

ELECTRICAL THAWING OF BLAST FURNACES.

Editor, Canadian Engineer:—

Sir,—Could you inform me if electricity is being used successfully to burn out the tuyeres, cinder notches or iron notches of blast furnaces, when they become frozen? We would be pleased to have the names of any companies using electricity for this purpose, also description of apparatus.

Yours truly,

W. H. PICKLES, Electrician.

Nova Scotia Steel and Coal Co., Limited.

Sydney Mines, N.S., Jan. 6th, 1905.

K. L. Aitken, consulting electrical engineer, of Toronto, to whom this enquiry was referred, replies as follows:

I have no information on plants where electricity is used for burning out tuyeres, etc. That it is used for this purpose is quite probable, however, as the electric arc furnishes a means of concentrating an intense heat at any desired point.

An "arc welder" of either the Bernardos or Zerener type might be employed—the former apparatus, when heavy currents are used, can weld two $\frac{3}{8}$ -inch iron plates together at the rate of six feet per hour.

If Mr. Pickles has a direct current generator available, an experiment might be tried, and at little or no cost. The positive wire should be connected to the tuyere, and the negative to an ordinary arc lamp carbon, suitably mounted on an insulated handle. In the negative lead there should be inserted a low resistance, probably two or three ohms will be serviceable for the trial if the generator voltage be 125. The continuous capacity of this resistance should be say, 50 amperes, and it can probably be made up easiest from 16 or 32 candlepower lamps connected in multiple. The carbon, when ready, should be touched to the tuyere, and an arc drawn. Mr. Pickles will no doubt be able to tell from the experiment whether the scheme will be of use when carried out on a large scale. In welding the plates previously mentioned, the Bernardos machine required about 250 amperes, at 150 volts.

The Zerener welder consists of two carbons, and the arc is drawn between them, and deflected outward by means of a small electro magnet. Thus the arc can be applied direct to the metal to be heated. It is doubtful, in my mind, if the same intensity of heat can be obtained with this latter machine. I would suggest that Mr. Pickles communicate with some of the manufacturers of electric welding apparatus—no doubt they have been called upon to deal with such propositions, and therefore will have definite information on the subject.

INDUSTRIAL NOTES.

Tillsonburg has granted a bonus to the Wind Motor Co. Seaforth has loaned the Canada Furniture Manufacturers \$20,000 for twenty years.

The new bridge across the west arm of the Lake of the Woods, which the Government built at a cost of \$25,000, is completed.

The Canadian Shredded Wheat Company, Limited, have secured a plant at Niagara, Ont., where they expect to be in operation by May 1st.

Charlottetown, P.E.I., is to have a new railway station. The building will be three stories high and will cover an entire block. Construction is to commence in the spring.

A company is being formed to build a large wharf at Esquimalt, to accommodate ships of the heaviest tonnage, also a sawmill for the supplying of foreign markets. Iron works, too, are proposed to be built in close proximity to Esquimalt, in which proposition both Victoria and English capital is interested.

The Keewatin Flour Mills Co. have prepared plans for the construction and equipment of a first-class flour mill, with elevators, barrel factory, railway sidings, and all that is necessary to operate a mill of 5,000 barrels' capacity. Tenders will be called for at an early date, and work begun in the spring.

Alexander Barr's blacksmith shop and carriage factory, Pembroke, has been destroyed by fire. Loss, \$4,000; no insurance.

A 30-ton electric crane has been installed in the new boiler shops of the Goldie-McCulloch Co., Galt, by the Morgan Engineering Co., of Alliance, Ohio.

Contracts for the foundations of the new elevator at Port Colborne have been awarded to Larkin & Sangster. The price is in the neighborhood of \$200,000.

The main building of the Canada Carriage Co., at Brockville, was burned on January 4th. Loss about \$250,000, largely covered by insurance. Company will rebuild.

Kaolin has been discovered on the farm of T. E. McWilliams, near Moose Jaw, N.W.T., and a company to make sewer pipe and china dishes is expected to be in operation in the spring.

The Lake Superior Corporation started the year with enough orders to keep steel rail mill running continuously till the end of September, and with the prospect of closing orders which would keep the mill in full operation till the end of the year. The largest customers will be the Canadian Pacific, the Canadian Northern, and the Grand Trunk.

The Canadian Canoe Co., Limited, Peterboro, have moved into the building lately vacated by the Martin-Orme Piano Co., and now have one of the largest and best equipped factories in Canada for the manufacture of small pleasure craft. Their goods are sold in all parts of the Dominion, also in England, Australia, and Germany. Since 1901 their business has doubled.

A cement works is being equipped at Todd Creek, Vancouver Island, and is expected to be in operation this month. It is said that \$300,000 has been spent on the equipment. The location has the advantage of a convenient supply of excellent clay, and also of grinding stone, good shipping facilities, convenient markets, and water power at a distance of sixteen miles. A steam plant is now being installed, and during the summer the power of the Sooke river will be developed.

The Canada Launch Works, Toronto, has secured power to change its name to the Canada Launch and Engine Works, and has increased its capital from \$40,000 to \$100,000. New officers have been chosen as follows: B. W. Folger, president; M. M. Whittaker, vice-president and manager; and John Hendry, secretary-treasurer. The company has bought more land and is erecting a new machine shop 150 by 35 feet. A contract has been closed with the Lake Shore Engine Company, of Marquette, Mich., under which the Canadian Company will make the Marquette Company's motors here, and will be the only company in Canada manufacturing complete motor boats.

The competition and low prices now confronting cement manufacturers call for consideration of every phase of manufacture, in order to obtain economical production. That cement manufacturers are alive to the situation and are making important changes is shown by the recent orders received by F. L. Smidth & Co., of New York. Among the installations of kominuters and tube-mills being made by this company, may be mentioned those for the Lehigh Portland Cement Co., at West Coplay, Pa., and Southern Indiana; the Lawrence Cement Co., of Siegfried, Pa.; J. B. Speed & Co., of Louisville, Ky., who are erecting a new mill at Speeds, Ind.; the Elk Portland Cement and Lime Co., Elk Rapids, Mich.; and the Alma Cement Co., of Wellston, Ohio.

The plant of the Northern Iron and Steel Co., at Collingwood, which was recently acquired from the old Cramp Steel Co., is on a site of fifty acres on the harbor front, and is peculiarly adapted for shipments by rail and water. The plant consists of open hearth steel converting furnaces, and large rolling mills. The furnaces, which are each of 20 ton capacity, are of the stationary type, similar in design to those at the Carnegie works in Pittsburg. They are located in a steel building, 100 by 120 feet. The rolling mills are in a building 120 by 320 feet, and are completely equipped for rolling anything from a rod to a girder. A machine shop and hydraulic plant together with locomotives, cranes, etc., complete the equipment, which was designed by the Cramp Co., with the advice of some of the ablest steel authorities in America.