

CHAMBER'S IMPROVED BRICK MACHINE.

This simple and ingenious machine, of which we present herewith a perspective view, has acquired an extended reputation under the name of Chambers' "B" Brick machine. It belongs to the general division of "die" machines, as distinguished from "mold" machines, the former comprising such machines as form, by means of a die, or its equivalent, a continuous bar or slab of the clay or other plastic material operated upon, which is subsequently cut into blocks of proper lengths to form the brick. The "mould" machines, on the other hand, form each brick in a separate mould. The machine about to be described tempers its own clay with water, taking the clay as it comes from the bank, without any previous handling or preparation, and forms it into bricks, with sharp, well-defined corners and smooth, straight surfaces, at the rate of from 50 to 80 per minute, or from 25,000 to 35,000 per day of ten hours.

The essential parts of the Chambers "B" brick machines, are, the tempering mill, the impelling screw, the forming die, and the cutters. Their construction and operation will appear from the following description: A longitudinal section through the case of the machine is shown in Fig. 2, giving at a glance the disposition of the knives upon the shaft, the impelling screw, and the die. Fig. 3 is a transverse section, showing the disposition of the knives and the direction of their motion; while Figs. 4, 5, 6 and 7 show the several details relating to the forming die. The tempering mill is contained in the cylindrical portion of the machine, and consists of a strong iron case, in which revolves a horizontal shaft. To this shaft are attached a number of strong tempering knives, consisting of a series of blades of steel set spirally, the object of this arrangement being, that as they pass through the clay they shall at the same time move it forward towards the impelling screw. The clay is fed into the tempering portion of the machine through the hopper shown in the cut, and which, to avoid packing or clogging, is made somewhat larger at the bottom than at the top. The condition of the clay as fed into the tempering mill, as regards moisture, should of course be such as to leave it stiff, so that it shall not slip before the knives, but be cut through and through and thoroughly mixed. When it reaches the impelling screw, therefore, it will be ready to be formed into bricks.

The second portion of the machine is the screw, which is contained in the conical portion of the iron case. The interior of this portion of the case is ribbed, with the object of preventing the clay from revolving in it, and is chilled to prevent wearing. Upon the smooth surface of this screw the tempered clay is impelled forward and forced in a continuous bar through the third portion of the machine—the forming die, which has an orifice corresponding to the transverse section of a brick.

As the clay issues from the orifice of the die, it is carried forward by a plate to the cutting device. This consists of a thin blade of steel, in the form of a spiral, the distance between the threads of the spiral being the exact length of a brick. This spiral knife runs perpendicularly in a flat endless chain, which supports the bar of clay at one edge and at the bottom, by which arrangement a smooth, square cut is insured, the equality of pitch in the spiral insuring equality of length in the bricks. An ingenious governor and frictional device is provided, by which the speed of the spiral cutter is made to depend on the speed of the issuing bar of clay, which will vary slightly, according to its stiffness. By these devices, the speed of the knives is directly proportioned to the speed of the issuing bar. To provide against the cutters being affected by the presence of stones in the clay, the wheel to which they are secured is held in position by means of gravity, which holds it with just sufficient force to compel it to pass through the bar of clay. Should the knife meet with any extra resistance, such as would be caused by the presence of stones, sticks, and the like, the weight yields and allows the knife to move up, and thus cuts around it, the knife immediately falling back to its original position, ready to cut through the bar further on. The bricks thus cut from the continuous bar are then separated and carried by an endless belt any distance convenient for off-bearing on cars or barrows. The bar is sanded with fine sand, which, adhering to the moist surface of the bricks, renders them better fitted for handling, and prevents them from sticking together on the barrows or in the hacks. In the machines at present built the dusting chamber is placed in the end of the case, directly in front of the die.

To secure sharp and hard edges to the issuing bar, and to the bricks made from it, Mr. Chambers has introduced an ingenious modification in his forming die, which makes with a varying cross section, giving it a peculiar enlargement at the corners at its commencement. Having thus placed an excess of clay at

the corners, the gradual contraction of the die results in packing the clay hardest in the corners, and brings the bar out with the desired hard and sharp edges.

Should a stone or other obstruction too large to pass through the screw find its way to it, the flow of clay will be forced to issue at the safety valve provided for the purpose, and thus make known the presence of the obstruction, which may be removed. A smaller obstruction lodging in the die, will show itself by splitting the issuing bar of clay, and may be at once removed by swinging open the die, which is hinged to the case for this purpose.

The makers of this machine have overlooked nothing in their efforts to perfect it. It is because of their attention to many practical and seemingly unimportant details that much of the substantial success they have achieved must be ascribed. For example, all the main moving parts have their journals in one solid casting. The whole machine is self-contained—that is, all complete within itself. It cannot settle out of line; all wearing parts are easily removed. Each casting has a letter and number cast upon it, indicating the size of the machine and the particular piece. They are all fitted to standard gauges, so that by sending the letter and number, any piece can be duplicated at once, and fit guaranteed. The machine is replete with little conveniences and requirements for its easy care and durability. Each oil cup has a self-closing lid, so that it cannot carelessly be left open. Each journal has a dirt-band over it to prevent the dirt from working into it, and many of them are entirely closed at one end for protection.

It is attention to such matters as these, which many makers of really excellent machines frequently overlook, that often makes the difference between success and failure. The manufacturers of this brick machine are so well satisfied with its merits that they announce the standing offer to sell to any responsible brickmaker in the United States "subject to trial and approval."

For any further information desired, address Chambers, Brother & Co., Philadelphia, Pa.

TIMBER SUPPLY.

There are few questions more important to Western Ontario farmers than the question of timber culture for future use. Forests have been cut down with almost criminal waste and no new ones planted, and even in the Orillia districts ten years will use all lumber fit for the saw. While the future lumber supply has been much talked of, a few farmers in that neighborhood, show the question not so hard of solution. Having planted a few acres of poor land, they found it does not require many years to grow profitable timber, and that if its culture were properly understood there is little occasion to offer any inducement to plant beyond the self-interest involved in itself, just as there is in any other business pursuit. The man who plants an orchard does not expect to get any return until it is ten or fifteen years old. He knows that if he wants to sell his farm before the trees bear fruit, the statement on the sale-bills that it contains "an orchard of fruit trees just coming into bearing," will help the bidding wonderfully, and it would be the same with the trees if the timber question were properly understood. These parties state that a piece of woodland properly planted will come into use as quickly as an apple orchard will, and a farm of one hundred acres that had a few acres of young forest would bring far more than the additional cost of planting, should the farmer be forced to sell before the timber matured. All this implies that it be properly located. It would neither be prudent nor profitable to plant where a whole acre of timber could be bought for a few dollars any more than it would be wise to plant apple trees the fruit of which nobody would buy. There is, however, no doubt that in fifteen or twenty years, over a large district of our Province, timber will be scarce and lumber high-priced, and that those who plant now will be well rewarded though the trees be not large enough for saw-logs then, yet the little plantation would come well into use for fuel and other purposes. Every one who owns a farm should look about him and see how the timber prospect is, and, if he sees a probable scarcity in the market or in his woodshed, plant a few acres to supply the deficiency.

—A correspondent writes that "Tar is instantaneously removed from hand and fingers by rubbing with the outside of fresh orange or lemon peel, and wiping dry immediately after. It is astonishing what a small piece will clean. The volatile oils in the skins dissolve the tar, and so it can be wiped off."