

(No Model.)

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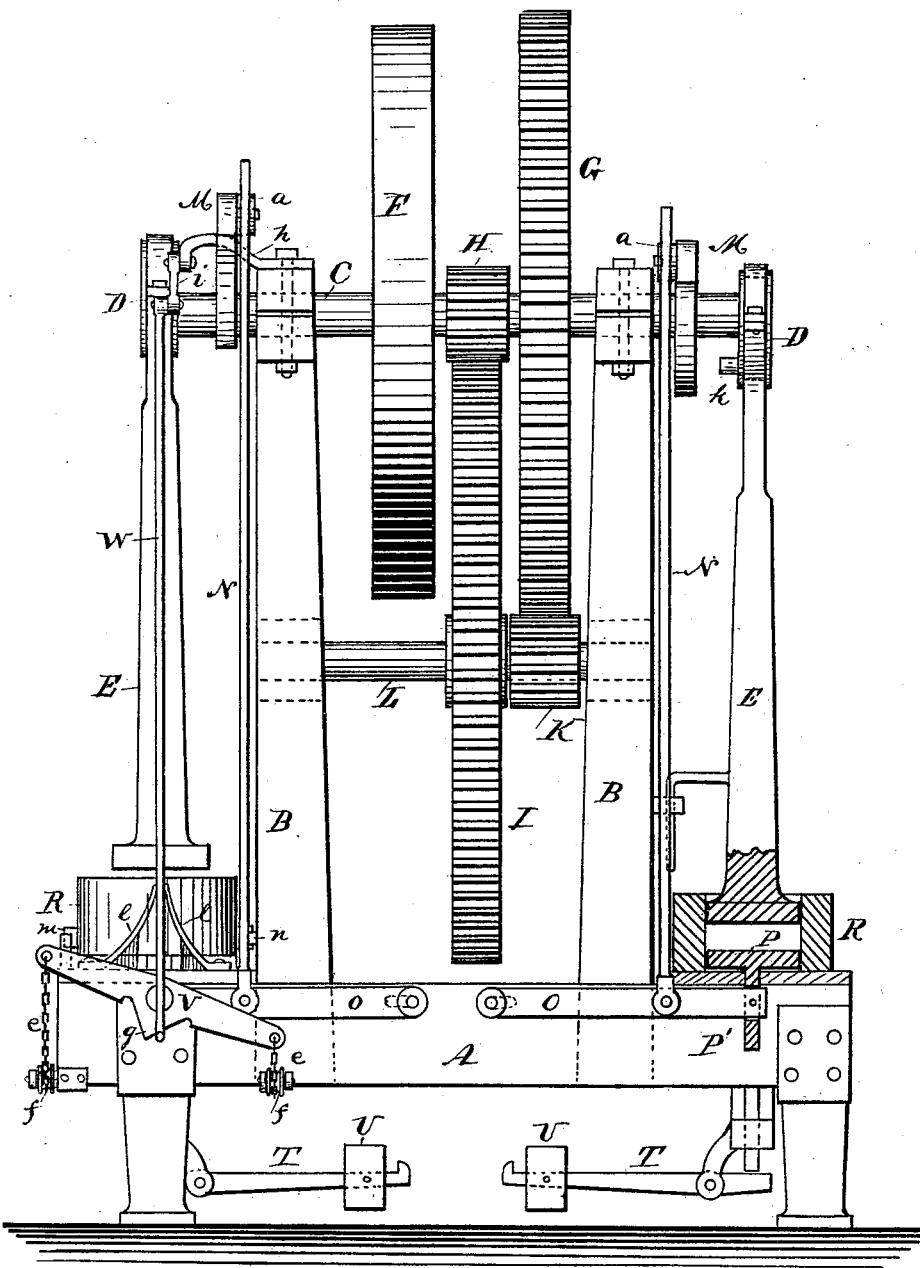
E. FALES.

BRICK MACHINE.

No. 262,583.

Patented Aug. 15, 1882.

Fig. 1.



WITNESSES

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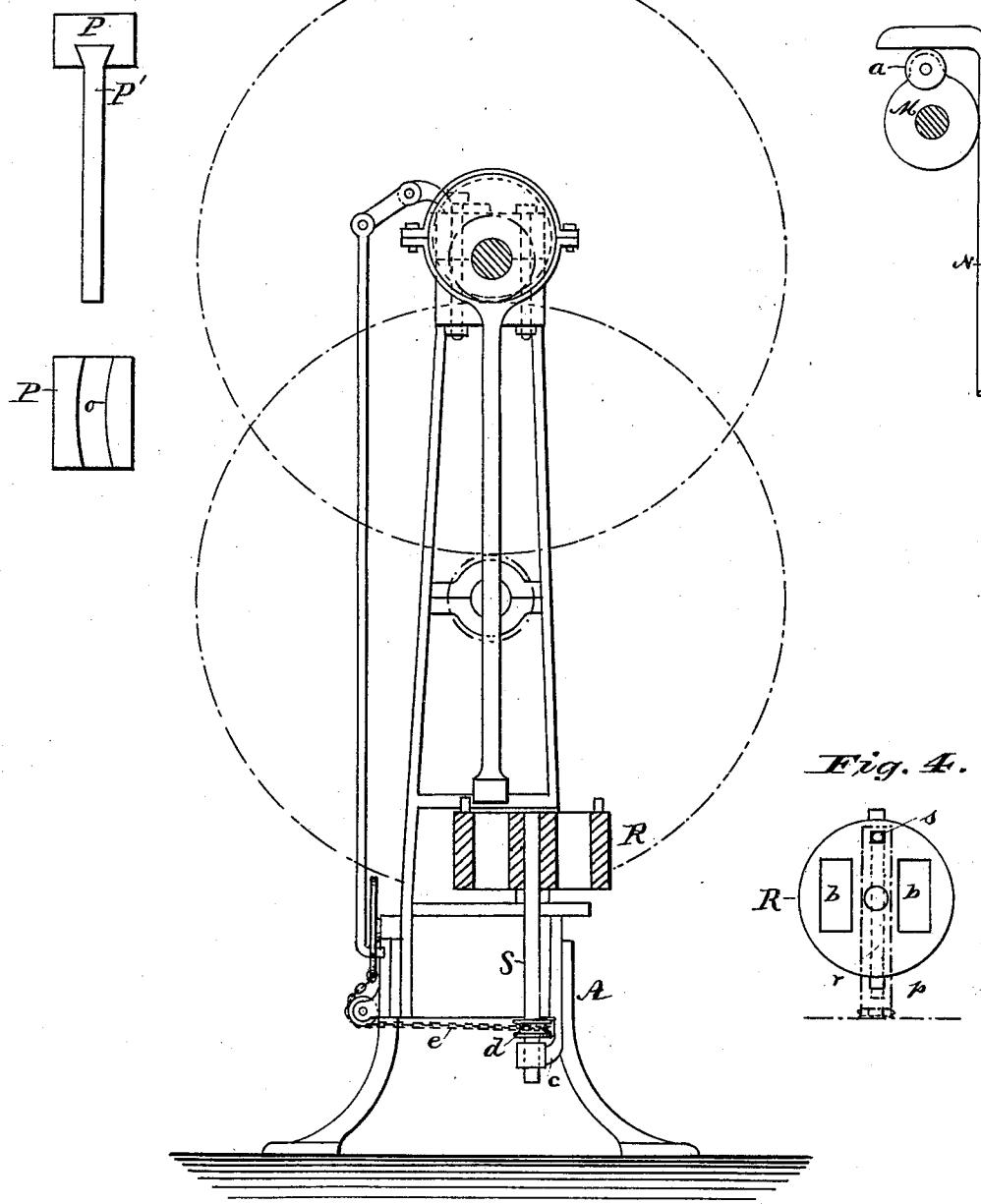
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Fig. 2.

Fig. 5.



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EDWARD FALES, OF KEOKUK, IOWA, ASSIGNOR OF ONE-HALF TO F. T. HUGHES, OF SAME PLACE.

BRICK-MACHINE.

SPECIFICATION forming part of Letters Patent No. 262,583, dated August 15, 1882.

Application filed July 11, 1882. (No model.)

To all whom it may concern:

Be it known that I, EDWARD FALES, a citizen of the United States, residing at Keokuk, in the county of Lee and State of Iowa, have 5 invented certain new and useful Improvements in Brick-Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to 10 make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in 15 brick-machines; and it consists in certain details of construction and mode of operation, which will be more fully hereinafter described, and pointed out in the claims.

Figure 1 is a view, partly in perspective and 20 partly in section, of my invention. Fig. 2 is a sectional end view. Fig. 3 is a detached view of the cam and lever for ejecting the brick from the mold. Fig. 4 is a plan view of the mold, showing the wiper or stroke-bar in dotted lines. Fig. 5 is a perspective and bottom view 25 of the mold-bottom.

Referring to the drawings, A designates the base or frame of the machine, on or in which are mounted the standards B B for supporting 30 the operating parts of the machine, as will hereinafter more fully appear.

C is a shaft mounted in suitable bearings in the standards B, and is provided at each end with eccentric disks D D, to which the pressing-plungers E E are attached, and by which they are operated alternately in different directions. The shaft C is provided with a fly-wheel, F, and large and small gear-wheels G H, which mesh into and are operated by the 35 40 large and small gear-wheels I K on the shaft L, which is also journaled in the standards B B, and to which any desired or convenient power is applied. I do not, however, confine myself to the means just described for driving the machine; but it will be apparent that by 45 such an arrangement a powerful and positive power can be brought to bear on the plungers.

R R are the mold-wheels, containing preferably two mold-cavities, b b, and are each pro-

vided with a sliding bottom or plunger, P. 50 The mold-wheels are pivoted to the bed-frame A by means of a rod or pivot-pin, S, said rod being also steadied at its lower end by means of the bracket-loop c. The pivot-pins S rest on and are supported by the weighted arms T, 55 which serve, when the pressure of the plunger is not exerting its full force downward on the brick, to keep the mold-wheel slightly elevated; but when the full pressure of the plunger is exerted on the clay the mold-bottom, which has up to this time projected below the lower side of the mold, will be forced into the mold-cavity by 60 reason of the friction of the clay on the sides of the mold created by the downward travel and pressure of the plunger. This will cause 65 the mold-wheel to be pressed down and bring the pressure on the clay from both sides, the mold-bottom, resting as it does on the base of the machine, is forced up in the mold-cavity against the clay, so that the clay is pressed as 70 much upward from the bottom as it is downward from the top and a brick produced of equal solidity all the way through, and by the adjustment of the weights U on the pivoted arms T the amount of pressure necessary to force the mold- 75 wheel down is regulated. The mold-supporting shaft or pivot S is provided with a grooved wheel, d, to which a chain, e, is attached at its center, the ends of said chain being secured to the bar V, which is pivoted to the frame A. 80 Friction-wheels f f are also secured to the frame A, over which the chain e passes.

The lower edge of the pivoted bar V is provided with a V-shaped projection, g, which is embraced by the lower end of the bar W, said 85 bar W being hooked or bent for that purpose. The bar W is supported at its upper end by a bracket-arm, h, secured to the standard B, and is connected thereto by means of the link or bar i, which projects forward into the path of 90 the eccentric D, and is operated by a flat pin, k, on the eccentric, whose office is to raise the bar W and tilt the bar V at the proper time, and through the medium of the chains cause the mold to make a half-revolution and hold 95 it until plunger enters mold. The bar W drops after it has been released from the action of the pin k, and, being held in a vertical position

by the guide or stay bars $l l$, it drops onto the opposite side of the V-shaped projection g and into the proper position to move the bar V in the opposite direction to turn the mold-wheel back one half-revolution and allow the brick to be discharged from the mold and a fresh charge of clay inserted.

Stops m and n are secured to the mold-wheel and to the posts B , respectively, so as to limit the motion of the mold-wheel and prevent the same from turning too far.

Any suitable device may be used for filling the molds with a fresh charge of clay; but I prefer to use an automatic mechanism which will measure the clay in exact quantities and place it in the mold, so that the bricks will be of a uniform thickness. The clay may, however, be placed in the mold by the hand of the operator.

The devices for ejecting the brick from the mold are as follows: The shaft C is provided with cams M for operating or raising the levers or bars $N N$, and also the bars $O O$, which are pivoted to the frame A at one end, while the other ends of the bars $O O$ are connected to the mold-bottoms P by means of the rod or bar P' , so that by the raising of the bars $N N$ by the cams M the brick will be ejected from the mold or raised sufficiently high to be readily taken away by the hand of the operator or by any convenient or suitable mechanism. The bottom of the mold is then brought back to its place, so as to prepare the mold for another charge of clay.

It will be observed that the cams M are provided with friction-wheels $a a$, (see Figs. 1 and 3,) and that the upper ends of the bars N are bent rearward, so that the friction-wheels on the cams will strike and lift the same, and by a quick movement the brick will be ejected from the mold and time afforded for the filling of the molds with a fresh charge of clay.

The loose bottoms P of the molds are provided with a dovetailed segmental groove, o , into which the dovetailed end of the ejecting-bar P' enters as the mold-wheel is being turned, so that after the brick has been ejected the mold-bottom will be returned to its position on the bed A , and the mold-wheel, in its reverse movement, will free the mold-bottom from the ejecting-bar.

p is a stroke or scraping bar, one end of which is pivoted to the standard B and is provided with a central slot, r , through which a pin, s , on the top of the mold-wheel, projects. As the mold-wheel is oscillated back and forth, making in each movement a half-turn, the stroke-bar will remove the surplus clay from the mold and leave the mold evenly full.

It will be observed that by my device I

have a complete and distinct press at both ends of the main shaft, so constructed that two bricks are made complete at each revolution of the main shaft, and yet the whole power of the machine is adapted to be put upon a single brick at a time, owing to the construction, or rather the relative positions, of the eccentrics on the main shaft, so that when one of the plungers is pressing a brick the other plunger is being withdrawn from the mold.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a brick-machine, the combination of the shaft C , provided with eccentrics $D D$, of equal size, with the plungers $E E$ and molds $R R$, whereby two bricks can be made at each revolution of the main driving-shaft.

2. The shaft C , provided with the eccentrics D , secured thereto in the manner substantially as described, whereby the full power or force of machine is exerted or expended on a single brick, as set forth.

3. In a brick-machine, the combination of the oscillating mold-wheel with the pivot-bar S and weighted lever T , as and for the purpose set forth.

4. The mold-wheel R and pivot-pin S , provided with the wheel d , in combination with the chain e , pivoted bar V , bar W , links h and i , and pin k on the eccentric, whereby the mold-wheel is caused to make a half-revolution in opposite directions, as set forth.

5. The main driving-shaft C , provided with the eccentrics $M M$ and friction-wheels a , in combination with the bent bars N , pivoted bar O , and bar P' , whereby the brick is suddenly ejected from the mold and time afforded for charging the mold with clay, as set forth.

6. In a brick-machine, the combination of the mold-wheel, the mold-cavities of which are provided with loose bottoms and adapted to be raised to eject the brick and lowered again into position by a detachable bar secured to the operating parts, as set forth.

7. In a brick-mold, the loose bottom P , provided with a dovetailed segmental groove, o , in combination with the dovetailed ejecting-bar P' , as and for the purpose set forth.

8. The mold-wheel R , provided with a pin, s , in combination with the grooved stroke-bar p , whereby any surplus dirt is removed from the mold and the mold left evenly full, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD FALES.

Witnesses:

I. N. TICHENOR,
M. D. PHELAN.