenger station at thouse the head to be built at Cleburne, at a cost of about \$150,000, and blat States of bard blat States of the Scate State. States of the Scate State state and shout shows and the set the to have been have been have been have be about the show the set the state blates the state states at

HOLLINS, HEFLIN & SYLACAUGA.-John L. Kaul, Gen. Mgr., Hollins, Ala., writes us that this company proposes to construct five miles of new line for logging purposes.

purposes. HOUSTON, EAST & WEST TEXAS.-E. B. Cushing, Ch. Engr. and Gen. Supt., Houston, Tex., informs us that several miles of grade reduction will probably he undertaken this spring, and about 25 trestics replaced by brick and pipe culverts and fill. Blds for this work will be received about May 31.

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# STREET AND ELECTRIC RAILWAYS.

CONCORD, N. H.-The Concord St. Ry. Co. has been granted a permit to change the location of its tracks in this city. Pres., J. A. Albin. MONTPELIER, VT.-F. C. Kennedy, J. J. Flynn and A. O. Humphrey are said to be interested in the proposed Mad River Electric Railway from this piace to Warren. Ar-rangements preparatory to construction are be ng consid-ered.

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Third Ave, R. R. Co. and the Union Ry. Co., and the franchise under which work will be done was granted about March I.
SYRACUSE, N. Y.-Wing T. Parker, Pres. Syracuse, Skaoateles & Moravla R. R. Co., Moravia, N. Y., Informs us that the preliminary surveys have heen made and about one-half the right of way obtained for the proposed electric line from Moravia to Syracuse, via Niles, Owasco, Skanasteles and Marcellus, a distance of 43 miles. Contracts will be let after completion of the permanent surport will be let after completion of the permanent surveys. J. W. Ackerman, Ch. Engr., Moravia. Notice of the morporation of this company was published in our issue of last week.
TROY, N. Y.-The Commissioners of Miami county have granted the right of way and a 25-year franchise to the Troy, Tippecance & Dayton Interurban Electric Ry. Co. The line must be completed by Jan. 1.
UTICA, N. Y.-The Utica Suburban Ry. Co. secured a franchise, April 27, for the construction of an extension from the West Shore R. R. Co.'s tracks to Glen Park, a distance of about 1½ miles. Construction is to begin at once. Pres. Jobn W. Boyle.
BETHLEHEM, PA.-HI is reported that the differences between the Easton, Palimer & Bethlehem St. Ry. Co. and this horough have been adjusted, and that a belt line will be constructed. Engr., L. A. Francisco, 441 North Hampon St., Easton, Pa. The Worcester Construction for, of Worcester, Mass., is said to have received the contract for general construction.
CHESTER, PA.-The Chester & Delaware St. Ry. Co.

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ton St., Easton, Pa. The Worcester Construction Co., of Worcester, Mass., is said to have received the contract for general construction.
 CHESTER, PA.-The Chester & Delaware St. Ry. Co. was incorporated, April 29, with a capital stock of \$100,000, with \$1,000 paid in, to construct and operate a street railway from Chester to the state line. The incorporators are Percy H. Cisrk and Wm. C. Walt, of Germantown, Philadelphia, Pa.; Clarence Sill, Darby, Pa.
 PITTSBURG, PA.-Reports state that ahout \$250,000 will be spent this year in the further improvement of the Manchester and Pleasant Valley lines of the United Traction Co.'s system. Pres., James D. Callery.
 FREDERICK, MD.-The Frederick, Thurmont & Northern Electric Ry. Co. has heen organized at this place to build an electric line from Frederick to Gettysburg, via Emmitsburg and Thurmont. Pres., L. V. Baughman; Sey., Chas. B., Waters; Engr., R. A. Rager. W. L. O'Hara, Pres. Mount St. Mary'a College, of Emmitsburg, to he ten miles in length. Henry Oliver has the contract for huilding the power-house.
 SAGINAW, MICH.-The receivers of the Union St. Ry. Co. have been authorized to borrow \$10,000 to the used towards the repairing of the line. Seey., L. T. Durand.
 CHIARLESTON, S. C.-Contlact sare stated to have been by. to been authorized to borrow \$10,000 to the used towards the repairing of the line. Seevery of the Calumet Electric St. Ry. Co. Alter State Struct Court, asking permission to expend \$60,000 in the improvement of the plant and the purchase of additional property for a terminal loop and transfer system at 63d St. and Stony Island Ave. The petition was granted by the court.
 WAUKEGAN, ILL.-It is announced that the Bluff City Electric Ry. has heen purchased by W. T. Bail, of Muncie, Ind., and that the road will be completed from this city to Highland Park.

Ind., and that the road will be completed from this city to Highland Park.
ST. LOUIS, MO.—The St. Louis County Court, April 26, granted a franchise to the St. Louis, Clayton & Creve Coeur Lake Ry. Co. for the construction and operation of electric railways which will connect with the Lindell Ry. Co.'s Dalmar Ave. Hine, the Midland line and the Forest Park and Clayton line which is to he extended to Creve Coeur Lakes. It is expected to have all work completed by August I. Secy. James Adkins.
DETROIT, MICH.—The Chase Construction Co., of Detroit, according to reports, has been awarded the con-tract for the entire overhead and electrical construction on the proposed Chicago, Toledo & Detroit R. R. from Detroit to Toledo, O., a distance of 60 miles. Pres., J. C. Sbaffer, of Chicago, HI. It is said that the construction company, of which Geo, E. Fisher is president, will begin work in ahout 60 days.
BUTTE, MONT.—The Silver Bow Ry. Co., which is con-structing the electric line to Walkerville, contemplates the building of about four miles of street railway in this city, which will connect with the principal mines; estimated cost, \$20,00.

## ELECTRIC LIGHT AND POWER.

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will be  $42 \times 80$  ff. It is not stated whether the contract for the machinery has heen jet. Mgr. and Purchasing Agent, E. H. Rollius, NARRAGANSETT PIER, R. 1.—The Narragansett Pier Electric Lighting & Power Co. proposes to put its wire under ground in 16 miles of streets, at a cost of about \$500,000. G. P. Maguer, Treas. and Purchasing Agent. TORRINGTON, CONN.—The Excelsior Needle Co. pro-poses to purchase a 2,000-light dynamo, according to re-ports.

TORRINGTON, CONN.--The Excessior needed to, pro-poses to purchase a 2,000-light dynamo, according to re-ports. CHARLOTTE, N. Y.--The Stanwix Engineering Co., Rome, N. Y., has been employed to prepare plans, etc., for a plant to cost \$10,000 and water-works to cost \$25,-000. The question of issuing bonds was voted upon May 4. Bids for the work will soon he asked. LITTLE VALLEY, N. Y.-S. L. Sweetland, Secy., writes us that the village does not expect to build the proposed plant and water-works this year. LOCKPORT, N. Y.-We are informed that the Lock-port Gas & Electric Light Co. will increase the capacity of its plant. Supt. Edwin Witherby, 100 Main St. NEW YORK, N. Y.-The New York Fuance & Construc-tion Co., 141 Broadway, New York Fuance & Construc-tion Co., 141 Broadway, New York fuance & Construc-tion three other government jobs for which it is in the market for machinery, namely: The steam and electric plant at Fort Washington, Md.; the engine instaliation and lighting plait for the Plum Island (N. Y.) fortifications; also the complete generating and plping instaliation in the post office at Pittsburg. ONEIDA, N. Y.-Judson W. Warner bas heen granted nermission to erect lines in this city. It is stated that he

post office at Pittsburg. ONEIDA, N. Y.-Judson W. Warner bas heen granted permission to erect lines in this city. It is stated that he has let the contract for furnishing the machinery, etc. Two reservoirs will probabily he huilt. SILVERCHEEK, N. Y.-An election will he held May 10 to vote on the question of awarding a contract to the People's Electric Light & Power Co, for furnishing 37 arc lights.

reopie's Electric Light & Fower Co. for furnishing 34 arc lights. WillTESBORO, N. Y.-Whm. G. Stone, Engr., 8 Herald Bldg., Utca, N. Y., writes us as follows in regard to the proposed plant for this piace: "The village is uow lighted under contract with the Utica Electric Light Co., Utica, N. Y. Two projects are now under consideration. One the hullding of a plaut to be owned and operated by the village, the other the installation of a plaut owned hy a private company, who proposes to furnish light and power at a stated contract price. Either plan will involve the purchase of complete equipment for a steam operated plant."

the purchase of complete equipment for a steam operated plant." WHITE PLAINS, N. Y.--Adoiph Reimer, Treas. Dover Electric Light & Power Co., writes us that the proposed plant will have a capacity of 25 arc and 2,500 incan-descent lights; estimated cost, \$40,000. There will be re-quired compound condensing Corliss engines, oue arc ma-chine of 50 light capacity, one alteruator. No contracts have yet been let. WILKES-BARRE, PA.-The Wilkes-Barre Electric Light Co., it is reported, will huild a sun-station in North Wilkes-Barre to he 25 × 217 ft. Work will be completed in about six weeks. Supt., Thos. W. O'Brien. ELLICOTT CITY, MD.-The question of lighting this place with arc lights is being considered. Mayor, Jacob J. Werner. Incandescent lights are at present furnished by the Ellicott City Electric Light Co. L. N. Getz, Mgr. and Purchasing Agent. WILLIAMSBURG, MD.-M. E. Cullen, Town Treas.

and Purchasing Agent. WILLIAMSBURG, MD.-M. E. Cullen, Town Treas., writes us that nothing definite has yet been taken in re-gard to the proposed plant and water-works. It is proh-ahio that wilth the appointment of a hoard of super-visors the construction will he begun. The board has not yet been named hy the hurgess. GREENSBORO, N. C.-W. H. Houghton has been anted permission to erect a plant. Population, 10,000.

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to the proposed plant. LAMAR, COLO.—Bids are asked until July 15 for fur-nishing the machinery, etc., for the proposed plane. Bent & Strain inform us that it will have about 10 2,000-c. p. arc and about 400 fc-c. p. incandescent lights; estimated cost, \$4,000. A 25-year franchise was recently granted to the Lamar Light & Power Co. The plant will be in operation Nov. 1. VENTURA, CAL.—It is stated that the trustees have passed a resolution to postpone the question of building a plant.

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a plant. GRANGEVILLE, IDAHO,--It is reported that this place is considering the question of huliding a plant. ACTON, ONT.--The council is reported as considering a proposition from the Stayner Electric Light Co. for lighting this place.

a proposition from the Stayner Electric Light Co. for lighting this place. TORONTO, ONT.-The hoard of control has voted to ask for hids for constructing plants of 2,000 and 6,000 HP. each. C. H. Rust, Cy. Engr. HAMILTON, ONT.-It is stated that the Hamilton Electric Light & Power Co. is building a plant of 5,000 HP. at St. Catharine's. The power will be transmitted to this city, 39 miles distant. The power house will be 40 × 180 ft. Mgr., D. Thompson. MEXICO, MEX.-The Westinghouse Electric & Mfg. Co., Pittshurg, Pa., has closed a contract for 20 300-HP. two-phase 400-volt generators, with switchboard and raising transformers, for the San Ildefonso-Thalnepantia Transmission system, near Mexico. The current will be utilized for lighting and power in the city. The genera-tors are to ho direct-conuccid to water wheels. Trans-mission will be three phase, at 22,000 volts. The terms of the contract call for Its completion by March 1, 1839. BANGALORE, INDIA.-Press reports state that S. R.

mission will be three phase, at 22,000 volts. The terms of the contract call for its completion by March 1, 1890.
BANGALORE, INDIA.-Press reports state that S. R. Best & Co., of the Universal Agency, Bangalore, India, want catalogues of electric machinery, etc.
NEW COMPANIES.-Barnesboro Electric Light Co., barnesboro, Pa., \$1,000, of which \$100 is paid in; Gerge W. Ziegler, Phillipsburg, Pa.; J. T. Shuger, Chester Hill, Pa.; Join Barnes, Treas., Barnsboro; Alfred Tucker, Philadelphia.
Citizens' Compress & Warehouse Co., Lexington, Okla.
\$2,000; to huild a compress, a gin and an electric light for the standard structure.
Magnetic Electric Light & Power Co., Memphia, Tenn., \$10,000,000; to engage in the making and supplying of the structure produced by magnet; it will also do any and all business pertaining to electric light and power. M. E. Carter, P. W. Brode, B. M. Stratton, W. C. Bridges, H. F. Kobinson.
Tinda Electric Power & Light for mines and towns. O. Ames S. Carr, Boston, Mass.; G. McW. Ross, B. Johnson, Compropolis; Cal., Stockton.

#### BRIDGES

BOSTON, MASS.-Bids are asked until May 12 for con-structing a draw span and two spans of steel superstruc-ture for the Charlestown hridge, as stated in our adver-tising columns. B. Leighton Beal, Secy. Boston Transit ComBitlOGE, MASS.-O. J. Brandon writes us that it is proposed to construct a truss bridge 100 ft. wide on pile foundation across the Charles River between Cam-hridge and Boston. William Jackson, Cy. Engr. BUFFALO, N. Y.-Bids are asked by the grade-crossing commission until May 10 for constructing the super-structure of a viaduct over the railway tracks at the Hainsburg St. crossing and at the Seneca St. crossing. Frank S. E. Bardol, Ch. Engr.

Frank S. E. Bardol, Ch. Engr. BROOKLYN, N. Y.-Reports state that plans are helng prepared by Commissioner Shea for a new hridge atross Newtown Creek, from Manhattan Ave. Brooklyn, to Ver-non Ave., Long Island City. The structure is to be a steel draw bridge 290 ft. long by 52 ft. wide, operated on

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a center pier with viaduct approaches at both extremities, estimated cost \$400,000. A temporary structure will he erected during the construction. NIAGARA FALLS, N. Y.—Pians have been approved by the Niagara commissioners of state reservation for the construction of a stone arch bridge from Goat island to the first Sister Island, estimated cost \$15,000. Andrew H. Green, Pres.; Thos. V. Welch, Supt. PITTSPORD, N. Y.—A hill appropriating \$19,000 for the construction of a bridge at Main St., over the Eric Canal, has been signed by the governor. PENN YAN, N. Y.—The hridge over the outlet at Lake Kenka, at the foot of Liberty St., will be repaired at a cost of \$1,500, according to reports. Geo. W. Aldridge, Supt. Pub. Wks., Alhany. SYRACUSE, N. Y.—A hill has passed the legislature ap-

SYRACUSE, N. Y.--A hill has passed the legislature ap-propriating \$7,500 for the construction of a hoist bridge at Catherine St.

a Catherine St. ASBURY PARK, N. J.—The county frecholders have de-cided to construct an Iron hridge across Sunset Lake at Grand Ave., estimated cost \$30,000. HOBOKEN, N. J.—The board of frecholders has di-rected Ediow W. Harrison, Ch. Engr., Fuller Bidg., Jer-sey City, to prepare plans for a viaduct to be constructed over the Erie R. R. Co's tracks at Park Ave. PITTSBURG, PA.—Bids are asked until May 5 for recon-structing the Forbes St. bridge and refiooring the hridge across the Monongahela River at Smithfield St. Edward M. Bigelow, Dir. Dept. Pub. Wks. PITTSBURG, PA.—Bids for the construction of the

M. Bigelow, Dir. Dept. Pun. WKS. PITTSBUHG, PA.-Bids for the construction of the south pler of the Ferry St. bridge will soon he asked. E. K. Morse, Engr., Carnegie Bidg. NANTICOKE, PA.-B. F. Griffth, Borough Secy., in-forms us that three hridges will be constructed in Novem-ber, for which the council will ask for an appropriation it that time.

Ber, 104 winch the Connert with tak for an appropriate at that time. BENWOOD, W. VA.—The Bellaire Bridge Co., Benwood, has been incorporated with a capital stock of \$500,000 with \$100 paid in to construct and maintsin a hridge across the Ohio River. The directors are: Wm. C. Jute, Pittshurg, Pa.; Chas. Rosser, Bellaire, O.; J. H. McCrady, Itankin Borough, Pa.; Jas. Hastings, Allegheny City, Pa.; Wm. C. Caldwell, Wheeling, W. Va. ELBERTON, GA.—W. C. Jones, Pres. Bd. Trade, Elher-ton, Informs us that two steel hridges will be constructed this summer, I60 ft. and 200 ft. long, respectively, on stone foundation. Hall Bros. Des. Engrs., Atlanta. MACON, GA.—An effort will be made to have the city construct a new bridge across the river at Fifth St., East Macon.

KNOXVILLE, TENN.-A contract was swarded April 21 by the county commissioners to Doyle, Griffith & Co. at 38.826 for constructing the approach to the new bridge spanning the Tennessee River.

apanning the rennessee River. ALLIANCE, O.-The county commissioners awarded a contract, April 30, to the Canton Bridge Co., Canton, at 87,438, for constructing the iron superstructure of a hridge 110 ft. long and 18 ft. wide over the Mahoning River.

2000 Autom Constructing the from superstructure of a bridge life file of the wide over the Mahoning River. ZUCK, 0.-Bids are asked until May 25 for constructing the iron superstructure of a bridge over the Kokosing River of two spans II5 ft. each and 14 ft. wide, surety \$500. W. A. Wander, County Audr., Mount Vernon. BEVERLY, 0.-Bids are asked until May 19 for constructing a new draw span to the bridge over the Muskingum River. W. A. Patterson, County Audr., Marietta. INDIANAPOLIS, IND.-Reports state that the following contracts were let by the county commissioners April 20: Chicago Bridge & Irôn Co., steel girder bridge over the dues the stelly spans. Nelson, steel girder bridge at Belby St., over Bean Creek, \$1, 250; J. D. Adams & Co., iron bridge over Buck Creek, in Perry township, \$2,710.

Adams & Co., Won pridge over Buck Creek, in Perry town-ship, \$2,710. DETROIT, MICH.-Reports state that the Windsor & Detroit Bridge Co., incorporated hy Charles M. Hays and George B. Reeve of the Grand Trunk Ry. and representa-tives of the Wabash Ry., have been authorized to construct a bridge across the Detroit River. CHiCAGO, ILL.-Bids are asked hy the board of trus-tees of the sanitary district, until June 25 for the con-struction of an eight-track railway bridge at Campbell Ave., over the Main Drainage Channel, surety \$3,000. James Reddick, Cik., Security Bidg. DECATUR, ILL.-Bids are asked until May 7 for the construction of a hrick and steel superstructure of a high-way hridge 100 ft. long and 16 ft. wide over Stevens' Creek. Hezekiah Hays, John H. Miller, Jacob Lebo, County Bridge Conr.; Prof. Ira O. Baker, Consult Engr., Champaign. ign.

Champaign. OSHKOSH. WIS.-Bids are asked until May 10 for the construction of an iron bridge at Sawyer Ave., according to reports. Casper Flour, Chn. Bd. Puh. Wks.

to reports. Casper Flour, Chn. Bd. Pub. WKS. MiLWAUKEE, WiS.-An ordinance has been intro-duced in the council for the construction of a new hascule bridge at Broadway, estimated cost \$65,000. Alderman Corcoran may be addressed. ST. PAUL, MINN.-The bridge committee is consider-ing the question of constructing a new bridge at Summit Ave., estimated cost \$25,000. L. W. Rundlett, Cy. Engr. BOZEMAN, MONT.-Bids are asked until May 9 for the construction of a wooden truss bridge of two spans of 140 ft. each, on tubular piers. H. P. McNaughton, County Cik.

County Cik. ALEXANDRIA, S. DAK.—Bids are asked until May 14 for constructing a bridge 64 ft. long and 17 ft. wide over Enemy Creek, in Rosedale township, according to reports. E. T. Gregory, County Audr. ELLENDALE, N. DAK.—Bids are asked until May 23 for the construction of a 175-ft. × 16-ft. steel bridge across the James River, according to reports. S. V. Saunders, County Audr.

County Audr. PEMBINA N. DAK.—Bids are asked until May 25 for the construction of nine county bridges, according to re-ports. Donald Thompson, County Audr. CLEARMONT, MO.—Bids are asked until May 6 for huilding a steel span hridge 96 ft, long over the Nodaway River, north of here. James Young, County Bridge Comr., Maryville.

TOPEKA, KAN.-C. T. McLellan, Receiver Leaven-worth, Topeka & Southwestern Ry. Co., informs us that hree new trestles will be constructed. worth, To three new

CHEHALIS, WASH.-Bids are asked until May 16 for onstructing a 100-ft. bridge and approaches over the outh fork of the Newankum River. Alhert Schooley, Jounty Audr.

County Audr. WILBUR, WASH.-Eugene Dettloff, County Comr., has been appointed a viewer to consider the proposed con-struction of a hridge across Crah Creek. LOS ANGELES, CAL.-It is reported that hids will soon he asked by the Los Angeles Traction Co. for the con-struction of a viaduct 1,500 ft. long.

ENGINEERING NEWS.

OAKLAND, CAL.-C. K. King, Receiver and Gen. Mgr. California & Nevada R. R., informs us that four new bridges will be constructed. STOCKTON, CAL.-It is reported that bids will soon be asked hy the county supervisors for constructing a steel bridge over the south fork of the Mokelumne River, near this place.

CALDWELL, IDAHO.—Bids will soon he asked hy the county commissioners for constructing a bridge across the river near here, according to reports.

# BUILDINGS

NASHUA, N. H.--Bids are asked by the U. S. Commis-sion of Fish and Fisherles, Washington, D. C., until May 16, for the construction of a hatchery, workshop and ice-house at this place. Comr., Geo. M. Bowers. WINCHESTER, MASS.--A new brick and marble stable will be erected in this town for Edward Ginn, Tremont Place, Boston, Mass., according to reports, at a cost of \$50,000. Arch., Ernest Flagg, 15 Broad St., New York. SPEINGUELE D. MASS. --SPRINGFIELD, MASS.—Bids are asked until May 16 for the furnishing of an engine, steam heating, etc., in the new laundry huilding at the city almshouse. L. D. Rohin-son, Chn. Com.

DANBURY, CONN.—It is reported that plans are being repared for a new court house and that they will soon the submitted to the people at a special town meeting. Irch., Warren R. Briggs. pr he Ar

Drepared For a new court house and that they will soon he submitted to the people at a special town meeting. Arch., Warren R. Briggs.
 BROOKLYN, N. Y.-Plans have been accepted, according to reports, for the new hulding for the Greene Ave. Presbyterian Church, to cost about \$40,000. Arch., Haltstead P. Fowler, 250 Broadway, New York.
 NEW YORK, N. Y.-Plans are being prepared, according to reports, for a new 12-story brick, stone and terra folta office hulding, to replace the Nassau Chambers Building, 114 and 116 Nassau St., which was recently hurned. Owner, Levi P. Morton, 40 Nassau St., Jerks, Jerks, Ching to reports, 120 Broadway, New York.
 NEW YORK, N. Y.-Plans are being prepared, according to reports, for a new 12-story brick, stone and terra folta office hulding, to replace the Nassau Chambers Building, 114 and 116 Nassau St., which was recently hurned. Owner, Levi P. Morton, 40 Nassau St., Jerks, Chambers Building, 144 and 164 Nassau St., which was recently for two large iron platforms and two iron foot for two large iron platforms and two iron foot for two large iron platforms and two iron foot for two large iron platforms and two iron foot for two large iron platforms and two iron foot for dista base. Job 200000. Pres., Dr. P. R. H. Gould, Arch., Jas. E. Ware, 489 4th Ave., and f4th and 66th Sts., to cost \$110,000; by J. Forguson, 253 Broadway, for a 10-story brick husiness in the Meeting at the Ave. and 120th St., to cost \$160,000. Arch., b. D. King, 111 5th Ave.
 OwkEGO, N. Y.-Bids will he asked for the construction the stinated cost, \$20,000. Pres., Dr., Stanton, U. S. Engra., Cawy, Berg & See, Jackon U. S. MENT MERGHTON (S. I.), N. Y.-Plans have heen freeley hy the managers of the Samaritan Hospital Association of Troy for the erection and completion of a 2-story stone and brick annex to be known as the "Price Meemories, active the studieng tor Cariton Liand Light Station. Major Station, U. S. Engra., Cawy, Connor & Metcalf, 1000. S. Stati

Gordon. PHILADELPHIA, PA.—The Pennsylvania R. R. Co. has been granted a permit to huild a new 2-story, iron frame ferry house,  $327 \times 140$  ft., at the foot of Market St. on Delaware Ave., estimated cost, \$250,000—Reports state that Abner H. Mershon has hought the site at 1530 Spruce St.,  $22 \times 93$  ft., and that he will erect thereon a 9-story hrick addition to the adjoining apartment building, at a cost of about \$125,000.

We state that the the set of the

plumoning work for the new court house, using hrass piping, at \$46,827.
WASHINGTON, D. C.—A bill has heen introduced in the Senate providing for a new city hall building to cost about \$2,500,000. Plans are to he open to competition, a commission cailing on ten architects of ahility to submit designs, and the compensation for accepted drawings to he 3% of the cost of the huilding exclusive of heating, ventilating, electrical and plumbing apparatus. The other competing architects are to receive \$500 each. The hill carries with it the immediate appropriation of \$10,000.—The Metropolitan Railroad Co. will shortly hegin the erection of a brick and terra cotta railway waiting station, 27 × 54% ft., on 36th St., between Prospect Ave. and N St. Arch. Appleton P. Clark, Jr., 605 F St., N. W.
SAVANNAH, GA.—Bids are asked by the chief quartermaster, Atlanta, Ga., until May 23, for the construction of two double sets officers' quarters, one barrack, one administration huilding, etc., at Tybee Island, Savannah.—The following hias were received by the supervising architect, Washington, D. C., April 27, for the interior finish, gas-piping and approaches for the U. S. Building in this city:

AUGUSTA, GA.-The Georgia R. R. Co.'s elevator and warehouse, capacity 150,000 hushels grain, occupied by Leroy Miller, and the warehouse of Bussey & Carswell, oc-cupied by C. A. Doolittle, were hurned May 1. The total loss is estimated at \$200,000.

HERNDON, ALA.-Bids are asked by the chief quarter-master, Atlanta, Ga., until May 23, for constructing two double sets of officers' quarters, one harrack, one bakery, etc., at Fort Morgan, near Herndon. FORT THOMAS, KY.-Bids are asked until May 21 for constructing a detached ward for the hospital building. Harry R, Lee, Q. M., Newport.

Harry R, Lee, Q. M., Newport. CINCINNATI, O.-We are informed that the follo-contracts were awarded April 26 towards the erection the new Pearl St. market house, between Sycamore St. Broadway: Archs., Samuel Hannaford & Sons: for general construction, including plumhing, gas-fitting, tric light wiring, etc., L. P. Hazen, of Clucinnati, at 300; for hronze tablets, J. B. Schröder, at \$1500 butchers' counters and hlocks, Clucinnati Butchers' ply Co., at \$3,145; for refrigerators, with tile lining: Schmidt & Co., of Clucinnati, at \$6,300. DETROIT, MICH.-Bids are asked by the commission of parks and boulevards, until May 16, for constru-a stone and from shelter pavilion in Belle Isle Park, cost of ahout \$9,500. Pres, A. S. Parker. NEWBERRY, MICH.-Bids are asked by the truese S44

cost of ahout \$9,500. Pres., A. S. Parker. NEWBERRY, MICH.-Bids are asked by the trustees of the Upper Peninsula Hospital for the Insane, at New-berry, until May 17, for the completion of a cottage for disturbed patients. Archs., Charlton, Gilhert & Demar, Camp Bidg., Milwaukee, Wis.

Camp Bidg., Milwaukee, Wis. CHICAGO, ILL.-Bids are asked by the board of educa-tion, 1110 Schlifer Bidg., until May 13, for erecting an addition to the O'Toole School Building, at 48th and Bichop Sts.—It is reported that plans have been prepared for a new huilding to replace the old Collseum, at South Park Ave. and 24th and 25th Sts. Francis Hutchinson, 66 West Adams St., is said to be interested. FAST ST LOUIS ILL -Valenting Reis & Son of Beth.

West Adams St., is said to he interested. EAST ST. LOUIS, ILL.—Valentine Reis & Son, of Belle-ville, III., were awarded the contract, April 30, for the erec-tion of the new hrick and stone city hall huilding, at about \$72,300. LEWISTOWN, ILL.—Bids are asked by the supervisors of Fulton county, May 10, for the reconstruction of the in-terior of the county jail huilding. W. H. Boyer, COUPER LAW

County Cik. GREEN BAY, WIS.—The lowest hid received for the construction of an addition to the state reformatory buil-ing, at this place, was that of Hinkley & Powers, Fond du Lac, Wis., at \$20,880; the next lowest was that of the Hackworthy Construction Co., Appleton, Wis., at \$30,386, Arch., John Charles, Menominee, Wis.

WAUKESHA, WIS.—Bids are asked by the board of pub-lic works, until May 9, for constructing a new high school building: estimated cost, \$30,000. Henry Biair may be addressed.

accressed. CEDAR RAPIDS, IA.—Bids are asked, until May 25, for Improvements to the Monroe School Building. E. J. C. Bealer, Chn. Com.

DES MOINES, IA.-F. C. Huhhell, Pres. Des Moines Ry. o., informs us that this company expects to erect a new mion station, 300 × 47 ft., built of terra cotta, stone and C

VINTON, IA.—O. H. Olsen, Stillwater, Minn., has WINTON, IA.—O. H. Olsen, Stillwater, Minn., has awarded the contract for erecting a new school huildi, this place, at \$21,350.

awarded the contract for erecting a new school huliding at this place, at \$21,350. MARSHALLTOWN, IA.—Bids are asked until May 26 for the erection and completion of a 2-story brick building. Archs., Foster, Liehhe Co., Des Moines, Ia. WHITE EARTH, MINN.—Bids are asked by the U.S. Indian Service, until May 21, for the erection on the White Earth Reservation of a brick school building, a laundry building, a dormitory, etc. Agent, John H. Sutherland. AUBURN, NEB.—A special election has been called by the commissioners of Nemaha county for May 28, to vote upon the proposition of is building. ANACONDA, MONT.—Plans have heen accepted for the new court house and jail building, to cost about \$97,000. Archs., Bell & Kent, Helena, Mont. \_\_PRESCOTT, ARIZ.—Bids are asked by C. W. Johnstone,

Archs, Bell & Kent, Helena, Mont. PRESCOTT, ARIZ.—Bids are asked hy C. W. Johnstone, Territorial Treas. until May 12, according to reports, for the purchase of \$100,000 of 5% capitol huliding honds. HOUSTON, TEX.—E. P. Cushing, Ch. Engr., Houston, East & West Texas R. R., informs us that the company will erect three new combination stations this summer.

GALVESTON, TEX.-Bids are asked by the chief quar-ter-master, Atlanta, Ga., until May 23, for constructing two double sets officers' quarters, one barrack, etc., at Fort Point.

Fort Point. PORTLAND, ORE.-Wolff & Zwicker, of Portland, have been awarded the contract for the metal work for the Til-lamook Light Station, at \$1,868. Balfour, Guthrie & Co., received the contract for cement work, at \$575. LOS ANGELES, CAL-Bids are asked, until May 18, for certain work in connection with the county court house, including the construction of a tunnel and shaft, an ele-vator tower, etc.; bond required, \$10,000. T. E. Newlin, County Cik.

County Clk. SAN JOSE, CAL.—It is reported that Mrs. J. L. Stan-ford has contracted with Peacock & Butcher, to erect an addition to the museum at the university; cost, \$39,060. WALKERTON, ONT.—Bids are asked, until May IO, for the erection of a house of refuge for Bruce county. W. S. Gouid, County Clk.; H. J. Powell, Arch., Stratford, Ont.

WATER-WORKS.

KINGFIELD, ME.-It is stated that the contract for con-structing works for the Kingfield Water Co. has been let to Lucian A. Taylor, Worcester, Mass. The work must be completed hy July 15.

completed hy July 10. HAMPTON, N. H.-Chas. M. Lamprey, Clk. Hampton Water Works Co., writes us that surveys will soon be made for the proposed works, noted in our issue of April 21.

BARRE, VT.-C. S. Currier, Cy. Engr., writes us that purchase of the proposed source of new supply in Martin Brook has not yet been authorized. J. W. McDonald, Chn. BOSTON, MASS.-Bids are asked until May 12 for lay-ing water mains, as described in our advertising columns. F. P. Stearns, Ch. Engr. Metropolitan Water Bd., 3 Mount Vernon St., Boston.

Vernon St., Boston. NORTH AMHERST, MASS.-W. W. Hunt, Supt. Am-herst Water Co., Amherst, is reported to have made sur-veys for a water supply for this city. It is proposed to secure the supply from Atkins' Pond, 3½ miles distant. F. P. Ainsworth may give information. NORTH ANDOVER, MASS.-Bids are asked until May 14 for furnishing and laying about 12 miles of water pipe and for huilding a reservoirs of 1,000,000 gallons capacity. as described in our advertising columns. Engr., E. Worth-ington, Dedham, Mass.; Chn. Comrs., A. A. Currier.

ATTICA, N. Y .-- The question of the municipal owner shi CANANDAIGUA, N. Y.-This place has voted against

Suing \$12,00 H. Council is reported to bave con-racted for a water supply. The plant will be completed uly 1, according to reports.

Tracted for a water supply. The plant will be completed july 1, according to reports. CORNING, N. Y.-We are informed that the following CORNING, N. Y.-We are informed that the following to dwater main. S. T. Hayt, Jr., Cy. Engr.: Herrman & Laurence, Corning, \$2,886; Walker & Conners, 126 South Main St., Elmira, \$3,297; Gillette & Gillette, Dick-man House, Corning, \$2,700, and \$3,980 for putting plop through bed of river 600 ft. instead of across bridge. EAST WORCESTER, N. Y.-Wm. E. Dante, of the East Worcester Water Co., recently incorporated, as noted in our issue of last week, writes us that the company will re-quire, about July 1, 9500 ft. of 6-in. casi-iron water pipe. HAVERSTRAW, N. Y.-James Renn, of the committee, writes us that the plans and estimates for the proposed new gravity works will be submitted to the voters soon for their approval. Des. Engr., Alex. Potter, 137 Broadway, New York.

New York. Des. Engr., Alex. Potter, 137 Broadway, New York.
LANSINGBURG, N. Y.-An election will soon be beid to vote on the question of issuing \$60,000 in bonds for the proposed new reservoir. C. E. Hicks, Cy. Engr., or Chair-man Roemer, of the committee, may be addressed.
LITTLE VALLEY, N. Y.-S. L. Sweetland, Secy., writes us that the town does not expect to vote this year on the question of building works and a light plant.
MOUNT KISCO, N. Y.-Bids are asked until May 11 for constructing the proposed gravity works. There will be to for ho. W. E. Osborne, Ck. Bd. Water Conrs.
NEW YORK, N. Y.-Bids are asked until May 12 for furnishing the water supply department with bydrants, handles, norzles, stop cocks, boxes, drills, pipe, castings, etc. Wm. Dalton, Comr. Water Supply, 150 Massau St.
PITSFORD, N. Y.-We are informed that the following works, as advertised in Engineering News, the bids for pipe and castings being given under Contract Prices. Engr., Paul Voorbee, 1210 Guaranty Bidg., Buffalo:

 pipe
 and
 Valves and Hydrants.

 Valves and Hydrants.
 \$1,255

 \*Ludiow Valve Mfg. Co., Troy, N. Y.
 1,206

 J. Thompson & Co., Philadeipbila, Pa.
 1,241

 J. A. Frost's Sons, Towanda, Pa.
 1,241

 A. A. Frost's Sons, Towanda, Pa.
 1,261

 Chapman Valve Mfg. Co., India Orchard, Mass.
 1,227

 Reading Foundry Co., Reading, Pa.
 1,265

 Stilwell-Bierce & Smith-Vaile Co., Dayton, O.
 \$860

 Rumasey & Co., Ltd., Seneca Fails, N. Y.
 505

 Gould's Mfg. Co., Seneca Fails, N. Y.
 730

 "Worthington Pump.
 \$501

 Worthington Pump.
 \$500

 Otto Gas Engine Co., Buschetter, N. Y.
 \$500

 Otto Gas Engine Co., Deventer, N. Y.
 \$500

Otto Gas Engine Co., Rochester, r	V		+ + (0+)(0+)
Olin Gas Engine Co., Buffaio, N. Y			. 555
J. W. Ruger Mfg. Co., Buffaio, N. Y	7		. 550
*J. L. Alberger & Son, Buffaio, N.	Y1		. 555
'Charter Gas Engine.	Dump	build	Doner

P	ipe Pump	Bunu-	rreset-	
lay	ing. pit.	ing.	voir.	
J. J. Finnigan, Lyons\$2	.591 \$650	\$800	\$2,030	
J. W. McConneil, Brookiyn. 3	.114 400		1,985	
Agate & Schion, Pittsford 2	.741			
*Parker & Randaii, Gowanda 2		575	1,270	
Edson Bros., Pheips 2	.934 658	776	1,955	
Chandiev Bros 2	,962 700	700	2,355	
R. B. Lewis & Co., Herkimer 2	668 855	1.000	2,007	
Richardson & Reed, Owego. 2	816 534	600	2,240	
W. B. Wilson, Buffalo 2		600	1,600	
J. J. Siegrist, Utica 2		500	1,425	

Beaver Falls, Pa. \*Awarded contract.

PRATTSBURG, N. Y.-Jebial Vaughn, Stamford, N. Y., has been awarded the contract for constructing works, as advertised in Engineering News, at about \$15,000. Engr., J. F. Wilmer, 705 Ellicott Square, Buffalo.

advertised in Engineering News, at about \$15,000. Engr., J. F. Wilmer, 705 Ellicott Square, Buffalo.
 ROCHESTER, N. Y.-Bids are asked until May 10 for furnisbing about 420 tons of 4 to 20-in. cast-iron water pipe and special castings. About haif of this quantity will be 6-in. pipe. Chas. M. Beattle, Cik., Executive Bd.; E. Kuiching, Ch. Engr., Water Dept.
 SYRACUSE, N. Y.-Bids are asked until May 13 for furnisbing cast-iron water pipe and special castings, as stated in our advertising columns. Bids are also asked until May 16 for furnishing cast-iron water pipe and pig-iead, as noted iast week. W. R. Hill, Ch. Engr. and Supt. Water Bd.
 WATLAND, N. Y.-J. F. Witmer, Ellicott Square, Buffalo, is reported as making surveys for the proposed works; estimated cost, \$50,000. Geo. Noid, Cik.
 MONTCLAIR, N. J.-The Montclair Water Co. has served notices on fits customers that it will bave metered all premises where water is used for lawn sprinkling. ERIE, PA.-The water commissioners bave been on a trip east to various cities inspecting pumps. The department expects to be soon in the market for an additional pump. There is one Holly and one Wortbington pump now in use and an old Cornisb bull pump in reserve.
 PARNASUS, PA.-Bids are asked until May 19 for constructing works and a sewerage system, as stated in our advertising columns; the works will cost \$17,000. E. D. Cree, Borough Cik.

advertising columns; the works will cost \$11,000. E. D. Cree, Borough Cik. PITTSBURG, PA.-Over \$100,000 worth of contracts were divided among five contractors last week hy Director E. M. Bigelow for the relaying of water pipe in about 90 different streets. The lowest bidders and the number of contracts they secured were: James H. McQuade, 32 streets; Cronin & O'Herron, 25 streets; Keeling & Ridge, I7 streets; P. Moran, 12 streets; H. C. Howard, 18 streets. The prices for this work were much lower than last year, ranging from 23 to 40 cents a foot. BALTIMORE, MD.-Bids were asked until May 9 for fur-nishing valves, etc., as may be needed by the water hoard during the season. Wm. L. Kenly, Ch. Engr. LAUREL, MD.-The Laurel Water Co. has been incor-porated by Jos. M. Cone, J. Stuart McDonald and W. S. Minch, of Baltimore, Md. Edward Phelps, Mayor, may be addressed.

idressed. CHESTERTOWN, MD.—This place has voted to pur-base the works of the Chestertown Water Co. James rice, Water Comr.

WILLLAMSPORT, MD.-M. E. Cullen, Town Trea withes us that the matter of building works and a lig hant has not as yet assumed definite shape. Some acti will likely be taken in the near future by the appointme of board of supervisors by the burgess, who will have char of the construction. ilght

the construction. WHEELING, W. VA.-Blds will probably be asked in few days for furnishing a 12,000,000-gallon pumping en-ne, to cost about \$75,000. A. L. White, Cy. Engr.

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ROCK HILL, S. C.-Bids are asked until May 15 for constructing the proposed works. A report states that the council at its last meeting adopted plans and specifica-tions for the works. The plane call for two wells, S ins. in diameter, with a capacity of 450,000 gallons a day; a reservoir and a tank, the top of which shall be 125 ft. bigb. Ten-inch pipe is to be used on Main St. 8 and 6-in, pipe on side streets. There are to be, at first 40 bydrants. Population, 6,000. Engrs., Pownall & Minshall, ISO Nas-sau St., New York; Cy. Treas, J. D. Scruggs. ATIANTA CA. We are informed that the divertified of the street.

ATLANTA, GA.-We are informed that the city pro-poses to extend the water mains to Forrest Park, two miles distant, for the use of the U. S. Army.-A local paper states that the election called for June 6, to vote on the question of issuing bonds for extending the mains, has been postponed until Oct. 5. W. D. Greene, Cy. Clk.

FITZGERALD, GA.—Bids are asked until about June 18 for constructing the proposed works and light plant. The clty sold \$33,000 of bonds in April for these improvements. Aidermen A. W. Reynolds, Chn. Com., and Martin Scott may be addressed.

COLUMBUS, GA.—The Columbus Water Works Co. bas submitted a proposition to the council to lay about 25,000 ft. of pipe and set up a number of new bydrants. L. F. Garrard, Jr., Secy. and Treas.

GADSDEN, ALA.—The Mayor writes us that the council will consider the question of building new works at the first meeting in May, the works of the Gadsden Water Works Co. not being sufficient for the demands made upon it. The company is now in the hands of a receiver and in trouble with the city. Population, 6,000.

trouble with the city. Population, 6,000. M'COMB, MiSS.-C. C. Jarvis, Mayor, writes ua that the election to vote on the question of issuing \$60,000 in bonds for works and a light plant has again been postponed un-til May 9. Engrs., Sanders & Porter, Louisville, Ky., and Brookhaven, Miss. SUMMIT, MISS.-We are informed that hids will he asked in a few days for constructing the proposed works. Engrs., Alber & Byrne 1, 8214 Second Ave., Birmingbam, Ala.; Mayor, J. B. Holden; Secy., P. A. Mattbews. ROGERSVILLE, TENN.-An election will be held May 18 to vote again on the question of building works at a cost of \$18,000. H. J. Nelson, Mayor.

\$18,000. H. J. Nelson, Mayor. COLLEGE HILL, O.-We are informed that this piace will vote, June 4, on the question of issuing \$45,000 in bonds for works. Plans and specifications were prepared by E. F. Layman, 32 East 3d St. Clincinnati. BRISTOL, IND.-Wm. M. Sullivan, Town Clk., writes us that the question of building works and a light plant, re-ported in our issue of last week, has been given up for the present. LA PORTE, IND.-W. H. Rosencrans bas submitted plans and specifications for a new water auppiy for the Little Kankakee River, to cost about \$55,000. O. G. Fox, S. W. Lomer and Chas. G. Replogle, Water Comrs. PIERCETON, IND.-The Pierceton Water Works Co.

PIERCETON, IND.—The Pierceton Water Works Co. bas heen incorporated with a capital stock of \$10,000. Pop-ulation, 1,100.

IONIA, MICH.-Plans, etc., bave heen completed hy D. C. Crawford, C. E., and O. Waterbury, Arcb., for a 340,000-gailon reservoir to cost \$3,600, and new pumps to cost \$3,000.

MANCHESTER, MICH.-A. J. Waters, Pres., writes us that this place is not contemplating putting in works, as reported in our issue of last week.

eporten in our issue of last week. NEGAUNEE, MICH.—It is stated that the works will be overhauled and a number of improvements made to it. upt., J. A. Wasmuth. ZEELAND, MICH.—The people are reported to have oted upon the question of building works. CRESTON, IA.—Freeman Turner, Des Moines, Ia., is re-orted as preparing pians for a 150,000-gailon steel stand-ipe, to cost about \$5,000. PRESTON, IA.—The lows Engineering Comparison of the lows of the lows Engineering Comparison of the lows and the lows and the lows NEAR STANCE IN THE LOWS Engineering Comparison of the lows and the lows an

pipe, to cost about \$5,000. PRESTON, IA.—The Iowa Engineering Co., Iowa City and Clinton, Ia., is reported as preparing plans for the pro-posed works for the Preston Light & Water Co., which was granted a 25-year franchise in December. Population, 800. Secy., W. B. Davy. MORRIS MINN.—The Iowa Engineering Co., Iowa City, Ia., Is preparing plans for the proposed works for this place, to cost about \$25,000. The question of building the works will probably soon be voted on. Anton Watske may be addressed.

be addressed. ST. PAUL, MINN.—Bids are asked until May 9 for fur-nisbing about 10,000 ft. of 6 to 36-in. cast-iron water pipe, 8 tons of soft pig-lead, and for laying 4 to 30-in. retary Caufield has prepared specifications for the supplies for the extension of water mains this year. The ex-tensions are estimated to cost \$25,000. Improvements are also contemplated at the Pleasant Lake pumping station. The lake covers 700 acres. The work to he done at the lake is estimated to cost \$5,000. Bids for the contem-plated work will be received at the next meeting of the board. TRIPP, S. DAK.—It is stated that Y-----

\*Bids were not invited on single pumps. †Engine too small and no guaranty to bid. §Blake, 18-in. stroke. Note.-The triple expansion type was selected on account of comparative slight difference in price and greater effi-ciency, and the bid of L. M. Rumsey Mfg. Co. for two Blake pumps at \$5,468 was recommended on account of the light weight and convenience of placing in space available.

PARIS, TEX.-Walter C. Dean, Cy. Engr., writes that the city is asking for bids for constructing the ea dam for the artificial lake fr- 'be improvement to

water supply. It is probable that bids will soon be asked for furnishing pipe, pumps and stand-pipe.

for furnishing pipe, pumps and stand-pipe. SEATTLE, WASH.—The question of building a steel stand-pipe. 25 × 70 ft., in City Park, at a cost of \$11,725, is being considered by the council. ANTELOPE, ORE.—J. B. Golt, County Surv., The Dalles, Ore., writes us that this city is preparing to put in works. The water will be furnished by springs above the town, which the city has already purchased. NAPA, CAL.—The board of trade has asked the council to engage an engineer to make surveys for a supply from Recot Canyon. This is the first move towards securing municipal works, according to reports. REDWOOD CITY, CAL.—Bids are asked until May 9 for sinking a 16-in, well for an increased water supply. D. R. Stafford, Cik.

SAN DIEGO, CAL.—The San Diego Flume & Water Co., it is reported, will increase its water supply by sinking additional wells.

additional wells. CORONA, CAL-II. Ciay Kellogg, Santa Ana, Cai., is reported as preparing plans for a water supply to be fur-nished by the Temescali Water Co. The pipe line will be 13 miles long, of which only three miles will be built this year; estimated cost, \$65,000.

year; estimated cost, \$05,000. VENTURA, CAL.-It is stated that the trustees have de-cided to give up the idea, at present, of building munic-lpal works and light plant. PRESCOTT, ARIZ.-This city has voted to issue bonds for the proposed works, to cost about \$120,000. J. J. Fisher, Cy. Engr. BIRMINGHAM, ENGLAND.-Bidg are asked, until May 16, for constructing about 14½ miles of the aqueduct from Deconton to Cleobury Mortimer. Engr., James Mansergh, 5 Victoria St., Westminster, London; Town Cik., Edward O. Smith.

# SEWERAGE.

SLWLHAGE. HYDE PARK, MASS.—This city has asked for authority to issue \$100,000 in bonds for sewers. WORCESTER, MASS.—The committee has voted to recommend that intercepting sewers be placed in Milbury St. from Cambridge St. to Vernon Square, and in Pleasant, Elim and Mechanic streets. The cost is expected to be about \$50,000.

SYRACUSE, N. Y.—The West End Business Men's As ation is urging the council to build a trunk sewer he castern portion of the city. A. R. Gillis, Chn. Com ciation

FLEMINGTON, N. J.-The proposed system with the isposal plant will probably be built this season. A. B. Cline, Cy. Cik.

Kilne, Cy. Clk., WOODBURY, N. J.-D. T. Mather, Cy. Clk., writes us that on June 7 an election will be beld to vote on the question of accepting or rejecting "an act to authorize cities of the third class to construct sewers, drains or both and to provide for the payments of the cost thereof," both and to provide for the payments of the cost thereot, PARNASSUS, PA.—Bids are asked until May I9 for con-structing a system and water-works, as stated in our ad-vertising columns. E. D. Cree, Borough Cik. NORFOLK, VA.—An election was held May 4 to vote on the question of issuing \$150,000 in honds for sewers in Brambleton ward. H. S. Herman, Cy. Treas. CLEVELAND, O.—Bids are asked until May 26 for con-structing sewers in four streets. Geo. R. Warden, Dir.

TOLEDO, O.-Bids are asked until May 16 for construct-ing a 10-in. pipe and 24-in. hrick sewer in two streets. L. P. Harris, Cy. Cik.

EVANSVILLE, IND.-It is proposed to build sewers in number of streets. number

INDIANAPOLIS, IND.—Bids are asked until May 9 for onstructing sewers in several streets. M. A. Downing, Nn. Bd. Pub. Wks.

Chn. Ed. Pub. Wks. CHICAGO, ILL.-Commissioner McGann has awarded the contracts for building the 39th St. and Lawrence Ave. conduits of the intercepting sewer system to the Chicago Star Construction Co., at \$786,501 and to Farley & Green, at \$479,663. The work is to he completed within a year. Both contractors must furnish bonds for 50% of the amount of the contract price.

of the contract price. INDEPENDENCE, MO.-S. H. Woodson, Mayor, writes us that a vote on the question of building a system will prohably be taken within the next 60 days. POPLAR BLUFF, MO.-W. H. Hopolite, Cy. Engr., writes us that plans and specifications for a system have not yet been prepared. The council has ordered a survey to be made at once. There will be required 12 to 4-in. pipe sewers.

ST. JOSEPH, MO.-Alderman F. E. Ernst writes us that no action has yet been taken on the proposed Blacksnake sewer, reported in our issue of last week.

sewer, reported in our issue of last week. ST. LOUIS, MO.-We are informed that the following bids were received April 29 for constructing 18, 15 and 12-in. pipe sewers in Quincy St., sewer district No. 5; and iocal bidders: John F. McMabon & Jos, J. Cooney, 27, 277. Hill-O'Meara Construction Co., \$2,085; Skrainka Construc-tion Co., \$2,021; H. Ruecking & Co. (accepted), \$2,086; St Louis Quarry & Construction Co., \$3,162; H. Weilman & Co., \$2,919; Harry F. Heman, \$2,576; G. Eyernan, Jr., \$2,961; Robt, J. Boyd Paving & Construction Co., \$3,173; Robt. Wyckoff, \$3,001. SPOKANE, WASH\_-Councilman Duration be interested

tobt. Wyckoff, \$3,001. SPOKANE, WASH.-Councilman Dunning has introduced resolution to construct a sewer in the Fifth ward.

PRESCOTT, ARIZ.-A special election beld April 20 on the question of issuing \$150,000 bonds for water-works and \$25,066 for sewerage resulted in favor of the proposition. F. M. Murphy, W. N. Kelly and E. W. Wells are on the

# GARBAGE DISPOSAL-STREET CLEANING

GARBAGE DISPOSAL-STREET CLEANING READING, PA.-The following bids were received May 2 for the collection and destruction of garbage; S. S. Hoff, Cy. Engr.: Joseph P. O'Relly, \$11,608; Charles H. Fisher, \$11,406; A. Lincoln Frame, \$10,902; Janes A. O'Rourke, \$7,900: Charles C. Fisher, \$11,900; David Peoples, Phila-delphia, \$9,200; John O'Connor, \$11,988; COLUMBUS, O.-Bids will soon he asked hy Clerk Fanning of the council for cleaning certain streets of the city by machinery.

city by machinery. DETROIT, MICH.—F. A. Blades, Controller, writes us that the following bids were received April 30 for a 3-year contract for collecting and disposing of the gar-bage from July 1: Detroit Sanitary Works, Detroit, first year, \$55,000; second year, \$60,000; third year, \$65,000, and 50 cts, a ton rebate for all garbage collected in ex-cess of 15,000 tons. The amount collected last year amounted to about 16,230 tons. Western Reduction Co., Chicago, Ili., \$62,350 a year for three years.

#### STREETS AND ROADS

ANSONIA, CONN.-Bids are asked by the City Clerk until May 11 for paving the Maple St. bridge over the railway and Naugatuck River; surety, \$300.

SIMSBURY, CONN .- Bids are asked until May 10 for rading sections of roads. W. H. Whitebead, First Se-

BUFFALO, N. Y.-Bids are asked until May 12 for macadamizing Mayer Ave. from Ontarlo St. to Rano St. R. G. Parsons, Secy. Bd. Pub. Wks.

ALBANY, N. Y.-Bids are asked for the following esti-mated work: Van Woert St., 2,930 sq. yds. of brick paving, 2,300 lin. ft. of 6-in. granite curb, and four re-ceiving basins; Lexington Ave., 6,600 sq. yds. of brick paving, 3,400 lin. ft. of curb, 4,000 sq. ft. of flag and 20,000 sq. ft. of brick sidewalks. Thomas J. Lanaban, Clk. Bd. Contract and Apportionment.

NEW ROCHELLE, N. Y.-C. W. S. Wilson, Village Engr., writes us that the Weatchester Electric Ry. Co., which is about to construct about eight miles of electric railway from Mount Vernon to and through New Rochelle, will pave the road between the rails and for 2 ft, out-side with brick on a 6-in. concrete foundation. For fur-ther Information see Street and Electric Railway.

CORTLAND, N. Y.-We are informed that it is not cer-tain whether the proposed paving in Main St. for one mile will be constructed this year or next. A petition is being circulated among the property owners. E. E. Mellon is interested. D. F. Wallace, Chn. Com.

HOOSIC FALLS, N. Y .- The committee is contemplating the purchase of a stone crusher.

ITHACA, N. Y.—This city states in our advertising mns that it will spend \$30,000 for brick paying this y W. Force. Secv. umns that

SEA CLIFF (L. I.), N. Y.—An election was held May 4 by vote upon the question of raising \$8,000 for street im-rovements and issuing bonds for that purpose.

TROY, N. Y .- Bids are asked until May 10 for grading in Tawling Ave. E. Ogden Ross, Secy. UTICA. N. Y.-The Warren-Schaff Asphalt Paving Co. submitted the lowest bids April 29 for paving in West St. at \$7,932, and in Albany St. at \$15,837.

ELIZABETH, N. J.-Bids are asked until May 16 for about 1,370 ft. of 4-ft. flagging, 1,200 ft. of 4×16-in. curh and 600 ft. of curb to reset. N. K. Thompson, St. Comr.

Comr. MONTCLAIR, N. J.-Bids are asked until May 9 for laying about 2,800 lin. ft. of stone sidewalk on Upper Mountain Ave.; estimated coat, \$1,771; also for con-structing stone roads 16 ft. wide and for furnishing cracked stone for gutters and crosswalks. James Owen, Town Surv.; Harry Trippet, Town Clk. NEWARK, N. J.-Bids are asked until May 5 for about 14,200 sq. yds. of sheet asphalt paving and curbing in por-tions of six streets. J. C. Mundy, Sunt.-Bids are asked until May 9 for furnishing 1½ and 2½-in. broken stone, as may be required during the year. Joseph B. Brady. Chn. Ed. Freeholders. EDGWOOD, P.A.-Bids were received May 2 for about

Cun. Ed. Freeholders. EDGWOOD, PA.-Bids were received May 2 for about 5,800 cu. yds. of grading. 5,200 lin. ft, of curbing and 6,360 aq. yds. of paving. R. L. Smith, Borough Engr. FRANKLIN, PA.-Thos, L. Kennerdell, Cy. Engr. in-forms us that the question of constructing about 6,000 sq. yds. of brick paving is being contemplated. Plans are not yet ready. ERERDORT DA. PLA.

of yet ready. FREEPORT, PA.—Bids are asked until May 16 for rick paving, as described in our advertising columns. Ingr., Robt, H. Wilson, Saltaburg, Pa.; Clk., Geo. B.

Findley. Findley. PHILADELPHIA. PA.—Bids are asked until May 12 for constructing LIncoln Ave. drive in Fairmount Park. Jesse T. Vogdes, Ch. Engr. and Supt. Park Comrs. PITTSBURG. PA.—Bida are asked until May 26 for im-noving the Butler Pike extension, the Ridge Road and the Temperanceville & Noblestown Turnnike. F. W. Patterson, County Engr.; W. E. Thompson, County Coniroller. READING, PA.—An ordinance has been passed by the council for paving portions of 12 streets with sheet as-phalt. Jacob Weidel, Mayor; H. H. Hammer, Cy. Clk. WASHINGTON, D. C.—The commissioners have ordered that Sherman Ave. from Grant to Irving Sts. be macada-mized.

BALTIMORE, MD.-Bids are asked until May 12 for fur-nishing paving stones, curb, gutter, flag, cement, etc. L. F.

Cy. Comr.

WHEELING, W. VA.-Bids are asked until May 7 for paving certain atreets with brick; bond, \$3,000. Wm. H. Hornisb, Clk.

Hornish, Clk. LOUISVILLE, KY.-Bids are asked by the board of oublic works until May 10 for 3.068 lin. ft. of granite block paving in Hamilton St., naving in 15 alleys with brick, and constructing brick sidewalks in portiona of 21 streets; estimated cost, about \$65,000.

CINCINNATT, O.-Bids are asked until May 16 for brick aving, grading, curb. etc., in Friendshin St., from Pike t. to Butler St. A. P. Butterfield, Cik. Bd. Cy. Affairs.

CLEVELAND, O.-Bids are asked until Mav 24 for brick paving, grading, etc., in Churchil St., from Doan to Park-wood St., and paving Prospect St. with Medina dressed block between Erle and Brownell Sts. Geo. R. Warden, Dir. Pub. Wiss.

EAST LIVERPOOL. O.-Bids are asked until May 26 or paving, etc., in three streets, according to reports. N. Hanley, Cy. Clk.

MIDDLETOWN, O.-J. V. Bronnell, Clk., informs us bet the council is not contemplating any paving at present.

SANDUSKY, O.-The following bids were the lowest received April 27 for paying in Wayne St.: F. E. Cole, Toledo, Market to Scott St., aheet asphalt, \$29,069; Michael J. Callan, New Castle, Market to Scott St., block asphalt, \$32,045; C. F. Hartman, Waiter to Market St, brick, Bolen's granite Portland cement filler, \$2,753.

TOLEDO, O.-Bids are asked until May 30 for stone Frie St. Woodville St. and Second St. L. P. Harris, Cy.Cik. Woodville St. L. P. Harris, Cy. Cik. Woodville St

TOLEDO. O.-Bids are asked until June 6 for paving In rie St., Woodville St. and Second St. Levi P. Harris, Trie St., Ty. Cik.

BRAZIL, IND.-The following bids were received April 28 for constructing seven miles of macadam road. Thomas Phillips, County Audr.:

 Jean & Jean, Worthington, Ind.
 \$19,000

 Miller & Williams, Marion, Ind.
 19,325

 Notter & Huxton.
 19,108

 Funk & Muehler, Bowling Green, Ind.
 19,047

COVINGTON, IND.-Foster & Co. have been awarded a contract, at \$16,349, for paving Perry St. with brick from Jackson St. to Wabash depot.

ROCKVILLE, IND.-Bids are asked until May 16 for the construction of four highways, a total length of about 15 miles, In Green townsbip. E. H. Owen, County Audr.

SALEM, IND.-Bids are asked until May 5 for the pur-base of \$34,190 road bonds. Thomas B. Cauble, County

BATTLE CREEK, MICH.-Bids are asked until June for furnishing four car loads of bluestone crossing flag an ten car loads of bluestone curb. W. H. Mechem, Cy. Engr. Abraham T. Metcalf, Mayor; Albert S. Simpson, Recorder MORGAN PARK, ILL.—Bids are asked until May 10 for brick paving and concrete curb and gutter in Arling-ton and Fairfax Aves. Edgar Ayres, Vilage Clk.; M. H. King, Pres. Bd. Local Improvements.

CHICAGO, ILL-Bids are asked until May 11 for cedar block paving in portions of 12 streets, macadamizing in three atreets, brick paving in Lake St. and grading, etc., in four streets. L. E. McGann, Pres. Bd. Local Improvements

MINNEAPOLIS, MINN.—Hayes & McDougall have been awarded a contract for grading Lake St. boulevard at a cost of about \$5,500. A contract bas been awarded to Fielding & Sbipley, at \$2,680, for sandstone block paving in Summit Ave.

ST. PAUL, MINN.-The following are the lowest bids received April 28 for asphalt paving in five streets: Hen-nessy & Cox, Sherburne Ave., \$3,452; Market St., \$8,552; Asbland Ave., \$19,509; Warren-Scharf Asphalt Paving Co., Laurel Ave., \$27,339; Sixtb St., \$6,513.

-Bids Received at Somerville, Mass., April 20, for Constructing Storm Sewers in Broadway and Sargent St.

	F	xcavatlo	n,i	Under-	conc	nent	Br mas	ick	36.
Bidder.	730* lin.ft.	920† 11n.ft.	Rock, 1,000 cu.yds.	drains, 1,650	Prtlnd, 600 cu.yds.	Rsndle, 100 cu.yds.	Prtind, 190 cu.yds.	Rsndle, 380	
chard Falvey, Somerville, Mass A. Hanscom & Co., West Medford, Mass. E. Trumbull & Co., Boston	\$2.60 2.60 3.85 2.57	\$2.40 2.06 3.55 2.25			\$5.20 5.50 4.34	\$4.50 4.50 3.65	\$12.50 12.50 9.21	11.00 8.09	Total. \$16,444 17,013 17,535
H. Bryne, Hlyde Park, Mass has, A. Mongan, Somerville, Mass P. O'Connell, Dorchester, Mass has, G. Craib, Winthrop, Mass	$3.50 \\ 2.75$	2.20 2.50 2.35 2.59	$     \begin{array}{r}       2.30 \\       3.00 \\       3.00 \\       3.75     \end{array} $	.10 .15 .15	$     \begin{array}{r}       6.50 \\       6.00 \\       6.00 \\       5.75     \end{array} $	$5.00 \\ 4.50 \\ 5.00 \\ 5.00$	$     \begin{array}{r}       14.00 \\       13.00 \\       14.50 \\       13.50     \end{array} $	12.00 11.75 12.50	$18,479 \\ 19,005 \\ 19,022$
aurice Buttimer, Somerville, Mass W. Everson, & Co., Boston co. W. Judd, Boston, Mass	$2.50 \\ 4.50$	2.40 4.00 4.40	$5.00 \\ 4.00 \\ 4.00$	.25 .25 .20	$7.00 \\ 6.00 \\ 5.60$	5.50 5.00 5.00	13.50 14.50 15.00 15.00	12.00 12.00 12.00 13.50	19,380 21.510 22,888
J. Newman, Providence, R. I H. McKnight, Hyde Park, Mass	5.60	5.25 3.50	4.50 6.50	.25 .20	6.45 7.00	5.00 6.00	$14.25 \\ 16.50$	13.80 12.85 14.00	$24,160 \\ 25,791 \\ 26,006$

\*For 64-in. sewer. †For 56-in. sewer.

Ric H. C. T. Chi

J. Ch. Ma E. Geo

MARSHALLTOWN, IA.-Bids are asked until May 23 for brick paving. F. G. Price, Mayor, informs us that about three miles of brick paving will be laid in atreets 30 ft, wide. Wm. Bremner, Cy. Engr.; J. G. Trotter, Cy. Cik.

Clk. KANSAS CITY, MO.—The board of public works has awarded the Barber Asphalt Paving Co., New York, a contract to construct a pavement on Southwest Boule-vard from Main St. to the bridge, estimated to cost about \$45,000. An ordinance bas been approved for paving Holmes St. from 15th to 31st St., to cost from \$40,000 to \$50,000.

50,000. BERKELEY, CAL.—Bids are asked by the city trustees Intil May 8 for constructing about 33,000 sq. ft. of ma-adam road and 8,000 sq. ft. of concrete gutter in Russell

St. SAN FRANCISCO, CAL.-New bida will be asked by the street committee for paving Webster St, with wooden blocks on a concrete base from First St. to Fourth St. The lowest bid was submitted by the Piedmont Paving Co. at \$15,414.

Co. at \$15,414. TORON'TO. ONT.-Bida are asked until May 9 for con-structing brick and concrete aidewalks in six streets. Jobn Sbaw, Mayor and Chn. Bd. Control.

## MANUFACTURING PLANTS.

MANUFACTURING PLANTS-MIDDLEBURY, VT.—The Brandon Italian Marble Co. is making arrangements to build a new shop in this town, according to reports. President Upham may be addressed. TONAWANDA, N. Y.—It is reported that the Barnes Mfg. Co., of Syracuse, N. Y., contemplates the erection of a new factory building at this place. WEST TROY, N. Y.—We are informed that estimates are being received for the erection of a 5-story collar factory, with engine room annex and water tower, at Watervilet, for William Barker; estimated cost, \$30,000. Arch., E. W. REYNOLDSVILLE, PA.—William A. Stamey, of this town, has been appointed by the state to investigate the growth and culture of sugar beets, preparatory to the erection of a sugar refinery in the Allegheny valley.

WATER PIPE AND SPECIALS.—Buffalo, N. Y.—We are informed that the following bids were received April 27 for furnisbing water pipe and special castings, for the proposed water-works, as advertised in Engineering News: contract was awarded the Lake Shore Foundry Co.; Engr.,Paul Yoor-hees, Guaranty Bldg., Buffalo,; Secy. Water Comrs., Sam-uel Rand:

Chas. Millar & Son, Utlca, N. Y		134	CIS.	Total. \$4.952
Reading (Pa.) Foundry Co	19.40*	2	4.5	5.442
Lake Shore Fdry Co., Cieveland	16.50	214	6.6	4.852
Buffalo (N. Y.) Cast-Iron Pipe Co.,	17.50	2"	6.0	5.118
Jackson & Woodin Mfg. Co.Berwick	17.73		96	5.157
Nat'l Fdy & Pipe Wks, Scottdale, Pa	17.80		4.6	5.202
Southern Pipe Co., Anniston, Ala	17.52	2	6.6	5.123
Donaldson fron Co., Emaus, Pa	17.92	1%	1.6	5.211
R. D. Wood & Co., Philadelphia, Pa.	17.65	2	6.5	5.160

\*4-in., \$19.40; 6 and 8-in., \$18.40.

ASPHALT PAVING.-Minneapolis, Minn.-The followi ids were received April 30 for 21,130 sq. yds. of asph aving; E. R. Dutton, St. Engr.:

Items. New York. Co., New York.	Ayers Asphalt Pav. Co., Zanesville, Ohlo.	Assyrian As- phalt Co., Chicago, III.
10-year guarantee; 10% reten-1 \$2.23 tion, 15% guarantee, a sq.yd	\$2.15	\$2.49
Maintainance a sq. yd. a year 1.15 after 10 years.	.10	.12
Gutter, brick, a sq. yd j 2 ft 2.14	2.10	1.98
3 " 2.14	2.10	1.98
Gutter, sandstone, a sq.yd 2 " 3.38	2.95	3.07
3 " 3.38	2.95	3.07
Granite toothing, a sq. yd 3.45	3.25	3.03
STORM SEWERSomerville, Mass.	-We are	informed

that the following bids were received April 20 for construct-ing storm sewers in the eastern district; Broadway and Cross St.; E. W. Bailey, Cy. Engr.:

Undér- Undér- Excavation	
	Total.
r. H. Bryne, Hyde Park (accepted), $\$1.80$ $\$2.50$ $\$0.25$ $\$0.50$ $\$0.60$ $\$1.4.00$ $\$12.00$ H. A. Hanscom & Co., West Medford 2.07 $325$ .13 $5.75$ $4.75$ 13.00 11.50 C. E. Trumbull & Co., Boston 2.07 $325$ .13 $5.75$ $4.75$ 13.00 11.50 C. E. Trumbull & Co., Boston 2.07 $3.50$ .10 $4.34$ $3.65$ $9.21$ $8.09$ J. P. O'Connell, Dorchester 2.20 $3.50$ .15 $6.00$ $5.00$ 14.50 12.50 John J. Falvey, Somerville 3.00 $2.75$ .15 $5.75$ $5.00$ 13.50 12.00 Cost J. P. O'Connell, Winthrop 2.25 $3.50$ .15 $5.75$ $5.00$ 13.50 12.00 Cost J. P. O'Connell, Winthrop 3.75 $4.00$ .20 $5.00$ $5.00$ 15.00 13.50 Pac. W. Everson & Co. Boston $4.00$ $4.00$ .25 $6.45$ $5.00$ 15.00 12.00 J. J. Newman, Providence, R. I $3.75$ $4.50$ .26 $6.45$ $5.00$ 14.25 12.85 J. J. Newman, Providence, R. I $3.75$ $4.50$ .26 $6.45$ $5.00$ 14.20 14.00 J. H. McKnight, Hyde Park $3.00$ $6.25$ .20 $7.00$ $6.00$ 16.50 14.00 J. H. McKnight, Hyde Park $3.75$ $4.50$ .15 $6.00$ $4.50$ 12.00 12.00	\$17,410 17,988 18,215 18,665 18,708 18,985 23,290 23,565 24,153 26,168 26,275

\*For 42-in, sewer.

HC

ARLINGTON N. J.—The new roller mill of the Arling-ton Mfg. Co. was damaged by fire, May 1, causing a re-ported loss of \$40,000; fully insured. Supt., H. C. Plerce. NASHVILLE, TENN.—Press reports state that W. B. McBride, representing a Chicago brewing company, has obtained an option on a large plot of ground in this city, on which his company proposes to erect one of the largest breweries in the country. The scheme is said to embrace, in addition to the brewery, the erection of an 8-story steel-constructed hotel. NEW ATHENS, ILL.—The New Athens brewery plant was destroyed by fire, April 29, causing a reported loss of \$100,000; fully insured. LOUISVILLE, KY.—The Tobacco Warehousing & Trad-

\$100,000; fully insured. LOUISVILLE, KY.-The Tobacco Warehousing & Trad-ing Co., 8th and Magnolia Aves., Louisville, informs us that the only contract which has not yet been awarded for the completion of its new plant is a contract for one 75-HP. self-lubricating engine, compound vertical, with inverted cylinders, automatic cut-off and a steam pressure of 80 lbs. Full particulars regarding the cost of setting up such an engine are desired.

CLEANING HARBOR.—Baltimore, Md.—The harbor bard opened bids April 23 for the dredging of the barbor. The bids were divided into two classes, the first for taking the material out of the harbor and placing it bebind the sca wall, and the other for dredging and dumping the dirt in deep water. The bids were as follows: Sanford & Broks, 18 cts. a cu. yd, for taking 200,000 yds. of material out of the channels and placing it bebind the sca walls, and 11.55 cts. for dredging it and dumping it in the water. The firm bid at the same figures for taking 30,000 cu. yds, from the back basin and docks and 20,000 yds. from the Spring Gardens. The Virginia Dredging Co., of Richmond, Va. 8.9 cts, a cu. yd, on 200,000 yds. from the channels, 30,000 cu. yds. from the back basin and docks at 9.9 cts, and 29,-000 from Spring Gardens at 8.9 cts. a cu. yd. The bid was only under the second class. The Baltimore Dredging Co. second class, 200,000 cu. yds, at 6.9 cts. a cu yds.; a sts. a cu. yd.; and 20,000 cu. yds. at 6.8 ct. a cu yds.; awarded contract, at \$17,780. The Fred. E. Jones Co. 200,000 cu. yds. at 19.9 cts. 30,000 cu. yds. ct. 20,000 cu. yds. at 19.9 cts. These bids were also made in the second class.

th TI Bi Wi Is

BUCYRUS, O.-Fred. Messner was awarded the contract by the city council, April 27, for the construction of new radiator abops, with slate roofs, at \$6,839. ST. JOSEPH, MO.-It is reported that T. J. Gordon has purchased the old glucose factory near South Park, and that be will scon erect upon the site a new grain elevator with a capacity of 100,000 bushels; estimated cost, \$25,000. DECEDENT UTAH.-The Descret Irrigation Co. based DESERET, UTAH.-The Deseret Irrigation Co. has de-cided to build a new roller mill at this place, according to

Teports. DESERONTO. ONT.-The plant of the Deseronto Terra-DESERONTO. ONT.-The plant of the Deseronto Terra-by fire, April 30, causing a loss of about \$50,000; partially insured.

# CONTRACT PRICES.

ASPHALT BLOCK PAVING.—Fort Wayne, Ind.—C. E. Moellering & Co., Fort Wayne, bas been awarded the con-tract for asphalt block paving in Columbia St., at \$1.81. The blocks will be 4x4x12 ins. on 5 ins. of broken some and 2 ins. of sand. F. M. Randall, Cy. Engr. STORM SEWERS.—Somerville, Mass.—E. W. Balley, Cy. Engr., informs us that the following bids were received April 20 for constructing storm sewers in the eastern district at Broadway and Sargent Ave; the contract was awarded Richard Falvey:

SEWER DEPARTMENT SUPPLIES.-Worcester, Mass.-We are informed that the following contracts were let April for furnishing certains supplies for the sewer department: Benjamin F. Marsh, Worceater-Vitified pipe, 82% off standard list, \$1 per ton for delivery on work; Sesichas Fondry Co., Hristol, Conn.-Castings, manhole covers, \$5.75 each on work; catchbasins 1.15 cts. a h. on work; Franck, 22.05 a hbl. in bags on work; Mosendale covers, biol a bbl. in bags on work; Mosendale coment, still a bbl. in bags on work; and Webb Granite & Construction Co., Worcester-Portland coment, \$2.25 a hbl. on work; Stone and on cars; Amos M. Eaton Estate, Wor-brick, \$7.40 a M. on cars; Amos M. Eaton Estate, Wor-cetter-Sand, 75 cts. a yard on work; and Webb Granite & Construction Co., Worcester-Catchbasin stone, \$12.00 a set. GRADING CYCLE PATHS.-Minneapolis, Minn.-The following bids were received by the county commissioners and cycle paths: George Turnham, 14 cts. a cu. yd.; J. W. Kert & Co., 15 cts.; B. F. Comstock & Co., 10% cts.; Hayes & McDougal, 12% cts., awarded contract, total, \$5,500; Norton & Glesson, 14 cts.; Winston Bros., 18 cts. ERICK PAVING.-Waukesha, Wis.-We are informed that \$5,500; Norton & Greason, 14 cts.; Winston Bros., 18 cts. BRICK PAVING.-Waukesha, Wis.-We are informed that the following bids were received April 21 for hrick paving, as advertised in Engineering News; contract awarded Gia-conia Maffioli; William Powrie, Cy. Engr.:

# ENGINEERING NEWS.

SEWERS.-Dayton, O.-We are informed that the follow-ing hids were received April 28 for constructing sewers in Broadway and 1st St.; Frank M. Turner, Cy. Engr.: to the Alcatraz Construction Co., Otto E. C. Guelich, West-ern Manager, 623 Hammond Bidg., Detroit, Mich. Thia pavement is guaranteed for 10 years. Besides the above the

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<sup>1</sup>Double strength.

CEMENT WALKS.-Indianspoits, Ind.-The following bids were received hy M. A. Downing, Chn. Bd. Pub. Wks., April 25, for laying cement sidewalks; all local bidders: Robert L. King & Co., 50% cts. a lin. ft.; Henry Masg, (0 cts.; Indianapolis Improvement Co., 61% cts.; Rogers & Dunlop, 63 cts.; J. C. Vieney, 64% cts.; and Capitol Paving & Construction Co., 69 cts.

	Bids Rec	ceived at '	Waukesha,	Wis., Apri	1 21, for	Brick Pav	ing.		
					R. J.			Rickert	
		John O.	E, W.	August	Hickey.	Thatcher	A. Kell-	Const'n	Giaconia
		Jones,	Cahill,	Dienan,	Mil-	& Burke,		Co.,	Maffioli.
Quantities.				Waukesha,		Chicago,	waukee,	Racine,	Rockford.
		Wis.	Wis.	Wis.	Wis.	I11.	Wis.	Wis.	Ill.
Excavation	6,577 cu. yd	s. \$0.27		\$0.23	\$0.25	\$0.16	\$0.38	\$0.24	\$0.20
Galesburg paving brick 1	5,430 sq. yd	8		1.33	1.43	1.32	1.28	1.39	1.23
Filling					.30	.01		.50	.75
Purrington paving brick.		1.34			1.43	1.32	1.28	1.39	
New curbing	6,185 lin. ft.	45		.43	.43	.43	.43	.45	.45
Protection curb				.21	.22	.17	.20	.28	.20
Curb reset	200 " "			.10	.08	.07	.08	.10	.05
Catchbasin covers	3 each.				6.50	5.00	10.00	9.00	10.00
" complete						15.00		25.00	
" rebuilt	3 each.				10.00		9.00	25.00	10.00
Lampbole covers		3.00			2.00		2.75	4.00	
Cast-iron gutters	170 lin. ft				2.00		2.00	250	
" bridges.	300 " "	.50	.40	.41	.45	.32	.55	.50	.45
Total				\$25,539		\$24,700	\$25,693		\$23,870

INTAKE PIER, TUNNEL AND PUMP PIT.—Cincinnati, 0.—We are informed that the following hids, submitted by F. H. Kirchner & Co., Cincinnati, April 28, were the lowest for constructing the intake pier, tunnel and pump pit; as advertised in Engineering News; Chas. G. Roth, Cik. Water-Courts.:

Comrs.:	000 000 00
Caisson for intake pier 1	\$28,000.00
For pump pit 1	178,000.00
Masonry in intake pier 3,200 cu. yds.	19.00
Bridge approach, intake pier 550 "	8.00
Excavation bdg approach.intk pr 500 "	1.00
Masonry in pump pit 9,750 "	9,90
Intake shaft	32.00
Tunnel 1,430 " "	30.00
Setting seven sluice gates	280.00
12-in, stop-gate with water cylinder and piping	60.00
Six outside cast-iron gratinga 15,000 lbs	.04
6-in. and 12-in. cast-iron pipe 6,200 "	.06
In shaft and pump pit 13,600 "	.04
Brass ladders in wells & shaft 2,400 "	.20
	.04
C. i. and hronze bolts in guides. 8,150 "	
Iron clamps and dowers for mas 1,000	.08
1-Deams* 0,000	.025
	.05
Setting accumulator 70 tons	2.00
Rolling excavated material 10,000 ton-mles	.15
Pump pit shaft, lower portiont 70.25 lin. ft	47.00
" upper portion§.105,000 ibs	.04
Girder hridge, etc 31,000 "	.03
Fur. and setting stop-gates with	
hand-gear lump sum 2	36.00
2-in, brass pipe and fastenings. 9,000 lbs	.19
lron ladder in pump pit 900 "	.045
Setting 4 stop-gates in pump pit	160.00

Total ...... \$440,699.25

\*440,099.25
\*For support of accumulator and floor. \*Top of calisson to bottom of sump. \$Top of calisson to top of shell, steel. The next lowest bid was that of the Globe Construction Co., of Cincinnati, O.; the others bidders were Griffith & McDonald & Thompson, St. Louis; Mason, Hoge & Co., Frankfort, Ky.; Henkel & Sullivan, Cincinnati; Keeling, Ridge & Kaufman, Pittsburg; Foiz, Willard & Co., Cincinnati. SEWERS.—St. Louis, Mo.—We are informed that the following bida were received April 29 for constructing sewers in Clarendon Ave., district No. 3; B. H. Coiby, Sewer Comr.; all local bidders:

DREDGING.—Milwaukee, Wis.—Local papers state that the contract for dredging for the season has heen let hy the board of public works to Adolph F. Bues, representing the C. H. Starke Dredge Co., at the following prices: Milwaukee River, 7 cts. a cu. yd.; Kinnickinnic River and Menomonee River, each, 6 cts. a cu. yd. This price is just half of that paid last year. It is estimated that there will be 100,000 yds. in the Milwaukee River and 50,000 yds, in the other two rivers. BRICK PAVING.—Gloversville, N. Y.—We are informed that the following hids were received by the council April 26 for brick paving, as advertised in Engineering News; C. Fiske, Jr., Cy. Engr.:

Alcatraz Co. was awarded the contract for 1.436 lin. ft, of paving in Harrison St., at \$5.60, width, 24 ft.; and for 1.959 lin. ft. in Hoagland Ave, at \$5.50, width, 24 ft. Three streets will all have asphalt on 5-in. concrete, 1-in. binder and 2-in. surface; Berea curb,  $5 \times 22$  ins.; solid limestone corners, 3 ft. radius; solid limestone corners, 2 ft. radius;  $3 \times 12$ -in. white oak plank; 15-in., 12-in. and 10-in. sewer pipe. pipe

pipe. ASPHALT PAVING.—Fort Wayne, Ind.—We are informed that the Alcatraz Co., Hammond Bidg., Detroit, was award-ed the contract April 25 for 17,974 sq. yds. of asphalt pav-ing in Calhoun St., at \$1.60 a sq. yd. It will have a 6-in. concrete foundation, 1½-in. binder and a 2-in. surface with double track on street.

#### MISCELLANEOUS CONTRACTS.

DAM.-Paris, Tex.-Bids are asked for the construction of an earth dam for an artificial lake. Walter C. Dean, Cy. Engr.

Cy. Engr. TELEPHONE SYSTEM.—Mason, Mich.—A franchise has been granted to the State Telephone Co. to operate an ex-change in this place. DREDGING.—Sahine Pass, Tex.—Bids are asked until May 26 for dredging at this place. Maj. James B. Quinn, U. S. Engr., New Orleans, La. TELEPHONE SYSTEM.—Pekin, III.—Reports state that the Central Union Telephone Co. will improve its system throughout this place this summer. FIRE HOSE.—New York N. Y.—Bids are asked by the

throughout this place this summer. FIRE HOSE.-New York, N. Y.-Bids are asked by the fire department until May 11 for furnishing about 43,500 ft. of 1½ to 3½-in. fire hose. Jobn J. Scannell, Comr. DRAINAGE CHANNEL.-Jollet, III.-Bids are soon to he asked by the drainage board for constructing section 18 of the drainage channel; estimated cost, about \$350,000. TELEPHONE SYSTEM.-Chattanooga, Tenn.-Reports state that E. W. Coleman, Columbia, has applied to the council for a franchise to construct a telephone system. REFAIRING WHARF.-St. John, N. B.-The hoard of' works has recommended repairing the North Rhødney wharf to cost about \$2,700. Alderman Christie may be ad-dressed.

a yd. \$2.00 2.00 2.00 ••••

 $\begin{array}{c} 2.08\\ 2.08\\ 2.13\\ 2.10\\ 2.10\\ 2.12\\ 2.15\\ 2.15\\ 2.15\\ 2.15\\ 2.14\\ 2.14\\ 2.14\end{array}$ 

••••

2.19 2.19 2.19 2.19

Bids Received at Gloversville, N. Y., April 26, for Brick Paving. Syracuse, a Brick Mack, a yd. \$1.10<sup>1</sup>/<sub>2</sub> 1.99<sup>1</sup>/<sub>2</sub> 2.03 2.14<sup>1</sup>/<sub>2</sub> 2.08 2.10 2.10 2.10 2.12

Bidder.	Streets.	Park,
[	Bleecker	a yd. \$2.00
A. V. Purnell, Allegheny, Pa	Cburch	2.00
	No. Main	2.00
Strain Bros., Amsterdam, N. Y	Bleecker	*** *
Strain Bros., Amsterdam, N. T	No. Main.	
	Bleecker	2.08
Callanan Road Imp. Co., Alhany, N. Y	Church	2.08
	No. Main	2.13
Frank Pidgeon, Saugerties, N. Y.	Bleecker	2.10
Frank Flugeon, Saugertiea, N. I	Church No. Main	2.10 2.12
	Bleecker.	
A. S. Web, Syracuse, N. Y.	Church	
	No. Main	
Dahan Bankan & Ca. Glovenaville N. V.	Bleecker	2.20
Baker, Banker & Co., Gloversville, N. Y	Church No. Ma'n	2.20 2.20
	AND. MAG He.	6.60

ASPHALT PAVING.—Fort Wayne, Ind.—We are informed that the following hids were received April 25 for 42(0) sq. yds. of asphalt paving in various streets; F. M. Randail, Cy. Engr; Creighton Ave., 3,603 sq yds., 1,125 cu. yds. ex-cavation, 2,543 ft. Berea curb, 12 limesione corners, 174 ft. plank walk, 100 ft. 12-in. pipe sewer, 50 ft. 10-in, sewer, 3 catchhasins, 3 inlets, 1,256½ ft. length of street,24 ft. width: Barber Asphait Paving Co., New York, hid was as follows: Sandsione curbing, a ft. \$5.50, \$7,258; The Columbia Con-struction Co., Toledo, O., \$6, \$7,589; The Alcatraz Co.,

Bids Received at St. Louis, Mo., April 29, for Constructing Sewers in District No. 3.

Quantities.	Hill-O'Meara Construction Co.	Ski	& Co. & Co. McDonald &		H. Wellman & Co.	R. I. Boyd Paving & Construction Co.	Here a	Abbott-Gam- ble Contract- ing Co.	5
Earth excavation 13,000 cu. yds. Rock excavation 500 " " Brick masonry 1,350 " " Pipe laid: 12-in. vit 3,000 lin. ft	\$0.24 3.50 5.45 .50	8.00 3 5.25 5 .50		00 4.00	$     \begin{array}{r}       1.50 \\       5.90 \\       .57     \end{array} $	\$0.32 3.00 5.40 .55 .69	\$0.27 3.50 5.75 .50 .68	\$0.32 3.00 6.00 .65 .70	\$0.25 2.00 5.25 .50
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	.71 .73 1.00 1.48	.73 1.00 1 1.48 1	.72 .10 1. .45 1.	$\begin{array}{cccc} 70 & .80 \\ 00 & 1.10 \\ 30 & 1.40 \end{array}$	.80 .98 1.35	.84 1.30 1.85	$.85 \\ 1.20 \\ 1.60$	$.75 \\ 1.25 \\ 1.50$	.58 .70 .80 1.15
30-in.         360           36-in.         220           unctions         950           picces         950           nlet stones,8         ins. thk 1,296           sq. ft         220	2.57 3.13 .60 .50		.15 3. .60 .	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2.87 .45	$3.15 \\ 4.30 \\ .60 \\ .50$	2.90 3.35 .60 .50	3.00 3.75 1.25 .75	1.89 2.39 .55 .50
sst-iron	.01% .03 9.00	.01%	.01%	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	.021	.01%	i .02 .03 9.00	.02 .04 11.00	.02 .03 8.75
	26,878 \$2	6,008 \$26,	538 \$27,5	28 \$28,194	\$26,921	\$29,146	\$28,636	\$30,839	\$24,536

FOUNDATION STONE.—Cleveland, O.—Bids for the furnishing and placing of stone for the foundation of the extension of the east breakwater were opened April 27 by Col. Jared A. Smith. The specifications called for a maximum of 25,000 tons of rip-rap and 75,000 tons of filing stone, the government guaranteeing to use at least 5,000 tons of 2,000 lhs. each. Bids were requested for the two items separately and for the work as a whole. There were six bidders, of whom James B. Donnelly, Bufalo, N. Y., was the lowest, at 92 cts. a ton for the work as a whole. The next lowest bidder was the Kelley Island Lime & Transport Co. at 97½ cts.

San Francisco, \$4.47, \$5.617. Suttenfield St., 4,487 sq. yds., 2,385 ft. excavation, 3,203 ft. Berea curh, 16 limestone cor-ners, 198 ft. plank, 384 ft. plpe sewer, 4 catchhasins, 2 in-lets, 1 manhole, length of street, 1,570 ft., width 24 ft.: The Barber Asphait Paving Co., \$5.91; The Columbia Co., \$6,16; The Alcatraz Co., \$5.42; total \$8,500. Woodlard Ave., 6,193 sq. yds., 3,543 yds. excavation, 5,123 ft. Berea curb, 30 solid limestone corners, 335 ft. plank, 20 ft. 10 in. Barber Co., \$5.08; Columbia Co., \$5.29; Alcatraz Co., \$4.75. These bids are all per lin. ft. of street complete, based upon the quantities given for each street, and all were awarded

--Setting---b, a Edging, ft, lin, ft, 26 \$40,25 26 255 27 27 27 27 27 27 27 27 27 28 28 28 28 28 28 28 29 28 29 29 20 30 30 30 30 30 30 30 30

 $\begin{array}{c} \textbf{u}, \textbf{yd}, \\ \textbf{x}4.50 \\ \textbf{4.50} \\ \textbf{5.50} \\ \textbf{5.50} \\ \textbf{5.50} \\ \textbf{5.50} \\ \textbf{5.60} \\ \textbf{5.00} \\ \textbf{5.00} \\ \textbf{5.00} \\ \textbf{5.00} \end{array}$ 

2.20
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5.00
.20
.30
STORM TUNNEL.—Cleveland, O.—Ford P. Beers has a contract to construct a storm overflow tunnel, 1,000 ft. long, with a diameter of 12 ft., from Lake Ave. and Detroit St. to Lake Erle.
TELEPHONE SYSTEM.—Minneapolis, Minn.—The Minneapolis, Minn.—The Minneapolis, Minn.—The Minneapolis, Operate a system. Charles Webster and David Jones, of Willmar, are interested.
POST-OF FICE SUPPLIES.—Washington, D. C.—Bids are asked by the post-office department, until May 5, for furnishing a quantity of wire, rivels, burrs, emery, steel, olis, etc., for the year ending july 1, 1899.
TELEPHONE SYSTEM.—Harrisburg, Pa.—The Pennsylvania Telephone Co. will construct and operate a suderground telephone system, under the supervision of the city engineer and highway commissioner.
SURF BOATS.—Washington, D. C.—Bids are asked by the U. S. Life-Saving Service, until May 6, for constructing 15 2:-ft. and six 28-ft. Monomoy surf boats. S. I. Kimhall, Gen. Supt., 24 State St., New York.
RIVER WORK.—Chicago, II.—A contract has been awarded to Leyden & Drew, at \$47,063, for widening the channel of the Chicago River at Diversey Ave., requiring the channel of the Chicago River at Diversey Ave., requiring the channel of the Chicago River at Diversey Ave., requiring the committee, Chairman Rauher, is considering the emertion.

the removal of about 278,000 cu. ft. of earth. TELEPHONE SYSTEM.--Rochester, N. Y.-The council committee, Chairman Rauher, is considering the question of granting a franchise to the Automatic Telephone Co., Buffalo. The system will comprise about 5,000 telephones. CARLES AND ACCESSORIES.-Allegheny, Pa.-Bids are asked by the department of public safety until May 9 for furnishing underground cables and accessories for the fire and police telegraph systems; bond of \$10,000. J. K. Murphy, Dir,

DAM.-Helena, Mont.-Reports state that McNamara & Marlow are preparing to construct a dam across Big Sandy Creek, six miles below this place. It will contain 8,000 cu. yda. of material; length, 500 ft. D. P. Mumbrue, Engr., Helena.

PARK-Indianapolis, Ind.-It is reported that about 100 acres of land will be purchased, bordering on North Me-ridian St., for a park. The following are interested: John P. Pearson, A. P. Hendrickaon, M. B. Wilson, M. V. Me-Gilliard and others.

DREDGING.--New York, N. Y.-Bids are asked by the department of docks, Pier A. North River, until May 13, for dredging at the foot of Barclay St, and of Park Piace, North River; estimated amount, about 45,500 cu. yds. J. Sergeant Cram, Comr.

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PONTOON WORK.--New York, N. Y.--Bids are asked by the department of buildings and supplies, 346 Broadway, until May 12, for repairing and constructing bridges, etc., for the free floating baths, and furnishing pumps, signal lamps, etc. Henry S. Kearny, Comr.

for the free noating baths, and furnishing pumps, signal lamps, etc. Henry S. Kearny, Conr. CANAL AND DAMS.-Boston, Mass.-A contract was awarded by the Electrolytic Marine Salits Co., Boston, Mass., April 22, to R. D. Sbanahan, Portland, Me., for constructing two dama and a canal, as advertised in Engineering News. Geo. A. Merrill, Engr. CANAL.-Annapolis, Md.-The Baltimore, Curtis Bay & Annapolis Canal & Navigation Co. bas been incorporated by Eilitu S. Riley, Pres.; Walter H. Cronin, Sccy. to construct a canal 4½ miles long, from the Severn River to Curtis Bay. E. Lacy Chinn, C. E., has been directed to prepare plans and estimates. MACHINERY.-Bangalore, India.-Reports state that S. R. Best & Co., proprietors of the Universal Agency, Bangalore, India, Seckino, specifications, prices, etc., for electrical machinery, woodworking machinery, paper milis, corr milis, cigarette machinery.

corn mills, cigarette machinery. machinery, paper mills, FIRE ENGINES, TRUCKS, ETC.-New York, N. Y.--Bids are asked by the fire department until May 11 for supplying the following: Two fourb-size steam fire engines, with Amoskeag pumps and bollers; two third and two sec-ond size and one "dederick" b5-th took and ladder trucks; two first size hose wagons; one champion Bahcock and one hollow double tank chemical engines. John J. Scannell, Conr.

TENDERS AND PILE SINKERS.—St. Louis, Mo.—The following bids were received April 4 for furnishing four pile sinkers and three steam tenders, as advertised in Engineering News. Capt. H. E. Waterman, U. S. Engr.,

2,100

Awarded contracts; 'Jeffersonville, ind.; 'Cincinnati. 0.;
 Springfield, Ill.

# ENGINEERING MATERIAL PRICES.

TRACK MATERIALS-New York-Angle bars, 1.05 eta. to 1.10 ets.; spikes, 1.40 ets. to 1.50 ets.; track bolts, bexagonal, 1.80 ets. to 1.85 ets.; square, 1.60 ets. to 1.75 ets.
Chicago-Angle bars, 1.15 ets. to 1.25 ets.; spikes, 1.50 ets. to 1.60 ets.; track bolts, hexagonal, 1.90 ets. to 2.00 ets.; square, 1.80 to 1.90 ets.

RAILS,

, STEEL-York, new, \$18.00 to \$18.50; old iron, \$12.00 to .50.

\$12.50. Chicago, new, \$20.00 to \$22.50; old iron, \$11.50 to \$12.00; steel, \$5.00 to \$5.50. Pittshurg, new, \$18.00 to \$19.00; old iron, \$12.50 to \$13.50; steel, \$10.25 to \$10.50.

steel, 810.25 to 810.60, STRUCTURAL STEEL-New York-Beams, 1.30 cts. to 1.35 cts.; channels, 1.30 cts. to 1.35 cts.; tees, 1.35 cts. to 1.40 cts.; angles, 1.15 cts. to 1.20 cts.; plates, 1.20 cts. to 1.25 cts.; rivets, iron, 2.25 cts. to 2.50 cts.; steel, 1.75 cts. to 1.85 cts.; universal mill plates, 1.15 cts. to 1.20 cts.; tank, 1.25 cts. to 1.30 cts.; shell, 1.30 cts. to 1.40 cts.; fange, 1.60 cts. to 1.75 cts.; firebox, 2.25 cts. to 2.50 cts.

Chicago-Beams, 1.30 cts. to 1.45 cts; : channels, 1.30 cts. to 1.45 cts; : tees, 1.35 cts. to 1.45 cts; : channels, 1.30 cts. to 1.45 cts; : tees, 1.35 cts. to 1.50 cts; : angles, 1.20 cts. to 1.30 cts. : universal mill plates, 1.25 cts. to 1.30 cts; fank, 1.10 cts. to 1.20 cts; : shell, 1.45 cts. to 1.55 cts.; flanke, 1.20 cts. to 1.40 cts.; firebox, 1.70 cts. to 2.00 cts.

Pittsburg-Beams, 1.15 cts. to 1.25 cts.; channels, 1.15 cts. to 1.25 cts.; tees, 1.15 cts. to 1.20 cts.; angles, 1.00 ct. to 1.15 cts.; universal mill plates, 1.06 cts. to 1.15 cts.; tank, 1.00 ct. to 1.10 cts.; sbell, 1.15 cts fauge, 1.10 cts. to 1.20 cts.; firebox, 1.50 cts. to 2.75

MERCHANT STEEL-Machinery, per ih., 1.60 cts. to 1.65 cts. Cast, hest iu smail iots, per lh., 5.50 cts. to 7 cts. Sheet, per lb., 8.5 cts.

DN-Mg Iron: New York, No. 1, \$11.00 to \$11.50; No. 2, \$10.50 to Chicago, No. 1, \$11.50 to \$12.50; No. 2, \$11.00 to \$12.00. ittsburg, No. 1, \$10.40 to \$10.50; No. 2, \$9.90 to \$10.00. P

Bar Iron: New York, common, 1.07½ cts. to 1.10 cts.; refined, 1.15 cts, to 1.20 cts. Chicago, common, 1.05 cts, to 1.15 cts.; refined 1.10 cts. to 1.20 cts.

Sh ets

American, per lh., 4 cts. to 41/2 cts. Russia, per lh., 101/2 cts. to 111/2 cts.

LUMBER-

UMBER— New York: Hemiock timher, 20 ft. and under, per M, \$12.00 to \$12.50. Piling, Eastern spruce, 35 to 40 ft., 30 to 40% 12-in. butts, 4½ ets. to 4½ ets. Spruce, special cargoes, per M, \$15.00 to \$17.50. Yeliow pine, random cargoes, \$14.50 to \$17.00. North Carolina pine, \$2.25 to \$2.40 advance over Nor-folk rates.

foik rates.

San Francisco:

Oregon pine, per M, \$15.50 to \$17.50. Itedwood, per M, \$17.00 to \$19.00. Redwood tank stock, up to 10 ft., \$21.00 to \$24.00.

Redwood tank stock, up to 10 ft., \$21.00 to \$24.00. GENERAL MATERIALS-Lead, New York, 3.50 cts. to 3.60 cts. Nails, Pittsburg, 1.40 cts. Solder, per lh., 9 cts. to 11½ cts. Spelter, per lh., 3.00 cts. to 4.25 cts. Copper, ingots, 11.58 cts. to 12.00 cts. Granite, rough, New York, cu. ft., 40 cts. to 50 cts. Limestone, New York, cu. ft., 55 cts. to 90 cts. Slate, Penn. block, per square, \$4.00 to \$5.00. White lead, American, per lh., 5% cts. to 50 cts. Lime, coumon state, per bbl., 70 cts.

# INDUSTRIAL NOTES.

MAIRS & LEWIS, general contractors, have removed their offices from the Wells Bldg., 18 Brosdway, to the Hudson Bldg., 32 Broadway, New York.

THE PETERSBURG IRON WORKS CO., Petersburg, Va., received a contract, April 28, for furnisbing 1,400 water meter boxes to the city of Richmond, Vs., according to record

THE UNION CAR CO., Depew, N. Y., is reported to have a contract from the Lehigh Valley R. R. for 250 box cars, in addition to 1,250 aiready under construction for that

POST & McCORD, contractors for steel and iron construc-tion, have removed their main offices from 289 Fourth Ave., New York, to their works at Clay St. and Paidge Ave., Brookiyn.

THE E. P. ALLIS CO., Milwaukee, Wis., is reported to ave the contract to build four power engines of an sggre-ale capacity of 7,000 HP. for the Milwaukee Electric Ry. & Light Co.

& Light Co. MR. CHAS. W. HALL, New York agent for the Steel Portiand Cement, manufactured by the Iilinoia Steel Co., Chicago, has removed his office from 27 William St. to the Havemeyer Bidg., 26 Cortiandt St. THE ALCATRAZ CO., San Francisco, Cal., manufac-turers of Alcatraz asphali reservoir cement, has removed its general Eastern offices from 57 East 50th St. to the Ban-croft Bidg., 3 West 29th St., New York. THE AMERICAN MOTOR CO.

croft Bidg., 3 West 29th St., New York. THE AMERICAN MOTOR CO., has removed its off.ces from 116 Havemeyer Bidg., 26 Cortiandt St., to the Hudson Bidg., 32 Broadway, New York. Mr. Albert T. Oito, of the firm of Biount & Otto, gas engine manufacturers, at the same address, is the President of the company. THE BALDWIN LOCOMOTIVE WORKS, Philadelphia, is reported to bave the contract to build a six-wheel passen-gen locomotive for an English railway recently built from Barnstable to Linton. It is said that this is the first loco-motive to be huilt in America for use on an English railway.

THE THOMSON METER CO., 79 to S3 Washington St., Brooklyn, N. Y., reports the sale of 12,004 meters in the past eight months. April 24, 1898, meter No. 112,004 was sold and stamped; this is an average of over 1,500 a month. Of 5,303 meters in use in Detroit, up to 1898, no less than 5,146 are said to be of the Thomson type. THE A. & P. ROBERTS CO., Philadelphia, at a meeting held April 26, elected the following officers: President, Mr. Percival Roherts, Jr.; First Vice-President, Mr. P. W. Roherts; Second Vice-President, Mr. Frederick Snare, and Secretary and Treasurer, Mr., Snare's headquarters will be at 100 Broadway, New York, as beretofore. THE WESTERN CAMERA CO., 135 Wabash Aye, Chi-

at 100 Broadway, New York, as beretofore. THE WESTERN CAMERA CO., 135 Wabash Ave., Chi-cago, has introduced a new type of camera known as the "Cyclone Magazine," the special feature being that it will take 12 pictures in 12 seconds on glass piates without re-loading. The company manufactures nine different styles of cameras, and during 1887, over 38,000 "Cyclone" cam-eras were manufactured and sold by it. A full line of pho-cameras, is carried in stock.

cameras, is carried in stock. THE WEBER GAS & GASOLINE ENGINE CO., Kansas City, Mo., reports the following sales of gasoline bolsting engines during the weck ending April 23: One 10-HP, single drum geared engine, Cornucopia Mines of Oregon; one 23-HP, double drum geared engine, to be used underground, hoisting from slope, La Aurifera Mine, Monterey, Mex.; one 10-HP, single drum geared engine, Bolse City, Idaho, and one 10-HP, single drum geared engine, Denver, Colo. It also shipped to the Copper Queen Mining Co., Globe, Ariz, one 10-HP, single drum geared gasoline hoisting en-gine. THE NEW YORK

gine. THE NEW YORK FINANCE & CONSTRUCTION CO., 141 Broadway, New York, contractors for electric, steam and hydraulic plants, is constructing a bydraulic and steam plant at Fort Hancock, Sandy Hook, N. J., for the United States government, for which the company desires machinery: The steam and electric plant, Fort Wasbington, Md.; the engine installation and lighting plant, P.um Island fortifications, Long Island Sound, and the complete generating and piping installation in the post office, Pitts-burg, Pa.

burg, Pa. THE WESTINGHOUSE ELECTRIC & MFG. CO., Pitts-burg, has installed over 100,000 HP, of polyphase gener-ators within the past three years, ranging in size from 10 to 5,000 HP. each. Judging from the orders at present on hand, the company will build more than 100,000 HP, of this type alone during the coming year. A single order now on band calls for 75,000 HP. Polyphase motors have also been made, ranging from 1 to 500 HP, two of the latter being for the Niagara Faila Electric Light & Power Co., to be utilized for driving the dynamos which light the town; power being supplied by 5,000-HP. Westinghouse Niagara generators

generators. THE FILER & STOWELL CO., Milwaukee, Wis., advises our representative that it is busy at present in all depart-ments, and among other contracts on hand has the follow-ing: An 800-HP, tandem engine direct-connected to gener-ators, Biuff City St, Ry, Co.; an 800-HP, engine, Warren, Pa., Electric Light Co.; a 500-HP, engine, Warren, Pa., Electric Light Co.; a 500-HP, engine, Warren, Finder, Co.; a 500-HP, engine, Warren, Finder, Co.; a 500-HP, engine, Warren, Numeriy-Ciark Co., Neenah, Wis., this heing the fourth engine purchased from the company; two 20x 42-in. single cylinder engines, Worcester (Mass.) & Clinton St. Ry, Co.; a 24 x 48-in. single cylinder engine, Home Electric Co., Ba-ton Rouge, La.; a three-stage vertical gas compressor, W, J. Lemp Brewing Co., St. Louis, Mo.; and a three-stage compressor, Liquid Carbonic Acid Mig. Co., New York, In which the gas is to be compressed to 1,500 hb, pressure. THE NAZAPETW POPETLAND CEMENT CO. Nazareth

which the gas is to be compressed to 1,500 lbs. pressure. THE NAZARETH PORTLAND CEMENT CO., Nazareth, Pa., has heen incorporated with \$300,000 authorized capital. Seven 60-ft, rotary klins will be installed, together with a 700-HP, engine, a battery of vertical bollers, in which the waste heat from the klin stacks will be utilized, and a full complement of approved crushing, grinding, drying and pulverizing machinery. The property comprises 170 acres of cement rock and limestone, the deposit lying midway he-tween the Atias and the Alpha works is said to be practic-ably inexhaustihle, and exceptionally fine for the manufac-ture of the modern high-limed Portland cement. The company are: President, Jas. P. Barnes; Vice-President and Gen. Mgr. Irving A. Bachman; Secretary and Treas-urer, Edgar T. Beiden. THE KENWOOD BRIDGE CO., First National Bank

urer, Edgar T. Beiden. THE KENWOOD BRIDGE CO., First National Bank Bidg., Chicago. has recently designed and completed 253 trusses, with the necessary beams, columns, etc., for the W. B. Conkey Printing Co.'s new building. Hammond, Ind., a total of 400 tons, in 48 days; Mr. Geo. C. Nimmons, Chi-cago, is the srchitect. The company has also the con-tract for furnishing sall the structural steel work for the new train shed of the Chicago, Burlington & Quincy Ry.

tation, Omaha, Neb. 1: also furnished the statel with for the station proper, and built a 110-ft. value: contrast strategy fit again arch for the Noter of Nutry of Nutry State Strategy fit again arch for the Noter of Nutry State Strategy in the strategy fit again arch for the Noter of Nutry State Strategy in the strategy fit again arch for the Noter of Nutry State Strategy in the strategy in

bragger, J. W. Antoini and W. Chicago, Ill.; \$2,003,003, com-mencing with \$50; to manufacture and sell machinery for the manufacture of gas for heating and illuminating pur-poses, etc.; Wum. S. Hine, J. B. Wallace, E. L. Barr, J. F. Leake and J. C. F. Bradley, all of Chicago.

- ALL THE PROMINENT MANUFACTURERS READ ENGINEERING NEWS. DO YOU WANT TO PURCHASE SUPPLIES? -

ADVERTISE FOR BIDS IN THIS PAPER AND SECURE DESIRABLE COMPETITION.

