

J. R. CROSS.
Brick-Machine.

No. 168,724.

Patented Oct. 11, 1875.

Fig. 1.

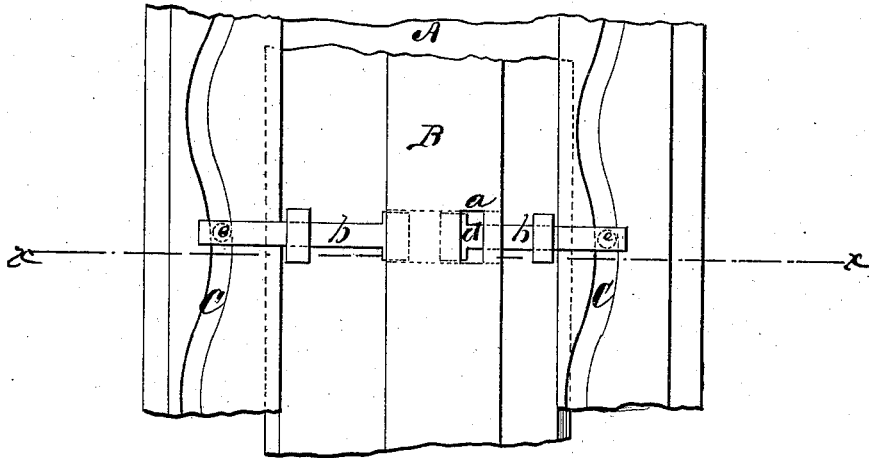
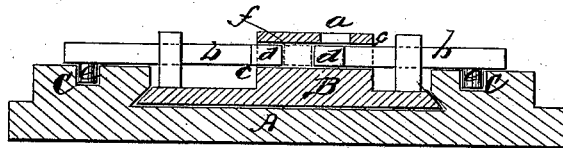


Fig. 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

JOHN R. CROSS, OF NEW YORK, N. Y.

IMPROVEMENT IN BRICK-MACHINES.

Specification forming part of Letters Patent No. 168,724, dated October 11, 1875; application filed January 14, 1875.

To all whom it may concern:

Be it known that I, JOHN R. CROSS, of the city, county, and State of New York, have invented a new and useful Improvement in Brick-Machines; and that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings and to the letters of reference marked thereon, making a part of this specification.

This invention is in the nature of an improvement in the brick forming or compressing mechanism shown and described in the patent of E. R. Hubbard, numbered 134,672; and the invention consists in a brick-machine wherein the molds are arranged on one side of the center of the mold-curb, such machine being also constructed with irregular channels or grooves, forming cams, combined with plungers in such manner that the clay in the mold of the machine will be confined between the heads of the plungers, and be moved in the mold alternately from one side to the other in rapid succession, so that the clay brick will be compressed uniformly on all its sides and ends, substantially as hereinafter fully described.

In the accompanying sheet of drawings, Figure 1 is a plan view of my invention; and Fig. 2, a cross-section of the same, taken in the line *x x*, Fig. 1.

Similar letters of reference indicate like parts in the several figures.

The difficulty found to exist generally in machine-made bricks is, that the clay forming the brick is not subjected to uniform pressure within the molds; hence the clay is not uniformly condensed, so that when the brick is subjected to heat, as when being burned in the kiln, it will warp and become of irregular shape. This is believed to be fully obviated by my invention, as will be seen from the following description.

A represents the drum of a brick-machine, secured to the center of the periphery of which is a curb, B, with the molds *a* formed therein, and on one side of the center of the same. By placing the mold on one side of the center of the curb a recessed chamber, *f*, is formed. On each side of the curb B are openings *c*, opening into the mold, and of the size and shape

it is desired the brick shall be. Entering into these side openings *c* are two plungers, *b*, the inner ends of which are provided with heads *d*, which snugly fit into the mold *a*, and the other or outer ends of these plungers are provided with a projection, *e*, at right angles to the stem of the plungers. These projections enter into irregularly-shaped grooves C, forming cams, so that as the curb B revolves, the plungers *b* will be forced alternately from one side to the other of the mold *a*, or rather of the recess *f* thereof.

My improvement being constructed substantially as above described, its operation is as follows: The clay is forced into the molds by the action of the pug-mills or other suitable machinery, (the revolving drum A causing the clay in the mold to be severed from the clay in the pug-mill.) The clay being in this way deposited in the mold, as the drum and curb revolve, as they do in ordinary brick-machines of this construction, (the cams C being stationary,) the plungers *b* are forced alternately from one side of the mold *a* to the other, or rather of the recess *f*, and since the clay brick is confined between the heads of the plungers, it is likewise forced in like manner, and the pressure thus exerted by the plungers on each side of the brick compresses the sides uniformly, making them of equal density; and the pressure thus brought to bear on the sides necessarily forcing the clay forming the sides and ends of the brick against the top and bottom of the mold, and also against the ends of the same, condensing in this way the edges and ends of the clay, and since this condensing process comes from the same initial force—*i. e.*, the action of the cams—it follows that the entire brick must be of uniform density throughout; and hence, when it is burned, it will not warp out of shape. On the contrary, its sides will remain parallel and true.

Another advantage for this alternate backward and forward movement of the clay within the mold is, that the entire surface of the brick will be smoothed and finished by friction.

After the brick has been compressed, as above described, the shape of the cams draws one of the plungers from the mold, while the

other one is forced into it, and forces the brick from the mold onto the carrier, and from the machine.

The advantages arising from the constructing of the molds on one side of the center, or near one edge of the mold-curb, will be found very great, for the first stroke of the plungers carries the clay through a greater continuous compressing-space than could be obtained by any other construction, and hence hastens the formation of the brick.

Having thus described the construction and operation of my improvement in brick-machines, what I claim as new, and desire to secure by Letters Patent, is—

1. In a brick-machine, the molds *a*, located at one side of the center of the curb, whereby

the clay is forced through a greater compressing-space, and is consequently more fully and uniformly compressed, substantially as described.

2. In a brick-machine, the combination of the plungers *b d b d* with the mold-curb, said plungers being forced alternately into the molds in said curb from opposite sides, in such manner as to move the clay brick back and forth in said molds, and finally to expel it therefrom, substantially as shown and described.

JOHN R. CROSS.

Witnesses:

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