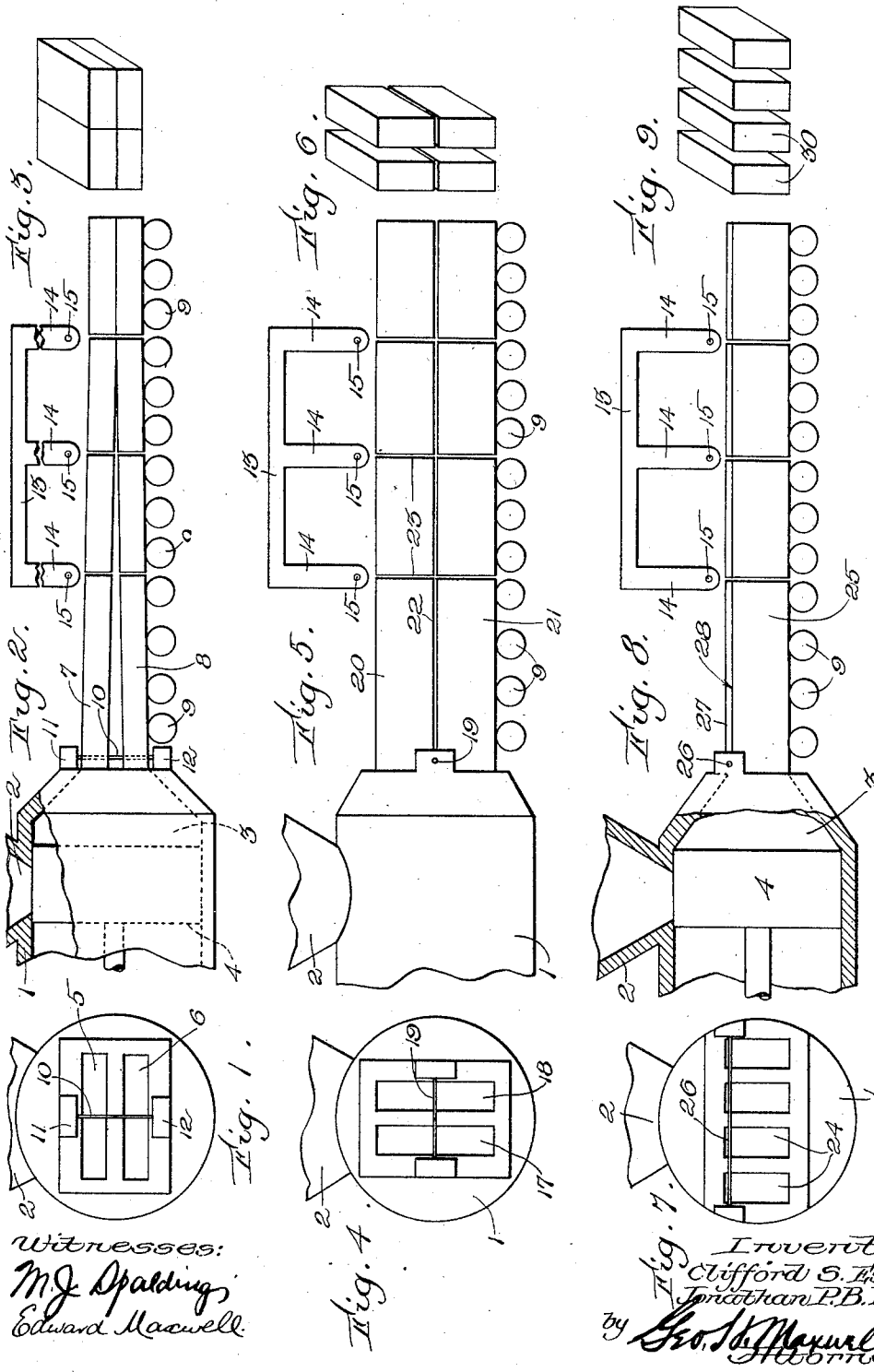


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BRICKMAKING MACHINE.
APPLICATION FILED FEB. 10, 1910.

1,002,976.

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UNITED STATES PATENT OFFICE.

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BRICKMAKING-MACHINE.

1,002,976.

Specification of Letters Patent. Patented Sept. 12, 1911.

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To all whom it may concern:

Be it known that we, CLIFFORD S. ESTES, a citizen of the United States, residing at Ridgway, in the county of Elk and State of Pennsylvania, and JONATHAN P. B. FISKE, a citizen of the United States, residing at Auburndale, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Brickmaking-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

Our invention has for its object the provision of means for the rapid and convenient manufacture of rough-faced bricks in such a manner that the surfaces which receive the mortar and sustain the main portion of the building pressure shall be dense and provided with a smooth compacted skin so that the brick has no tendency to crack, break down or warp in the burning, and is strong for building purposes, and yet the normally exposed surfaces of the brick are rough and more or less open after the manner of rough-faced bricks. In other words, our invention aims to provide a brick which has a balanced construction, in which the opposite sides and one longitudinal edge of the brick are homogeneous and equally dense, whereby the brick is greatly stiffened and strengthened, is given equal shrinkage in the kiln, and otherwise improved, while the front edge and the opposite ends of the brick have the rough surface and appearance required for the fancy brickwork, etc., for which such bricks are specially adapted.

In the drawings, in which a number of embodiments of the invention are shown, we have omitted a large number of such details of brick machines as are well known, and have confined the drawings to those features which relate more specifically to our invention.

In the drawings, Figure 1 is a front end view of the molding portion of a brick machine constructed according to our invention; Fig. 2 is a fragmentary view of the machine in side elevation; and Fig. 3 is a perspective view of the bricks; Figs. 4, 5, 6, are views similar to Figs. 1, 2, 3, of another embodiment of the invention; and Figs. 7, 8, 9, are similar views of a still further embodiment of the invention.

The general construction of the brick machine may be in accordance with any of the usual or preferred machines of the day, being herein shown as comprising a cylinder 1 having a hopper 2 at its top adjacent its front end, into which the clay is delivered in usual manner and falls into the space 3 in front of the piston-like plunger or forcing ram 4 when the latter is drawn back. The front end of the machine is provided with two openings 5, 6, shown in Fig. 1 as horizontal, through which the clay is forced at each forward impulse of the ram 4. These openings are twice the width of the bricks which are to be made. The clay issues in two wide horizontal streams or layers 7, 8, a series of rollers 9 being provided in usual manner for supporting the molded clay. Extending transversely across the center of the openings 5, 6, in a vertical direction as shown in Figs. 1 and 2, is a wire cutter 10, shown as secured at its ends in blocks or other suitable means 11, 12, and just in front thereof is a cutter frame 13 whose depending arms 14 are provided with horizontally extending cutting wires 15. All of the aforesaid mechanism is operated by power in usual manner well known to those skilled in the art. The result of this construction is that, as the clay is forced through the openings 5, 6, the rigid smooth edges of said openings compact the clay so as to render the streams of brick material equally dense and provide the desired smooth compacted skin, but as the openings 5, 6, are twice as wide in a horizontal direction as a brick, this skin formation and condensing or compacting of the clay takes place only on the top side, bottom side and one longitudinal edge of a brick, or in other words, on those surfaces which receive the pressure of the building and receive the mortar, and the wire cutter 10 forms the opposite longitudinal edge at a point or plane where the clay has not been thus smoothed down and provided with said skin, and the same is true of the end surfaces of the bricks made by the wires 15. Thus the desired rough surfaces are provided on one longitudinal edge and the two ends of the bricks, which are the only surfaces that are liable to be exposed in ordinary brick laying, and the skin surface is provided on all the other surfaces. This results in great practical advantage not only

in the laying of the bricks and in the durability of the building, but at every point in the progress of the manufacture of the bricks as well. By providing the bricks with the smooth compacted skin surfaces they do not tend to crack, break down or warp in drying and burning, there is a smaller proportion of damaged or imperfect bricks, and in handling and transportation the finished product does not chip and injure as readily as usual rough-faced bricks, and yet the rough edges and ends produce all the artistic finish of exterior pattern and surface which is sought by the use of rough bricks.

We prefer the form of apparatus already described as the rough wire-cut surfaces are left in such relative positions that their grain is not liable to be damaged even by the weight of the brick material itself. In Figs. 4 and 5 however we have shown molding openings 17, 18, similar to 5 and 6 before mentioned excepting that they extend vertically instead of horizontally, in which case we provide a horizontal wire 19 so that the brick material issues in vertical columns 20, 21, severed by the wire 19 along the line 22 and by the wires 15 along the lines 23. In Figs. 7 and 8 we have shown a horizontal series of vertical molding patterns 24, four in number, for molding individual brick material columns 25, a horizontal wire 26 being mounted horizontally across the face of the mold just beneath the top edges of the molding openings 24, the result being that the top skin 27, although formed on the top longitudinal edge of the column 25 is cut off along the line 28 by the wire 26, this portion 27 being later removed from the bricks, which are left in the condition shown at 30 Fig. 9. In all cases it will be observed that the general result is the same, viz., that the bricks are provided on their mortar-receiving sides and one longitudinal edge with a dense, hard, relatively smooth, tough skin, whereas on the other longitudinal edge or face and the opposite ends, the brick has the well-known rough face or wire-cut surfaces.

Our invention may obviously be carried out in still further embodiments but those herein shown and explained are sufficient to make the invention fully and clearly understood. When bricks are made without this balanced construction, the two flat sides of the brick shrink differently in the kiln, one side being smooth and dense and hence shrinking only slightly, and the other side being loose and porous and hence shrinking more than the opposite skin side. In other words, they tend to warp very badly, and this is entirely obviated by our method of manufacture.

Having described our invention, what we claim as new and desire to secure by Letters Patent is,

1. The herein described apparatus, comprising brick-forming mechanism including means constructed and arranged to mold a smooth, dense surface on two sides and one longitudinal edge of the brick material, means associated with said forming mechanism for forming a rough surface on the remaining longitudinal edge, and means for forming rough surfaces on the opposite ends thereof.

2. The herein described apparatus, comprising a brick machine containing a brick-molding opening with walls arranged to produce a smooth, dense surface on two sides and one longitudinal edge of the brick column means to force the brick material therethrough, and a wire cutter for cutting said brick material lengthwise to form a rough surface on the remaining longitudinal edge of the bricks.

In testimony whereof, we have signed our names to this specification, in the presence of two subscribing witnesses.

CLIFFORD S. ESTES.
JONATHAN P. B. FISKE.

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