E. Geary,

Brick Machine.

No. 84,816. Patented Dec. 8, 1868.

Fig. 5.

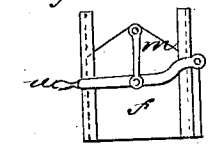


Fig. 1.

Fig. 2.

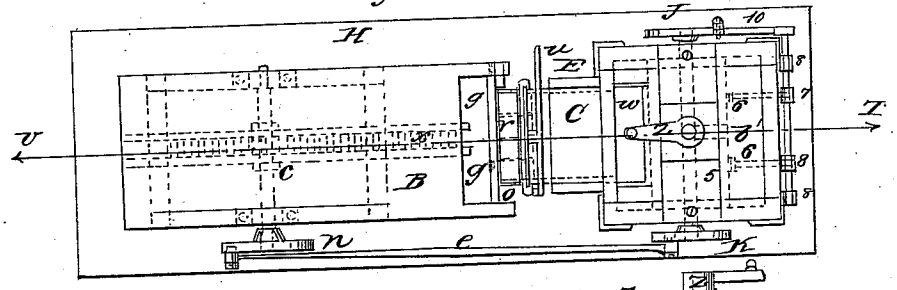


Fig. 4.

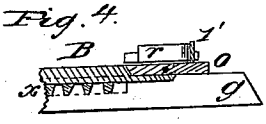
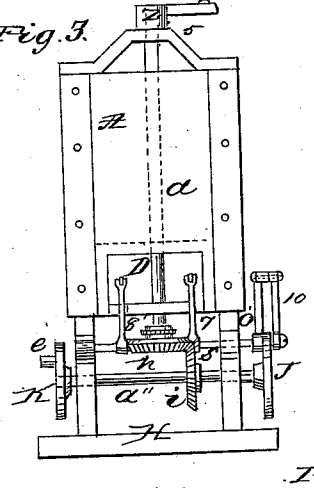


Fig. 3.



Witnesses

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EVANS GEARY, OF HARRISBURG, PENNSYLVANIA.

Letters Patent No. 84,816, *dated December* 8, 1868.

IMPROVED BRICK-MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, EVANS GEARY, of the city of Harrisburg, county of Dauphin, and State of Pennsylvania, have invented a new and useful Improvement in "Brick-Making Machines;" and I hereby certify that the following is a full, clear, and exact description of the same, as regards its construction and manner of operation, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a longitudinal elevation, showing the working-parts in section, said section being take on the line U T, fig. 2.

Figure 2 is a plan or top view of the machine, and

Figure 3 is a rear-end elevation.

Figures 4 and 5 are representations of some of the details.

In figs. 1 and 3, A represents the receptacle or tub, in which the clay is deposited to be ground or tempered.

Said tempering is accomplished in the ordinary way, that is, by means of a vertical shaft, armed with proper-shaped cutters or arms, which, upon the revolution of the shaft *a*, so cut into and work up the clay that it is thoroughly mixed or tempered.

Said shaft and arms are represesented in fig. 1, *a* being the shaft, and 1, 2, 3, &c., the arms.

The tempering-vessel A is mounted upon a suitable supporting-frame, consisting of four upright pieces, braced or held together by a horizontal string-piece on each side of the machine.

To the upper end of shaft *a*, a crank or beam is attached, by which motion is communicated to said shaft.

The tub A is constructed with two bottoms, *b* and *b'*. The upper one, *b'*, is cut away in front, at *w*, fig. 1, so as to permit the tempered clay to be forced, by the action of the revolving cutters 1, 2, 3, down through the opening *w*.

Between the upper and lower bottoms, *b* and *b'*, the compressing-plunger D is placed, as seen in fig. 1. It is so constructed as to embrace the shaft *a*, and be permitted to move back and forth between said bottoms, a portion of its body in the rear of the shaft *a* being cut away, so as to permit of said motion.

At the bottom of the tempering-tub A, upon its front side, an open box, E, is formed.

In said box is inserted another box, C, of such relative size as to permit said box C to move easily back and forth in box E, and at the same time neatly fit it.

Upon the front end of box C, a sliding gate or cut-off, *f*, is arranged to work in grooved strips or guides, that are fastened to the box C, so as to hold or retain the cut-off *f* in a vertical position.

The cut-off or gate is operated by the lever *u* and link *m*. (See fig. 5.)

The box C corresponds in height "inside" to the length of a brick to be made, and in width to the number of bricks that the machine is designed to make at one stroke or operation, as the said box C is provided with dividing-bars or walls that are adjusted vertically between the bottom and top sides of said box, and immediately in the rear of the cut-off *f;* the spaces intervening between said bars representing the width of a brick.

A sliding table, B, is placed in front of the tempering-box A. (See fig. 1.)

Said table is mounted upon a proper supporting-frame, and has attached to the end nearest the tub A the tilting-plate *o*, the front portion of the table B being cut away in a proper manner to receive it, as shown in fig. 2.

Said plate *o* is pivoted, at its ends, to the projecting portions of table B, in such a manner that it can be moved up and down freely upon said pivots.

Said pivots are inserted somewhat out of centre of the width of said plate *o*, nearer the upper edge than the lower, so that said plate will incline to hang vertically, as seen in fig. 1, when permitted to assume that position.

Upon the plate *o*, a flange, 1', (see fig. 4,) projects, at a right angle to it.

This flange is designed to hold in place the moulds *r*.

These are made similar to the ordinary hand-moulds in common use; that is, said moulds are made without a bottom or top, any suitable number being formed together, as seen in fig. 2, at *r*.

The sliding table B is made of such relative height to the box C, that the moulds *r*, when in position upon the plate *o*, as seen in fig. 1, will exactly correspond with the box C, and in effect form a continuation of said box when the cut-off *f* is raised.

The box C is prevented from being forced entirely out of the containing-box E by the flange-plate *v*, (see fig. 1,) that projects from the box C, under the bottom, *b*, of the tub A, and said plate being slotted for the accommodation of retaining-screws. It thus acts as a stop to the box C.

The sliding table B rests upon the top of suitable guides or strips that are fastened to the top of the frame *d'*.

Upon said frame are also placed the strips *g g'*, a suitable distance apart. These are intended to strike against the tilting-plate *o*, and raise it to a position in a line with the table B. This occurs when said table is slid back from the box C, and for a purpose that will hereinafter be explained.

Upon the under side of the table B, a rack, *x*, having proper-sized cog-teeth, is placed. Said rack is made about the length of the table, and is rigidly attached, in a central position, in relation to the sides of said table, and also in a line parallel to them, as is shown in fig. 2.

This rack *x* receives the motion imparted by the toothed arch *c*.

Said arch is rigidly attached to a shaft that is supported in proper position under the table B.

Upon the supporting-frame *d'*, (see fig. 1,) upon the

one end of said shaft, a crank-wheel, *n*, is securely fastened.

Upon the lower end of the upright shaft *a*, a bevel-wheel, *h*, is secured firmly.

Said wheel has its hub grooved for the reception of the forked lever *s*.

The bevel-wheel *h* meshes into another bevel-wheel, *i*, that is adjusted in position upon the shaft *a''*. (See fig. 3.)

Upon said shaft *a''*, a crank-wheel, K, is secured upon the projecting end.

This crank-wheel is placed upon the same side of the machine as the crank-wheel *n*, and is connected to it by the rod *e*.

The points of connection on each wheel are so arranged that while the wheel K is permitted to make an entire revolution, the wheel *n* simply oscillates, making about one-third of a revolution "back and forth."

This is accomplished by connecting the crank-pin on wheel *n* farther from the centre of said wheel than the pin on wheel K is placed.

The result of this arrangement is to convert the rotary motion of wheel K into a reciprocatory moving of the arch or toothed segment *c*, and thus cause the bed B to move back or forward, as required.

Upon the shaft *a''*, on the other projecting end, is fastened the crank-wheel J. (See figs. 2 and 3.)

Said wheel is connected, by means of link 10, to crank *o'*, on rock-shaft *s'*. (See fig. 3.)

Said shaft is held in proper position on the rear of frame *d* by the journal-boxes 8 8, and carries the cranks or arms 7 8'.

These are connected by links 6 6 to the compressing-plunger D, (see figs. 1 and 2,) and thus a reciprocating motion is given to said plunger D.

The connection or adjustment of the plunger is so arranged that it will move forward toward the box C as the sliding table B is made to approach the cut-off *f* on box C.

The forked lever *s*, fig. 1, being pivoted at D', is intended to throw the wheel *h* out of connection with the wheel *i*, and thus allow the tempering-process to be continued by the shaft *a* running on while the movement of the table B is stopped, as may be desired.

Having given a full description of the several parts of the machine, its manner of operation is as follows:

Clay being placed in the tempering-tub A, and motion given to the shaft *a*, the clay is ground up and forced down by the action of the arms 1, 2, 3, through the opening *w* in front of plunger D, the machine being supposed to be in the position shown in fig. 1, that is, with the moulds *r* in position against the cut-off *f*.

Said cut-off is now raised, and the continued action of the machine forces the clay out through the front of box C into said moulds, perfectly filling them by the forcing or compressing-action of the plunger D.

The cut-off is now forced down, and at the same moment the reciprocatory action of the bed B carries the filled moulds away from the cut-off, the backward movement of the table B causes the tilting-plate *o* to be lifted in a line with the face of the table, by its passing over the strips *g g'*. The filled moulds are thus brought to the hand of the off-bearer, and, as he takes them away, empty ones are substituted in their place, and the operation of making bricks is continued, as may be desired.

I would further state that I do not claim, broadly, the separate or independent use of the tempering-tub A, feeding-box C, cut-off *f*, nor the open-bottom moulds *r*, as said devices are well known, and have been used before in other combinations intended for the same purpose; but

What I do claim as new, of my invention, and desire to secure by Letters Patent of the United States, is—

The arrangement herein described of the tempering-tub A, compressing-plunger B, adjustable feeding-box C, cut-off *f*, tilting-plate *o*, open-bottom moulds *r*, and sliding table B, all operated as herein set forth.

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Witnesses:

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