W. H. Hovey,

Brick Machine,

No. 52,852, Patented Feb. 27, 1866.

Fig: 2.

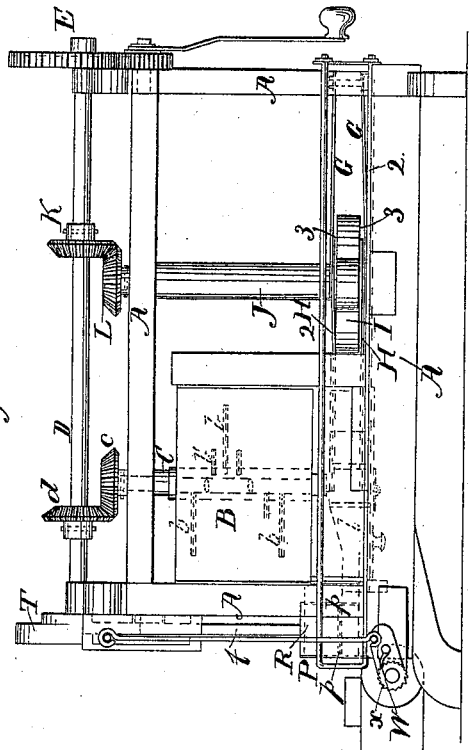


Fig: 3.

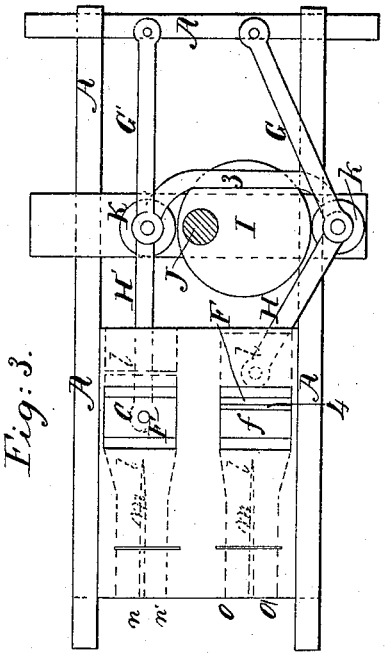
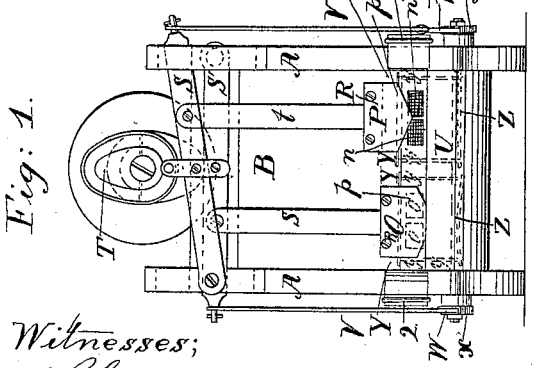


Fig: 1.



Witnesses;
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AM. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS)

UNITED STATES PATENT OFFICE.

WILLIAM H. HOVEY, OF SPRINGFIELD, MASSACHUSETTS.

IMPROVED BRICK-MACHINE.

Specification forming part of Letters Patent No. **52,852**, dated February 27, 1866; antedated February 16, 1866.

To all whom it may concern:

Be it known that I, WILLIAM H. HOVEY, of Springfield, Hampden county, Commonwealth of Massachusetts, have invented a new and Improved Brick-Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to letters of reference marked thereon.

In the drawings, Figure 1 is an end view; Fig. 2, a side view, and Fig. 3 a plan with part of the mechanism removed.

The subject of brick-machines has been so long and thoroughly discussed as to render it unnecessary for me to enter into any explanations or remarks in regard to the utility of such invention; and I will therefore waive this and commence immediately to show the construction and operation of my invention, and also some of its advantages over others of the same sort.

It consists of a frame, A, supporting and holding in place the mechanism, a hopper, B, in which the clay is cut and ground to the proper consistency by the knives *b b* on the shaft C, turned by the bevel-gear *c* on C and *d* on the main or driving shaft D, which is connected at E to a suitable power, usually steam or horse.

Under the hopper B are two boxes or channels, *l l*, into which the clay falls through the openings *e f* in the bottom of the hopper B. In these boxes or channels two plungers, F F, work backward and forward, moved by the knee-joint levers G M and G H. These levers, connected by the piece 3, are moved by the cam I on the shaft J, which receives its motion from the driving-shaft D through the bevel-gears K L. This cam acts on the lever by the rollers *k k'* on each side. These channels *l l'* are connected in all directions after they pass the openings *e f*, and near the front they are each divided into two spaces by the partitions *m m*, and at the front from four openings, *n n' o o'*.

The cutters or knives O P now remain to be described. These each consist of two knives, *p p'*, fastened on the piece R in such a manner that the space between them shall be equal to the length of the bricks to be made. These are attached to connections *s t*, which extend up and are fastened to and moved by the levers S S, operated by the double cam T. The levers S S' also operate the roll U by means of the connecting-rods V V' and the pawls and ratchets W X and W' X'.

The tops of the openings *n n o o'* are covered by two plates, Y Y', connected by the rods *y y* and *y' y'* to springs Z at the under side, the use of which I will hereinafter describe.

Its operation is as follows: The clay being placed in the hopper B, it is ground up by the action of the knives *b b*. It then runs into the boxes *l l* through the openings *e f*, and is forced by the plungers F F', operated by the levers G H, into the contracted space in the front of the partitions *m m'*, so as to make two bricks in front of each plunger. These are now cut off by the knives or cutters O P, and at the next push of the plunger are forced out through the openings *n n o' o* onto the band or apron *b* and all carried off.

It will be seen that in the mechanical arrangement of the cam I and knee-joint levers G H and G' H', connected by S, I obtain a very powerful and sure pressure on the plungers, and also that the strain and the machine is received on the rods 2 2 at the sides, which bind together the two ends of the machine, and thus make it very strong where strength is most needed.

As the clay is pressed before the plunger along the channel *l* the superfluous clay is pushed up into the hopper, so that only just the right amount of clay can be got into the channels *l l* before the plunger. As this is pressed along, the channel, contracting, presses the clay together, so that when it arrives near the front it is very much hardened and compressed, forming, if desired, pressed brick, the pressure varying with the amount of contraction. As the clay is pressed along it comes under the cutters O P, and they coming down cut off sufficient of the mass to form on each side two bricks. Now, as this cutter continues down, the lower edge passes the bottom of the opening and the clay is completely inclosed on all sides, and as the cutters continue their motion downward the piece R strikes plate Y and gives a further pressure to the brick, which fills out and smooths off the whole surface and fills out the corners, and

also the cutters, in moving back, smooth off the sides. These knives of the cutters are beveled on the lower inside edge, so as to cut the brick more smoothly.

The plungers F F′ are faced with a piece of hard wood, 4, to give a smooth and moistened surface to this end of the plunger, so that the clay may not stick to and be carried back with it, as would be the case with iron. The brick having been cut off, at the next push of the plunger it is forced out onto the band U, which is caused to move from the machine by the revolution of the roller U, operated, as before mentioned, by the cam T through the levers S S and rods V V, and pawls and ratchets X X W′ W′.

The openings *e f* in the bottom of the hopper are beveled on their upper edges to allow the clay to fall easily into the channels underneath.

It will be seen that by removing the cutting arrangement and forming the openings *n n o o* differently tile-moldings, &c., of almost any length may be formed by this machine.

Now, having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the cam L, knee-joint levers G H and G′ H′, connection B, and plungers F F′, when used in combination with a suitable feeding apparatus and frame, substantially as described.

2. The combination of the cam T, one or more levers, S S, suitably connected thereto, one or more cutters, O P, and a similar number of boxes or channels, *l l*, through which the clay is forced, substantially in the manner and for the purpose described.

3. The combination of the cam T, lever or levers S S, connecting rod or rods V, one or two pawls, W, and ratchet X, and the roller U, substantially in the manner and for the purpose described.

4. Contracting the channels *l l′* at the front, substantially as described.

5. The combination of the pieces Y Y, rods *y y*, and spring Z with the channel or channels *u u*, substantially as described.

6. The combination of the hopper B, having the opening or openings *e f* in its bottom, with the channel or channels *l′ l′* and a suitable arrangement for forcing the clay along this channel or channels and for cutting off and removing the same when formed into bricks, substantially as described.

7. Forming the channeled chamber *l* in such a manner that when the plunger reaches the front end of the opening *e f* there shall be sufficient clay in the space between the front end of and the point to which it must travel to form the amount of bricks required, substantially as described.

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Witnesses:
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