

The paving block mill which operates in connection with the treating plant and manufactures the lumber into paving blocks, consists of a conveyer, a planing mill, saw tables with saws, etc. Seasoned lumber is loaded onto the conveyer, shown in the foreground of Fig. A, which carries it into the block mill. It passes on live rolls in a straight line through the planer and onto the saw table,

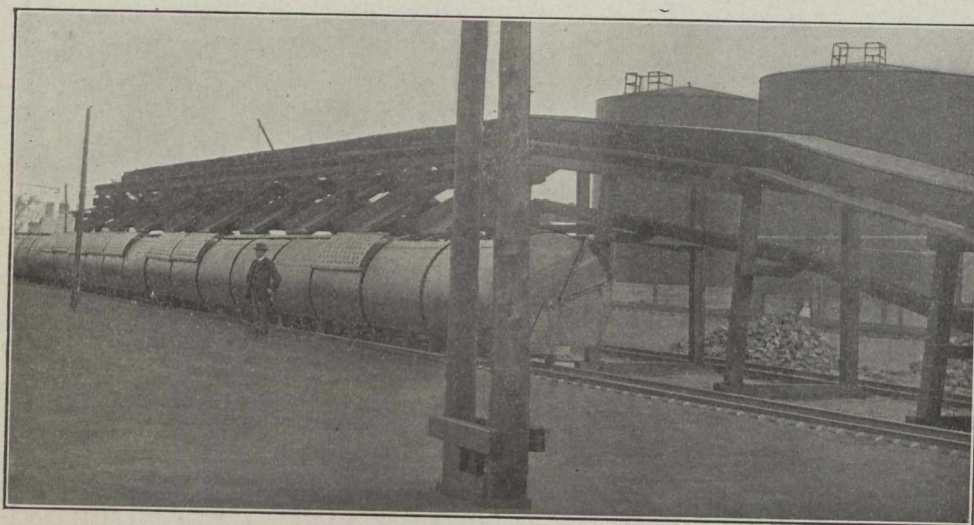


Fig. D.—Conveyer filling trams with paving blocks. Storage tanks in background.

on which it is fed into a mill of from sixteen to twenty saws which cut fifteen to nineteen blocks at a time. The sawn blocks drop onto another conveyer which carries them from the mill. As they pass out they are inspected and, from the conveyer shown in Fig. D, they are loaded into the cages, as the paving block trams are called. Sixteen of these cages are used to make up a train for each charge. Each cage contains about forty square yards of blocks.

Ties and timbers from the seasoning yard are loaded onto tram cars such as are shown in the centre of Fig. C and a number of trams placed together to make a train such as is shown at the left of Fig. C, ready to be pushed by the electric locomotive into the retort. The trains of block cages are made up at the conveyer at the end of the block mill, as shown in Fig. D, where they have been filled with blocks.

When the treatment is started after a train of paving blocks, ties or lumber has been placed in the retort, and the end doors closed and hermetically sealed, oil is allowed to flow into the retort from the overhead tank, filling the voids around the timber. Then by means of steam pumps additional oil is forced into the retort to obtain the amount of pressure required to thoroughly saturate the wood, 100 to 180 pounds pressure being used, according to the kind of wood. Upon completion of the pressure treatment the pressure is released and the oil is rapidly drawn into the receiving tank. A vacuum of from 23 to 27 inches is then quickly created in the retort by means of a special arrangement of vacuum pump and condenser. This vacuum is sustained from an hour to an hour and a half, and draws from the wood the surplus oil. After this surplus oil is drawn off, the doors of the retort can be opened and the train withdrawn.

During the treatment heat plays an important part as well as pressure and vacuum. The temperature during the pressure treatment is never allowed to drop below 150 degrees F., nor to rise above 190 degrees F. The degree of penetration depends largely upon the temperature of

the oil; the higher the temperature, within certain limits, the freer the liquid will flow and the more easily it will enter the pores of the timber after the timber has become warm and the pores expanded by the heat. Some kinds of wood offer little resistance to the oil, while other kinds offer great resistance, depending on the size of the pores, the smoothness of the cell walls and the extent to which material obstructions are contained in the cells. The temperature, pressure, vacuum, etc., are readily regulated by the operator, all valves and the controlling apparatus being near the station from which he watches the process.

A complete record is kept so that any official of the creosoting company, or the customer's representatives, can check the operator's discretion and skill. These records are kept, and should it be desired to refer to them at any time for any reason, even after a lapse of many years, one can easily do so.

A clocklike device shows the amount of oil in the overhead tank, both before and after treatment. The difference, of course, is the net amount left in the charge. This method is remarkably accurate. It

is checked up monthly by actual and precise measurements, and is also verified by weighing the timber before and after treatment. The whole process of treatment takes from three to five hours for ties and from four to eight hours for paving blocks. If the ties are well barked,

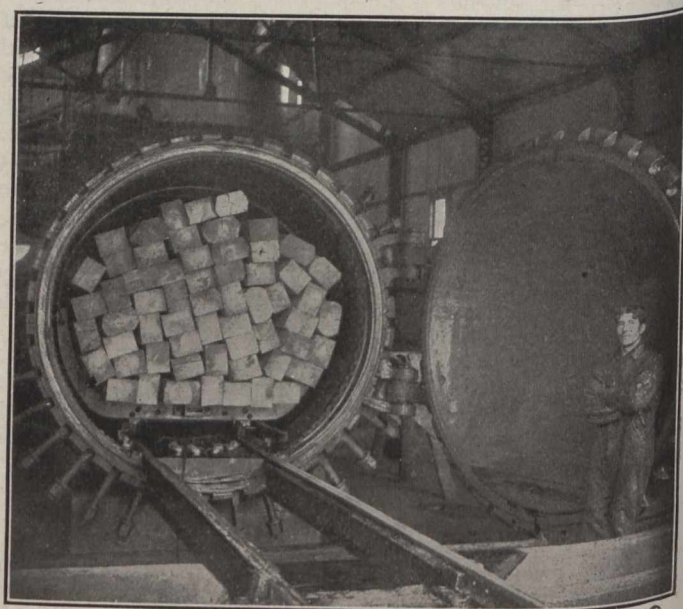


Fig. E.—End of retort after insertion of charge but before door is closed.

in good condition and well seasoned, the treatment does not take so long as it does otherwise.

Various preservative fluids are employed, but that which is in most general use is creosote oil. Of the five plants in Canada equipped for preserving wood on a large scale, all except one use creosote oil. The plant at Fort Francis, Ont., uses chloride of zinc. Unless the timber is penetrated so deeply with the preservative that checks