

through the materials to be dried, without depositing among it unconsumed carbon or smoke. As I generate twice as much heat as is generated by ordinary firing under a boiler, and all of it utilized, instead of passing half of it up the stack, it follows that at least four times as much work is done with a given amount of fuel as could be done by using steam in the most economical way known."

In the manufacture of the Cumber dryer each machine is specially designed for the purpose for which, and the conditions under which it is to be worked, the modifications and adjustments needed in each case being introduced. The principle is exceedingly simple, being that of the use of very hot air, furnace gas, or product of combustion, mixed, with a proper quantity of atmospheric air, moved by means of a fan or blower, and made to pass over and among the material to be dried. The illustration, Fig. 4, gives a side view of the dryer before being enclosed.

The Cumber dryer in use in the cement works of the Rathbun Company is also a Style A machine, and is, as far as external appearances go, identical with that in the terra cotta works, the internal arrangements not differing to any considerable extent. In the cement works a blue clay is used which contains silica, alumina, and iron, and is free from sand. The marl, which in some seasons carries as much as 50 per cent. of water, is taken from deposits some 15 miles distant from Deseronto. The marl and clay are mixed in proper proportions, and made thick enough to flow from the pug mill similar to a stiff brick mud. In these works, as in the other, the Cumber machine is not required to work up to anything like its full capacity, being usually used only some two days per week, as but a comparatively small

portion of material needs to be dried. This portion is taken from the mixer, then passed through the dryer and returned to the mixture from which it was taken, giving it the proper stiffness and consistency. In this operation it is found that one third of a cord of inferior wood will produce one ton of dried material which had contained, before drying, 50 per cent. of water.

The stream of stiff mud passing from the pug mill is cut into lengths of about three feet each. These are placed upon cars and run into a Sturtevant tunnel where they are thoroughly dried and from whence they are taken from the kiln to be burned. In this burning process the material, now as dry as it can be made, and the fuel, are fed into the kiln at the top; and the cement as it is burned falls into a lower chamber whence it is removed to a mill where it is crushed and pulverized, thus becoming the Portland cement of commerce, the barrels in which it is packed being made on the company's premises.

As before stated, these dryers are made by the F. D. Cumber & Son Co., Cleveland, Ohio. They are made in six sizes with capacity to prepare from three to twenty tons of clay per hour for dry pan or pulverizer. The clay is handled mechanically from the pit from which

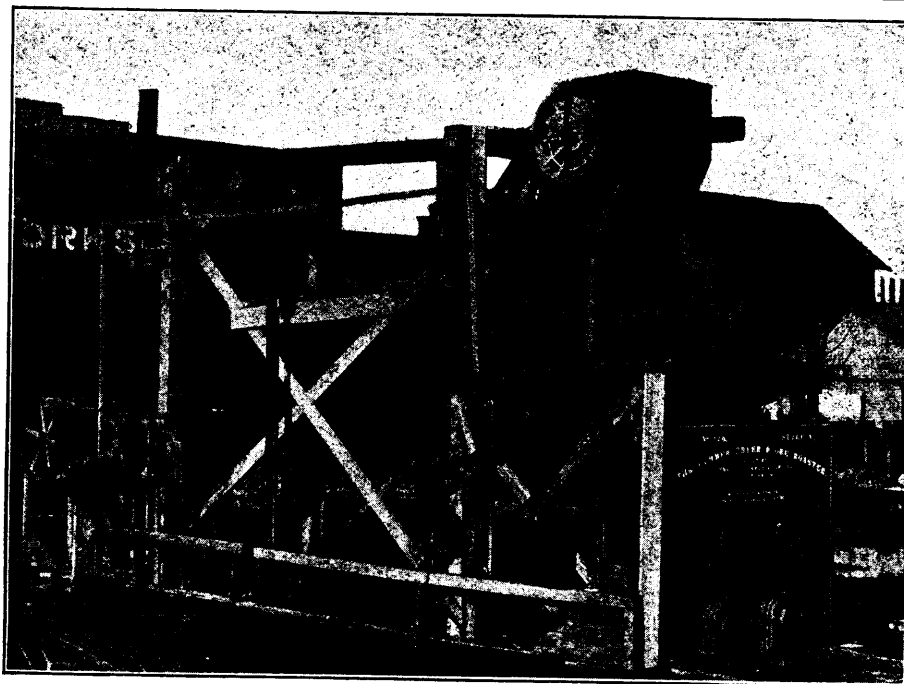


FIG. 4.—SIDE VIEW OF DRYER BEFORE INCLOSING.

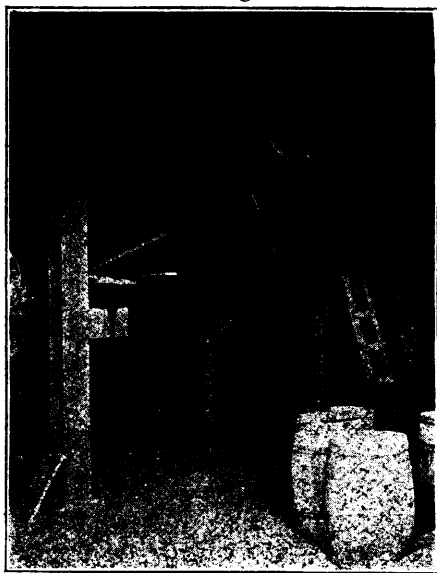


FIG. 5.—REAR VIEW—CEMENT WORKS DRYER.

it is taken to the finishing process. As compared with other methods, a very large proportion of the labor is dispensed with; very little fuel is required; great freedom from breakdown and getting out of order; superior products obtained; clay dried summer and winter; capacity to prepare phosphate, sand, earths, paint stock, peat, coal, salt, marl, chalk, cereals, night soil, animal manures, etc. A general view is given of the dryer in page 396 of this issue of the CANADIAN MANUFACTURER.

The illustrations appearing in this article are from photo-engravings very kindly loaned us by Messrs. Windsor & Kenfield, publishers of "Brick," a most excellent magazine devoted to the brick, tile, terra cotta and allied clay industries, published monthly at Chicago.

A Fine Electric Goods Depot.

Mr. John Forman has handsomely and conveniently fitted up his large warerooms at 650 Craig St. Montreal, where he now carries a full stock of electrical supplies. The warerooms comprise the ground floor and basement of the building, each of which is 125 ft. by 30 ft. extending back to a side street, by which the best shipping facilities are afforded. The interior of the ground floor is finished in white wood and is divided into several departments for different classes of goods. On the right of the entrance is the office which is separated from the rest of the store by a counter, and has no high partitions, so that the light of the large front windows is not obstructed. Opposite the office are show-boards upon which are samples of fittings and small goods so that a selection can be conveniently made by a purchaser without overhauling the stock. Behind the office is the small goods department, and next is the handsome electrolier show room, containing electroliers and brackets of the latest and most artistic designs, which are wired so that the effect when they are illuminated can be seen. In the rear is the shipping department and on the lower floor is carried the stock of heavy goods.

Mr. Forman has the agencies of a number of the best foreign and American manufacturers of electrical supplies and does a strictly wholesale business, undertaking no construction or installation work whatever. A specialty is made of high grade incandescent lamps of which a stock is carried of any candle power and voltage, and to fit any base desired. A large trade is also done in I. R. G. P. rubber covered wire which has a core of soft Para rubber and a covering of vulcanized rubber, thereby ensuring a very high insulation resistance and great durability. A complete stock of general supplies is carried, including a full line of standard American goods and of porcelain cut-outs, rosettes and other goods of artistic design and fine finish. An interesting display is made of heating utensils which range from a large oven to a small flat iron. Dynamos and motors of various sizes from ¼ to 20 h.p. are at hand, besides alternating and continuous current arc lamps and a full line of portable storage batteries. The practical part of the business is in charge of Mr. Geo. H. Hill.

Probabilities of competition from the Bell Telephone Co. are very remote, thinks Prof. J. P. Barrett. In an interview in the Chicago Tribune he is quoted as saying:—"So far as I can see telephone competition in large cities is not an immediate probability. Any company that undertakes to compete with the Bell company, in this city, for instance, must face an expenditure of \$5,000,000 before it can begin the operation. The Bell Telephone instrument reserve is something few people know about. It has a device combining the transmitter and receiver which may be fixed in the pigeon hole of a desk. A man may lean back in his chair and talk to a person in New York in an ordinary tone just as I am talking to you. He needn't put a transmitter to his lips. He just talks into the air. He doesn't put a receiver to his ear either. The voice of his correspondent issues clear and loud from the pigeonhole. This device may be placed in a man's bedroom and he can lie abed, look up at the ceiling, and converse with a person anywhere. This and equally wonderful devices are simply being held back ready to be slapped into use if any competing company makes it necessary."