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INDUSTRIAL

Chicago and Vicinity.

The Crane Company of Chicago is said to have secured a controlling interest in the Milner & Kittig Hardward Company of Birmingham, Ala., which does \$1,000,000 of business a year. It is understood that the price paid for the stock was \$120,000.

The Hovland-Payson Company are incorporated with a capital of \$5,000; manufacturing hardware specialties; incorporators, Jacob S. Hovland, Joseph R. Payson, Jr., and John R. Bierma.

Indications are, says the Calumet Record, that South Chicago will have some fine new rolling mills in the near future, mills large enough to employ at the beginning from 3,000 to 5,000 men. The agents of eastern capitalists have been in almost daily conference for the past two weeks with J. B. Brown, owner of about 2,000 feet of the finest Calumet dockage and forty acres of land running from the south end of the Chicago Shipbuilding Company's plant to One Hundred and Sixth street. Considerable adjoining property can be bought reasonably, so that mills will not lack room to grow. If the deal goes through, work on the buildings will be begun in the spring.

The Ecker Pressing Machine Company are incorporated; capital, \$12,000; object, manufacturing machinery and hardware; incorporators, Jacob Ecker, Louis Ecker and William Zoeller.

It is the present plan of the Illinois Steel Company to resume work on Jan. 2 in the rail and steel mills, which have been shut down for four weeks.

The Interstate Iron and Steel Company are incorporated with a capital of \$400,000, for the purpose of manufacturing iron and other metals; incorporators, Benjamin B. Morris, H. M. Goldsmith and N. D. Levy.

The Chicago Hardware Foundry Company has increased its capital from \$65,000 to \$250,000.

Sears, Roebuck & Co. have bought the Meriden Malleable Iron Company at Meriden, Conn., and will maintain the plant, which employs 1,000 hands, for the manufacture of firearms. News of the transfer was telegraphed to Chicago Friday night of last week, and President Richard W. Sears confirmed the reported purchase. "The acquiring of the Meriden plant," said Mr. Sears, "does not mean any change in our firm's policies or management. It practically is nothing more than a transference of our firearm manufacturing enterprise from the present establishment at Hopkinson, Mass." Albert Butler, who has bought out the other owners and is now sole proprietor, declared that he would sell for \$30,000. The company offered \$20,000. The matter was in this shape when the Meriden board of trade decided to take things up for the benefit of the city. A special meeting was called. It was decided that the board of trade members would get out among the enterprising citizens of Meriden and try to make up the difference. They appointed committees to see people in various lines of business, some to see the manufacturers, others the business men, and inside of twenty-four hours, or thereabouts, the hustling Meridenites had secured pledges of \$8,000 towards the difference between the two figures. Then Mr. Butler came to the rescue and offered to throw off the balance and an agreement was reached. The plant of the Meriden Malleable Iron Company was erected in 1868 to accommodate the business of Lyon, Augur & Co. A joint stock company, capitalized at \$75,000, was organized under the name of the Meriden Malleable Iron Company, and this was afterwards increased to \$120,000. The business increased, new departments were added, additions to the plant constructed, including a rolling mill, foundry, office building, shipping rooms and store rooms. At the height of their prosperity 350 hands were given daily employment. Some five or six years ago the company, which had branched out into a great many lines, began to get cramped for ready money. This resulted disastrously and the plant was closed down. The Connecticut Telephone & Electric Company secured a portion of the building for a factory and the M. B. Schenck Company used the foundry for a while. For a year or more it has been idle.

Western.

The Eclipse Boat Company has erected a boat factory at Two Rivers, Wis. The concern has been incorporated and its officers are Samuel W. Randolph, president; William E. Kawalle, vice-president; Michael J. Auermueller, treasurer. The company will build gasoline boats and other kinds of small craft.

The Marine Boiler Works Company, Toledo, O.; capital, \$125,000; incorporated by Richard Reeves, C. A. Leeper, H. N. Leeper, D. C. Shaw and Charles R. Clapp.

Charles M. Schwab was in Elyria, O., last week, and it is reported that his presence there was in connection with a deal whereby he may become owner of the Columbia rolling mill, which is the property of the Federal Manufacturing Company of that city.

Articles of incorporation for the "I. X. L." Manufacturing Company, which has its offices in the Naylor-Cox building,

Terre Haute, Ind., are filed. The company is capitalized at \$100,000 and is organized for the purpose of manufacturing vapor-burners and stoves, motor power churns, vehicles and shaft fastenings. The company is comprised of Marcus Dyer, Ira D. Andrews, Leonard D. Scott and William T. Littlefield. The company will operate in Terre Haute and dispose of patent right districts throughout Indiana and Illinois.

There is considerable talk in Anderson, Ind., that the Big Four is to buy the Gould steel mill in that city. The products are car couplers, drawbars and other car castings, and the contemplated deal includes plans for enlarging the mills for general foundry purposes for the Big Four. Officials of the company have inspected the plant, but so far have not made public a statement of the negotiations.

At an election held at Decatur, Ind., last week, for voting a subsidy of \$28,000 to secure the Clover Leaf shops for the city, which are now located at Delphos, O., the vote stood 1,210 for and only 59 against. This is said to assure the Clover Leaf shops, icing plants, round house, dispatcher's office and other railroad works.

Articles of incorporation have been filed at Sioux City, Ia., for the Acme Manufacturing Company, a concern with \$6,000 capital. The incorporators are H. T. Blair, J. D. Smith, L. A. Sturms, N. J. Rowe and E. M. Corbett. The place of business is to be Sioux City. The purpose of the company is to manufacture a tire bolt wrench and a wheel stand. The idea of the two articles is to facilitate work on tires on all kinds of wheels. H. T. Blair will be manager.

The Peru Steel Casting Company, Peru, Ind., sustained a loss of \$200,000 last week in the destruction by fire of its immense plant, on a twenty-five-acre tract, a mile west of the city limits. The plant was rated as the biggest and best equipped casting mill in Indiana, and comprised five large buildings, one 600 feet long and 80 feet wide, and nine small structures. Only four little buildings and the walls of the large structure are left standing. The mills had been closed for some time, and consequently the fire-fighting apparatus was unavailable. The city water mains do not extend to the plant, and it was useless for the city fire department to go to the scene. A chemical engine was brought from Logansport on a special interurban car, but the fire had gained too much headway, and the engine could not be used to any advantage. The fire started in a box car containing goods belonging to the daughters of Mr. and Mrs. Joseph Parker, who had prepared to join their parents in Knoxville, Tenn. The car had been sidetracked on the north side of the steel mills, and the fire spread to the shipping department building, which was soon enveloped. The big building used as a casting department and for the machine shop, engine and boiler room followed in quick succession. Charles Eastman, manager of the plant, says that the insurance recently expired and it had not been renewed. There is not much hope that the big plant will be rebuilt. The Peru Steel Casting Company was organized in 1901, with Philip Matter, of Marion, as president, and G. A. Swartwout, of Peru, general manager. The capital stock originally was \$250,000, but later it was raised to \$600,000. The company manufactured car couplers and other railroad castings. The business grew and in less than a year 600 men were employed. Two years ago there was a change in the management. The company of late has made no noticeable effort to reopen the mills, although the Commercial Club of this city made two attempts to organize a company to lease the plant and put it into operation. The last time the project was considered was but a few months ago, when Chicago parties looked over the plant and made a proposition to the steel casting company, which refused to accept the offer.

The town of Jackson, O., is elated. It has received news that the new shops of the Detroit Southern Railroad system are to be built within its boundaries. The shops will be comparatively large, and the promise is made by Receiver Samuel Hunt that when completed they will give employment to at least 500 men. It is expected that work on the new shops will begin in the early spring, and that by this time next year some, at least, of the buildings will be occupied. There had been a spirited rivalry for the shops among the various towns along the line of the Detroit Southern, but the principal fight was between Springfield, where the present shops of the system are located, and Jackson. Under the terms of the agreement the town of Jackson is to raise a sum approximating \$28,000. This sum is to be used in the purchase of land to be donated for a site for the shops, and also as a bonus in cash. According to Jackson papers it is thought that there will be little trouble in raising the money, most of it in fact having already been subscribed.

The foundry plant at Edison, O., has lately been opened for business after being idle a long time. There is plenty of work on hand, and it is believed the institution under judicious management can be made to do a profitable business. The work now is mainly in making plow points.

The Buckeye Wheel Company of Columbus, O., capitalized at \$150,000, was incorporated last week. The incorporators are J. W. White, Edward Flickinger, Frank Flickinger, J.

Keene and W. S. Morris. The company will manufacture wheels for vehicles.

The Cosey Barb Wire Reel Company, Colfax, Ind., is incorporated; capital, \$10,000; manufacturing wire reels and farm implements. Incorporators, Henry M. Cosey, Gerhardt M. Cassens and Jonathan Frantz.

The Detroit Seamless Steel Tube Company, Detroit, Mich., has received a large order for tubes from the government to be sent to the Charlestown navy yard. Three contracts have been closed recently for 15,000 locomotive boiler tubes.

The Sheet Metal Recovery Company, operating a plant near New York city, has written to the board of public works at Milwaukee, Wis., expressing a desire to locate a branch plant there for the reduction of old tin cans. The company wishes to know if cans are kept separate from garbage and ashes there, and if it would be possible for it to get a contract for a steady supply. At present cans are thrown in with the ashes, but the board would welcome such a plant as that suggested, as the company would maintain its own collection system.

There is talk that the rolling mill of the American Rolling Mill Company at Muncie, Ind., may be removed to Chicago.

The George Rich Manufacturing Company of Chicago has decided to erect a plant for the manufacture of steel drills at Buchanan, Mich.

The Bass foundry, Fort Wayne, Ind., has again increased the capacity of the car wheel department and has begun turning out 600 wheels a day. The business has been so great that the company has been unable to keep up with it. The recent disposal of the Chicago foundry is resulting in heavier demands upon the Fort Wayne plant.

"Toledo has a splendid opportunity to get another big industry," said C. H. Wilcox, of that city, in a recent interview, "and I believe that if the matter is handled in the right way by the Chamber of Commerce the industry in question can be brought here. The Detroit Seamless Steel Tube Co. has outgrown its present location and must seek quarters elsewhere, and I have been informed on reliable authority that they contemplate moving away from the City of the Straits. Now, what's wrong with bringing them to Toledo and locating them in the factory building of the American Weldless Steel Tube Co. out on Dorr street? This factory has been vacant ever since the absorption of the American Weldless Steel Tube Co. by the Shelby Tube Co., and it has a capacity of fifty tons per day. The reason the Detroit people wish to make a change is because their present plant has a capacity of but ten tons per day and it cannot be enlarged. The Toledo factory would be just the place for them, and I understand that it is for sale."

The Frank Tilk Ornamental Iron Work Company, of Kansas City, Mo., are incorporated with a capital stock of \$6,000, by Frank Tilk, A. W. Childs, T. G. Schweiger and others.

F. J. Semple, sales manager of the Simmons Hardware Company, was at Wichita, Kan., recently, looking over the field covered by Wichita as a jobbing center, for the purpose of making a report to the company concerning the advisability of locating a branch house in that city. The Simmons Hardware Company has definitely decided to locate a branch house some place in the west. There are several cities in the west that are after the house.

The C. I. Johnson Manufacturing Company, St. Paul, Minn., has incorporated to manufacture and sell printers' machinery and supplies. It has a capital stock of \$30,000, and the incorporators are Charles I. Johnson, Wilfred T. Johnson, Charles Johnson and Edward C. Johnson.

Sealed proposals will be received at the office of the supervising architect, treasury department, Washington, D. C., until February 7, 1905, for the construction complete of the United States postoffice at Nevada, Mo.

Frank E. Beard, trustee of the Steel and Screw Works of Port Huron, Mich., has sold the property to E. W. Wilson, of the Port Huron Saw Works, for \$9,000, subject to a \$4,000 lien on the building. The liabilities of the Steel and Screw Works reach over \$200,000 and the appraised value \$24,000. The business will be reorganized.

A new entry into the electrical manufacturing field is the Williams Electric Machine Company, of Akron, O. The company is said to be financed by some of the best known and strongest financial interests of that city. This company is placing on the market a full line of electric clutches and electric stopping or safety devices to be used in stopping machinery in case of accident to the operator. These clutches, etc., are the invention of Harry Williams, who is the general manager of the company. This concern is also placing on the market a full line of electrical apparatus both alternating and direct current generators, motors, controllers, switchboards, etc., and also undertake the installation of complete transmission plants embracing clutches, safety devices, generators, engines, motors, switchboards, lineshafting and hangers, pulleys, etc., making a specialty of equipping plants complete all ready for operation.

The Davenport Locomotive Works, Davenport, Ia., has let the contract for the erection of a boiler shop, 68x150 feet in dimensions, work on which is to begin at once and be pushed to completion within ninety days. Within the same space

of time a paint shop will also have been erected and a new warehouse 68x108 feet is now undergoing the finishing touches. The present office building will also be enlarged and other improvements made at the plant. The new boiler shop will be erected south of the present erecting plant. It will be of steel and glass construction, 50 feet in height, and will have a capacity of one complete boiler a day. It will be equipped with improved hydraulic and pneumatic machinery, costing over \$30,000. Electric cranes will be installed capable of swinging the largest boiler to any part of the shop.

The John Lauer Machine Company, Detroit, Mich., capital paid in \$50,000, has filed articles of incorporation. The stockholders are John Lauer, Wm. J. Ashton, John P. Lauer and Peter N. Lauer.

After six months of idleness, the Michigan Iron Company's blast furnace at Newberry, Mich., a charcoal iron plant, is slated to resume operations on Jan. 15.

The Shelby Stove & Manufacturing Company, Shelby, O., has made an assignment in probate court to A. B. Mabey. The deed of assignment is signed by A. W. Gump, president, and Frank L. Smith, secretary. The personal property is valued at \$9,500 and the real estate at \$5,500. The assignee gave bond in the sum of \$30,000 with the United States Fidelity & Guarantee Company of Baltimore, Md., as surety. It is stated that the company has been employing about 60 hands at various times and was doing quite a business.

The plant of the Flickinger Wheel Company at Gallon, O., which some months ago was closed down owing to financial troubles growing out of the failure of a bank there, is to be started again. The property has been purchased by John W. White, president of the White National Bank, of Fort Wayne, an old wheel manufacturer and personal friend of E. Flickinger. The new company will be known as the Buckeye Wheel Company. Mr. Flickinger will be its manager and his son Frank will be in charge of the factory as superintendent. The organization of the new company is being perfected and the company will be ready to start the wheels early in the new year.

A large engine factory is promised Milwaukee in the plant which is now being planned by the White Gas Engine Company, owners of the American and foreign patents on the Waite explosive gas engine. The first engine has been set up by the inventor, H. C. Waite, and is now in operation, furnishing power required to run a machine shop. A stock company is to be incorporated soon at Madison under the laws of Wisconsin to finance the plant, which will be located at Milwaukee. Engineering capitalists have examined the engines and are willing to furnish the necessary backing.

Eastern.

Wick Bros., of Pittsburg, have been given the contract to erect an addition, 70x100 feet to the plant of the Allegheny Iron & Steel Company, at Breckenridge, Pa. Work must be completed within eight weeks. The addition is to the open-hearth department and when this, with other improvements that are under way, is completed, work will be given to 1,000 skilled men. The plant now covers nearly 10 acres. Capt. Alfred Hicks is president of the company.

The Hygienic Floor Machine Company, of Utica, N. Y., filed papers of incorporation with the secretary of state. The directors are Herbert C. Sholes, William L. Foley and G. William Goodier of Utica, and Henry H. Victory, of Whitesboro, and the capital stock is \$5,000. The purpose of the concern is to manufacture and sell a device that has been invented by Mr. Goodier, one of the directors, and who is also armorer at the state armory. The device is intended for use in cleaning polished and tiled floors. The machine is to be made in three sizes, one sixteen inches wide, for house use, and two others for use in large halls. The largest machine will be thirty-six inches wide.

The Thomas D. West Foundry Company, Sharon, Pa., is granted a Pennsylvania state charter with a nominal capital of \$5,000. The incorporators are G. H. Boyd, Thomas D. West and Ida Boyd. The company will manufacture steel castings and machinery.

The Jansen Iron Company has decided to move their plant at Oxford, N. J., employing 800 hands, to Columbia, Pa. The company now has a plant at Columbia.

The Empire Iron & Metal Company, Millbrook, N. Y., are incorporated to deal in lead, zinc, etc.; capital, \$80,000. Incorporators: J. H. Purnell, L. B. Purnell, H. H. Hubner, Baltimore.

A certificate of incorporation was issued at Washington, D. C., last week to the International Iron & Steel Company, with a capital of \$100,000,000. The incorporators are Dr. J. H. Walker, of New York, and George T. Walker and E. F. Walker, of Washington. The object of the company is stated as the carrying on of a general iron and steel manufacturing business.

The Livingston Manufacturing Company, Camden, Me., manufacturer of stone cutting tools, will build a substantial addition to its plant in the spring.

St. John, N. B., is soon to have a new industry. The McAdamite Metal Company, which is operating a large factory at Staten Island, New York, will soon commence manufactur-

ing the metal in St. John. The company own a factory on Queen street, which is already partially equipped with machinery which was put in at the time the company was organized. A complete plant will be at once installed, and before many months the factory will be in full operation. The company is under the control of the New Brunswick interest and has undergone a partial reorganization lately.

The old plant of the Lewis Foundry & Machine Company, Pittsburg, Pa., has been sold to De Noon Bros., who expect to turn it into a large paint factory. Plans have been made for the alterations of the buildings and work will be started immediately.

Fire last week consumed the annex of the Bradley Car Manufactory, near the Union railroad station at Worcester, Mass. The building was about 40x80 feet and contained considerable lumber and finishing used in car building. The loss is estimated at about \$10,000.

David Geiser & Weand, Pottstown, Pa., have received the contract for the construction of a new building for the Light Manufacturing Foundry Company. T. J. Strohl will have charge.

The H. D. Crippen Manufacturing Company, New York, are incorporated to manufacture mining machinery; capital, \$50,000. Incorporators and directors for the first year: S. C. Worthen, M. H. Cane, New York; F. Batterton, Brooklyn.

It is reported that the Waterville repair shop situated on Charles street, Augusta, Me., which has been owned and conducted by A. R. Farnham, has been bought by J. H. Blaisdell, of Oakland, for the manufacture of the Blaisdell screen plate holder. This machine shop will contain all the equipments necessary for the extensive manufacture of this particular article, such as lathes, a planing machine, milling machine, an upright drill for iron work, etc.

The Holmes Foundry Company, Gardiner, Me., is considering plans for the construction of a foundry and machine shop, to be equipped with all modern machinery.

The Stanley Electric Manufacturing Company, Pittsfield, Mass., have received from the Consolidated Gas & Electric Corporation of San Francisco, Cal., a contract for approximately \$100,000 worth of machinery. The contract is for four of the largest generators turned out by the company, special switchboards and all other necessary equipment. The generators are to have a combined power of 16,000 kilowatts and the contract calls for the delivery and setting up all machinery in early spring, which will necessitate immediate addition to the working force to rush the order and other smaller orders which are arriving daily.

The Pittsburg Coal Company, says a Pittsburg dispatch, has awarded a contract for \$2,000,000 worth of steel cars.

The Howard-Bullough American Machine Company, Pawtucket, R. I., one of the largest plants for the manufacture of cotton machinery in the country, posted notices that work would be resumed on the old working schedule. For more than a year the plant has been run 45 hours a week.

Southern.

The Dover Furnace Company, of Montgomery county, Tenn., capitalized at \$12,000, is incorporated by Graham McFarlan, K. C. Atkinson, S. F. Forde, H. N. Leech and W. M. Ponder.

Another attempt was made Friday night last week to blow up the Newport Foundry & Machine Company's plant at Newport, Ky., when the entire building was shaken by a terrific explosion of dynamite. The dynamite was dropped near a fence and consequently little damage was done, but the explosion was heard all over the city.

Elwood, Ind., managers report that the Ames Shovel & Tool Company is organizing a colony to go to Paris, Tex., to establish a handle factory. The high price of timber in Indiana is responsible for the contemplated removal.

Jackson & Edwards are erecting a large building next to J. A. Brooker's blacksmith shop in West Green Cove, Fla. These gentlemen will make a specialty of making turpentine tools. The new firm will be known as the Turpentine Tool Manufacturing Company. Mr. Blake will be in charge of the factory.

The Bristol Iron furnace, Bristol, Tenn., went into blast last week. The furnace has a capacity of 175 tons, and it is estimated that it will yield daily an average of 150 tons of pig iron. O. B. Newton, a brother of the vice-president, has been made treasurer of the furnace.

Work is progressing rapidly on the new rolling mill and nut and bolt works at Fort Worth, Tex. Negotiations are now pending for the machinery and it is expected that the buildings will be ready for it within the next three months.

More than 80,000 stoves were sold by Nashville, Tenn., foundries during 1904. This represents a money value of \$1,100,000. This industry has had a very pleasing year and a large increase is noted. Many northern states buy largely of Nashville-made stoves.

The Hardie-Tynes Manufacturing Company, of Birmingham, Ala., has been awarded the contract to furnish Montgomery, Ala., with an air compressor of the condensing engine type. The price is \$9,840. The Herron Pump & Foundry Company, of Chattanooga, were the successful bidders for gate valves and screw valve boxes. This is a large contract, amounting to about \$15,000 or \$20,000.

Application has been made for a charter for the Southern Skein & Foundry Company, with a capital stock of \$100,000. The incorporators are James K. Jones, John G. Johnson, G. N. Prentiss, Harry L. Probasco, and Frank A. Nelson. The stock will be held by these parties and their friends in the east. The business of the company will be the manufacture of cast and steel wagon skeins, heavy hardware, etc. A site, consisting of sixteen acres, has been purchased, and buildings will be begun as soon as plans can be made. The Southern Skein & Foundry Company will have the following competitors: Illinois Iron & Bolt Company, Carpentersville, Ill.; Studebaker Bros. Mfg. Company, South Bend, Ind.; American Skein & Foundry Company, Racine, Wis. These concerns all being located in the north cannot, it is said, compete with the Southern Company south of the Ohio river, while the Southern Company, on account of certain advantages, can deliver skeins in Chicago and St. Louis. It is estimated that there is a business in this line in the south of fifty tons per day. There is no wagon company, either north or south, that will own a share of stock in the Southern Skein & Foundry Company. The officers of the company will be: J. G. Johnson, president; James K. Jones, vice-president; Harry L. Probasco, treasurer; G. N. Prentiss, secretary. Senator Jones was chairman of the Democratic National Committee from 1896 until 1904. Mr. Johnson was chairman of the executive committee of the national committee at the same time. G. N. Prentiss was secretary and general manager of the Racine Steel & Iron Company for four years. H. L. Probasco is president of the Bank of Chattanooga. Frank A. Nelson is cashier of the Bank of Chattanooga. The plant will be at Chattanooga, Tenn.

It is reported that the James T. Powers Foundry Company, Elkton, Md., will erect a pattern shop and enlarge its plant.

Extensive improvements are to be made to the Smith plant of the Continental Gin Company, Avondale, Ala. The capacity of the foundry will be doubled and a large warehouse will be erected, to cost \$50,000.

The citizens of Gadsden, Ala., are inclined to believe that something will be shortly forthcoming as the result of the visit to Gadsden and other Etowah county mineral and manufacturing points last week of a party of German capitalists. It was given out that the party contemplates the erection of iron and steel plants and that they expressed the greatest satisfaction with the prospects presented by Gadsden and neighborhood, where there are already furnaces, car works and a steel mill.

A. L. Russell, general manager of the Virginia Stove & Manufacturing Company, Basic City, Va., wants catalogues of foundry equipment and supplies, except boiler, engine and cupola.

Joseph Wharton, president of the American Iron and Steel Association, is optimistic as to the future of iron and steel. He says: "The abnormal depression which existed during most of this year was largely due to a feeling of distrust in the ability of the country to consume the product of the furnaces and mills. That distrust arose mainly from doubt whether the various needs of the country for all sorts of constructions requiring iron and steel could be financed, which doubt has disappeared, not, of course, in relation to the speculative and intrinsically unsound things, but in regard to those things which are really needed and can pay their way. I think that, unless prevented by the scarcity of coke and ore unreasonable demands for higher wages, the production of pig iron in 1905 in this country is likely to be the largest ever turned out."

Conditions in the Iron county, Utah, iron districts are about as they were a year ago, except that approximately \$50,000 has been expended in development work by property owners in that section. Much of this work has been done for the purpose of securing patents from the United States government. The Colorado Fuel & Iron Company has added considerable to its already extensive territory, but has taken no decisive steps towards the opening of the deposits. The interests of S. B. Milner and others, however, may form the basis for a large corporation which will result in the building of iron and steel works at some point of vantage. Plans of this kind have been under consideration for some time.

A. P. Lindermann was elected president of the Milwaukee Foundrymen's Association at the annual banquet and meeting held last week. Prof. John H. Gray, of the Chicago University, lately returned from a study of labor conditions in Europe, told of his researches. Charles Quarles discussed the open shop; Mr. Lindemann spoke on trade schools; C. C. Tyler told of the national association, and W. J. Fairbairn of employment bureaus. Other officers elected were: Vice-president, W. J. Turner; secretary, W. J. Fairbairn; treasurer, Clarence Falk.

By agreement the temporary injunction granted last year against the striking employees of the Bates Machine Company, Joliet, Ill., has been made permanent and perpetual. At the same time the damage case against them has been dismissed.

Prospects for Vancouver

English capitalists are going to Vancouver, B. C., at the solicitation of N. Thompson, promoter and builder of the Vancouver Drydock & Shipbuilding Company, for the purpose of looking over the ground with a view to establishing a steel plant on that coast. While in England recently in connection with the construction of the large floating drydock to be established in Vancouver harbor, Mr. Thompson acquired the rights to a modern method of steel-making. These rights cover British Columbia, the Northwest Territories, and the States of Washington and Montana.

Subsequently Mr. Thompson set about inducing capital to look into the matter of manufacturing steel from the raw material so plentiful on the coast. The product of Texada Island ores entered to no small extent into the construction of the hull of the United States battleship Oregon. The English people interested will investigate the proposition in all details.

Mr. Thompson states that construction of the drydock is proceeding rapidly at the yards of Swan & Hunter, Newcastle-on-Tyne. The first section of the dock, which will be 276 feet in length, and capable of lifting 6,500 tons, will be in Vancouver and in operation by the end of next year. The dock is to be built in two sections, and each will be capable of acting independently of the other on the smaller classes of work. When large work is called the two sections of the dock may be linked together and a dock formed 510 feet in length, capable of lifting 11,300 tons and of capacity to receive a vessel 600 feet in length. The smaller section will be 234 feet in length.

Activity in Wyoming Ore

It was announced recently that the output of the Hartville iron region in Wyoming would be increased from 700 to 1,000 tons daily, but new rush orders have been given since by the Colorado Fuel & Iron Company to increase the output of the Sunrise iron mines to 2,000 tons per day, which is nearly treble the average amount of ore heretofore mined in this section. As a result the great iron camp is booming. Train crews, miners and day laborers are added to the regular forces and every department of the mining and shipping industries of the camp pushed to the limit to meet the sudden demands of the company. The reason assigned for the increased output is the placing of large orders for steel rails with the company at its Pueblo works, their furnaces relying chiefly upon this camp for a supply of iron ores.

As these ores are high grade, averaging about 60 per cent, the daily supply of 2,000 tons will produce 1,200 tons of finished steel products at the mill.

It is estimated that the Sunrise and its associated mines now being developed will produce 2,000 tons daily for the next 40 years, or in the aggregate, from 25,000,000 to 30,000,000 tons. From diamond drill explorations in the vicinity of these mines it has been found that a huge zone of solid and continuous iron ore extends through the hills, in masses over 500 feet in thickness. The ore bodies of the Sunrise group seem to be practically inexhaustible, while outside of this group there are enormous deposits of which the Chicago mine on the eastern slope furnishes a notable example.

The surface mining on Sunrise mountain is done by quarrying, the ore being handled by steam shovels which lift from 10 to 20 tons at a time to the cars on the track. In this way a train of 20 cars of 50 tons capacity, or 1,000 tons, is soon loaded and is hauled out with large engines on the road to Pueblo. For the underground mining the Sunrise is equipped with a triple compartment shaft surmounted by a steel tippie and powerful and complete automatic appliances for handling the ore.

The Chicago mine has lately come into prominence as one of the greatest sources of the ore to be supplied to the Pueblo iron furnaces. This mine, although only a mile and a half from the Sunrise, is on the other side of the range and

cannot be reached except by a circuitous route around the hills. The company is planning a branch from the Colorado & Wyoming road and has had several surveys made, none of them being less than seven or eight miles.

The Burlington road is also reaching out for the ore shipments from the Chicago group, and now has surveying parties running a line up Whalen valley from a point just below Guernsey. Both of these roads may be built, as they will give an outlet to the ore over two different systems, the Colorado & Southern getting the haul from the Wyoming & Colorado spur.

The Chicago has been under development for the last two years by running in shafts and tunnels, and by diamond drill explorations which have proved the remarkable extent and value of its ore bodies. The company is now engaged in placing an equipment of machinery on the mine, which makes it certain that the railroads must be built to carry away the product and maintain the maximum rate of shipments demanded by the Minnequa plant.

The Sunrise mine has a peculiar history. It was discovered and opened as a copper mine in 1881, and the next year was sold to the Wyoming Copper Company for \$60,000. The Wyoming Copper Company was organized by Col. A. T. Babbitt, a cattleman of Cheyenne, and its principal stockholders were N. K. Fairbank and E. W. King, of Chicago. They put up a copper smelter at Fairbank, a point on the Platte river just above Guernsey, and in a short time produced over \$200,000 worth of copper bullion. The ore which supplied this smelter came principally from the surface of the mine, in a large open cut. When this gave out the ore bodies ran into pure iron ores running from 60 to 68 per cent, and the copper industry was closed out.

A few years after the smelting works were destroyed by fire and the company sold its mine, an iron mine, for \$100,000, there being at that time no railroad in the district. For over ten years the property lay dormant, until the people who purchased the claim got possession of a large area in the vicinity showing iron in abundance and leased the consolidated claims to the Colorado Fuel & Iron Company, which began operations and last year completed a purchase of the mines, 75 in all.

Machine and Tool Industries of Chemnitz

Every effort is being made by Germany to negotiate favorable commercial treaties, and she has certainly been very successful thus far, writes United States Consul Monaghan, Chemnitz, Germany, for the lately concluded Russian treaty is looked upon as a distinct victory for Germany. It is easy to understand what all these treaties mean to industrial Saxony. One often wonders how Chemnitz, with its large machine-building works, has been so successful in competing upon the markets of the world, when a large proportion of the raw materials used comes from foreign countries, and a number of the large machine plants are located some miles from the railroads, so that everything must be hauled to and from the factories by means of trucks. Orders are still so slow in coming that most machine-tool manufacturers have on their pay rolls but a limited number of hands. Complaints are also made in this industry that coal prices are held too high, and that large consumers are forced to import Bohemian coal in large quantities. The raw-iron syndicate is also looked upon with suspicion, and has lost much credit through its recent manipulation of prices.

Manufacturers of machine tools used directly in the building of machinery, and those used in keeping other machine tools in condition, have reported slow but steady improvement in their trade, due largely to a considerable increase in foreign orders. Inland orders are few and far between.

The agricultural implement manufacturing trade developed satisfactorily during the last year. The prospect of good harvests induced buyers to invest heavily in farming implements, and, since the crops did not disappoint, this industry enjoyed a favorable year. No important change in the price

of raw materials occurred. The export trade showed no new features, except that the heavy duties levied by Austria on foreign agricultural implements made export to that country impossible. The bicycle manufacturing industry has shown a slight improvement in demand, though the prices were less satisfactory than in the preceding year. June 30, 1904, found the electrical machine manufacturing industry but moderately employed, but during the last six months conditions have improved steadily, so that at the present time this industry is fully employed. The Saxon electrical industry is especially highly developed. The Saxon government placed a number of heavy orders for electrical machinery that contributed much toward the improvement of conditions. Foreign markets also expanded satisfactorily. The heaviest foreign buyers were Holland, Belgium, Spain, South Africa, Russia, Austria-Hungary, and the Balkan States.

A Lubrication Number

The Joseph Dixon Crucible Company begins the new year with a special issue of their monthly house publication, "Graphite," devoted to Graphite Lubrication. This number has been sent to thousands who are vitally interested in lubrication in the hope of leading to a better understanding of the principles underlying the most effective use of Dixon's Ticonderoga Flake Graphite.

Graphite Lubrication is not a mere theory up for discussion. It is a well established fact of modern engineering and growing in importance every day as its advantages become better known. Lubrication methods must keep pace with machine and engine construction, add steadily, surely, the use of lubricating graphite increases because it aids to better lubrication. Copies of January "Graphite" will be freely sent to all who may be interested in attaining better results in lubrication, by addressing the Joseph Dixon Crucible Co., Jersey City, N. J.

Iron in Ancient Egypt

A letter from Baron Justus Von Liebig has appeared in the *Chemiker Zeitung*. It relates to an interesting archaeological question. The great chemist was struck by the fact that no iron implements or weapons were found in Egypt, while he believed it impossible to work the hard stone employed for the buildings without iron or steel. Lepsius, the Egyptologist, whom he consulted on the subject, told him that in the pictures in which weapons and implements are represented sickles and swords are shown partly in blue and partly in red colors, and that he holds that the blue is intended to represent iron and the red bronze. Since 1872, when the letter was written, our knowledge of ancient Egypt has been vastly enlarged. Dr. Birch considered it was doubtful whether the use of iron was practiced at an early period. Bronze armour appeared first in the reign of Psammetichus I., who wore a brazen helmet. The previous monarchs were protected by leather or linen armour. In the British Museum there are pickaxes of wood. Plough-shares were supposed to be of bronze. The masons used bronze chisels, wooden mallets and stone polishers. The carpenter employed bronze not only in tools, but for nails. Professor Flinders Petrie believes that iron was known about 3,400 B. C., but bronze was the principal metal utilized, and there must have been some means of hardening it with which we are not fully acquainted.

A Man's Work

The relations of different men to their work are determined from widely different points of view. One man will work entirely for the money he receives. The work he does is limited by his own estimate of the value of his compensation. The value of this work, both to himself and to his employers, is influenced by every little current of circumstance to which he is subjected.

A second man will labor for the good the work does him. His capacity and ability are the only limits to the amount and kind of service he will render. Salary, the personal qual-

ities of the men directly above him and other things that do not affect the value of his work to himself, are of secondary importance. Doing his work to the best of his ability is a simple matter of loyalty to himself. He is above the influences of these circumstances.

A third man will do his work not only for the benefit of it to himself and for his future advancement, but for the accomplishment of results. He is not essentially different from the second man; he is merely a step farther along in his development. In an organization of men the second man may be of restricted usefulness. Self-centered, he may easily miss his part in the common interests and purpose of the organization. The third man, on the contrary, looks beyond himself to the results of his work. Of necessity, he feels himself a part of the organization; he is as intent upon its achievements, its development and its success, as he is upon his own.

In the rank and file of an industrial company this identification of the individual with the organization interests comes most easily through a feeling of loyalty to the company on the part of its members. Whether a man works only for the money he receives or for his own growth and development depends mainly on the man—on his own way of looking at things. But whether a man works for the best interests of his company, as well as for his own best interests, depends largely on the character of the company. It must be one worthy of loyalty. But assuming that it possesses such a character, how can a company show it and prove it? Aside from the fundamental requisite of fair business relations between the organization and its members, there is no more certain way of doing this than by making the younger men know the men who direct the policy and work of the organization; the character of the company is merely a composite reflection of the characters of these men.—The Electric Club Journal.

In addition to the main rivers of Texas, there are at least 20 streams West of Colorado river which rise in springs and which constitute potential factors in the water supply and water power of the state. The springs for the most part in the Edwards plateau, the most notable exceptions being those at Fort Stockton, Santa Lucia, and at the head of Toyah creek, in trans-Pecos, Texas. The water power in many localities is only partially developed. There are, however, many plants in the state which are built upon scientific principles, with modern machinery and which obtain higher efficiency. A large percentage of the plants in existence are located on Guadalupe, Colorado and Brazos rivers and their tributaries. Guadalupe river easily takes rank as the most effective of the power generating streams in the state. There are more power plants on Neches and Sabine rivers and their tributaries than on the rivers farther west, but these plants are usually only small mills of 6 to 30 horsepower.

Cipriano Castro, president of Venezuela, lives in the most extraordinary dwelling ever inhabited by the head of a state. It stands within a park in the heart of the capital city, Caracas, and is built entirely of steel. It is covered on the outside by a kind of soft stone. Within, the steel walls are covered with lath and plaster so that the visitor sees nothing unusual. Yet the walls, floors and ceiling of the half dozen rooms composing that house are entirely of steel and the whole is built upon a foundation of Portland cement. The steel house was not built with forethought of fire or flood or wind, but of earthquake. For it is earthquake proof. Its few rooms resemble the compartments in a safe deposit vault and in this strong box of a place the president spends most of his time. Here all the official business of the chief executive of the republic is transacted. And here, too, lives the Senora Castro.

George Brooks died a few days ago at his home in Columbus, Ind., at the age of 65. He had been in poor health for two years. For thirty years he was the superintendent of the foundry at the L. & N. shops in Louisville, Ky., and had a wide acquaintance among railroad men.

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It was found in the report of the Canadian commission which recently investigated the smelting of iron ore by electricity in Europe, that with electrical energy at \$10 per electric horsepower year, and with coke at \$7 per ton, the cost of production is the same as the cost of producing pig iron in a modern blast furnace. The report of this commission, observes the Scientific American, outside of having fulfilled the immediate purpose for which it was presented, should serve as a safeguard to the general public against being led into hasty and undigested schemes for the electric smelting of iron ore. The figure of \$10 per electric horsepower year can only be realized under very exceptional circumstances, where water is abundant, readily available and contiguous to large deposits of iron ore. We believe that the lowest figures obtainable at Niagara are from \$15 to \$20 per horsepower, and here, because of the size of the plant, and the unlimited volume and great head of water available, the conditions are ideal for cheap production. It may be that some of the large plants which, during the past few years, have been hurriedly erected on a scale far beyond the immediate local demand for power, are making contracts at prices that give very little, if any, return on the investment; and great care should be exercised in using such low figures as a basis if indiscriminate estimate of the cost of electric iron ore reduction.

In the district of Ahaus, near the Holland border, a group of iron ore beds have been found, averaging from 20 to 30 cm. each in thickness. The beds lie close together, and are enclosed in marl, which is overlaid by sandstone and limestone. The deposits have been investigated by several Westphalian iron manufacturers and will be actively developed. Clay ironstone has been found also in the district of Rees, on the West bank of the Rhine. The beds occur at a depth of 450 meters, but are of great thickness and probably of considerable extent. So far exploration has been limited to boring operations.

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Factory Sites

Below will be found a list of cities, classified by states, which are desirous of securing the locations of iron and other manufactories within their borders. In many cases the cities named will give sites free from taxation and subscribe stock, as an inducement to manufacturers seeking locations. Firms or individuals desiring particulars with regard to any of the cities given here can obtain same by addressing The Iron and Machinery World.

ILLINOIS.

Amboy—Machine shop, iron and wood manufactories.

Anna—Iron working industries.

Belleville—Iron working industries.

Bloomington—Iron working industries.

Cairo—Iron working industries.

Carbondale—Car shops, iron industries.

Centralia—Iron working industries.

Dixon—Iron working industries.

Du Quoin—Machine shop, stove, and wagon factories.

E. Dubuque—Machine shop, foundry.

E. St. Louis—All kinds of industries.

Effingham—Machine shop, foundry, implement factory.

Freeburg—Foundry.

Freeport—Any kind of industry.

Galena—Iron and wood working industries.

Gilman—Machine shop, foundry, fence factory.

Harvey—All kinds.

Lincoln—Machine shop, foundry, implements.

Marion—Stove, wagon and carriage factory.

Minonk—Foundry.

Moline—Foundry, bolt, screw spring and axle factories.

Ottawa—Iron working factories.

Moweaqua—Implement factory.

Normal—Stove foundry.

Pana—Farm implements.

Paxton—Foundry.

Peotone—Machine shop.

Polo—Implement factory.

Rock Island—Spring and axle factory

Springfield—All kinds of industries.

Winona—Galvanizing works.

Buda—Iron works and foundry.

Dubuque—Any kind.

Independence—Carriage and implement factory.

Osage—Machine shop, foundry.

Sioux City—Any kind.

Webster City—Any kind.

Belle Plain—Machinery house.

KENTUCKY.

Fulton—Wagon and carriage and handle factories.

Hopkinsville—Any kind.

Louisville—Any kind.

Mayfield—Wagon and carriage factories.

Paducah—Iron and steel car wheel and car shops.

IOWA.

Cedar Rapids—Wagon and carriage factory.

Fort Dodge—Foundry and machine shop.

Cherokee—Wagon and carriage factory foundry.

Council Bluffs—Any kind.

WISCONSIN.

Buda—Iron works and foundry.

Madison—Any kind.

MINNESOTA.

Fairmount—Foundry, machine shop and engine works.

Winona—All kinds of factories.

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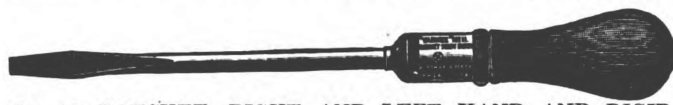
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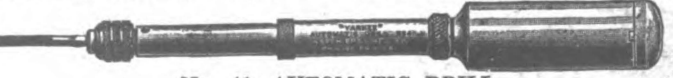
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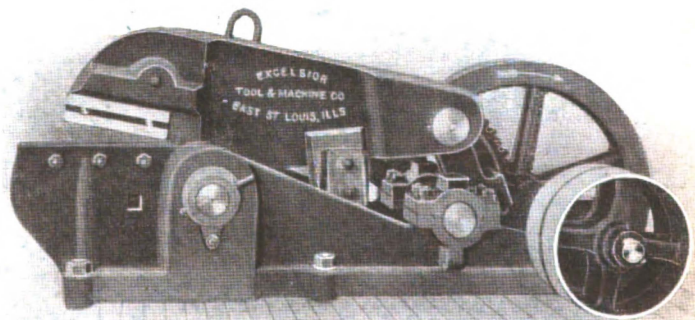
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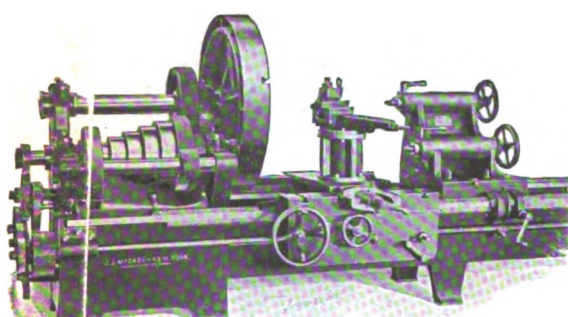
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