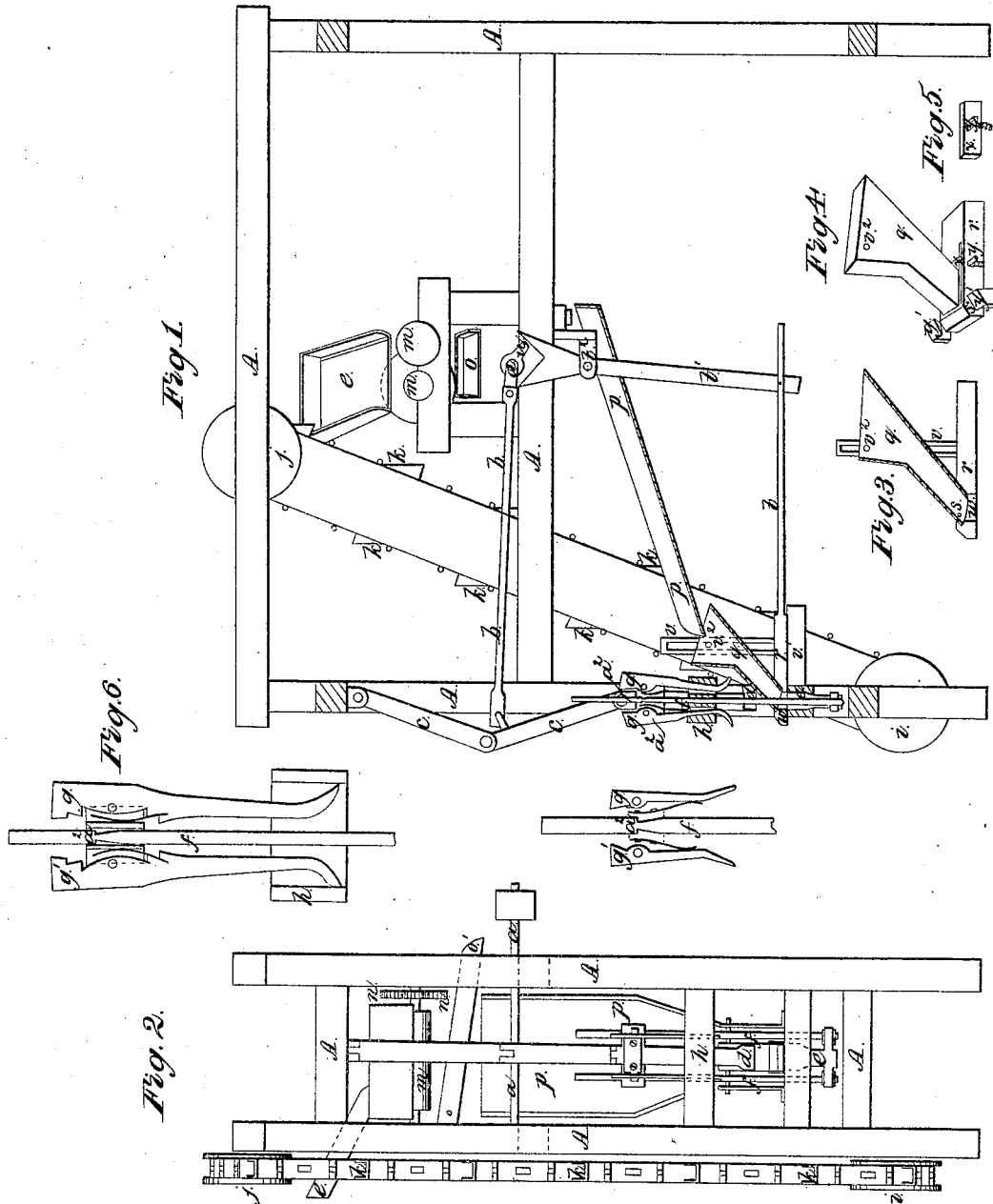


*B. H. Brown,*  
*Brick Machine.*  
*No. 1,026.* *Patented Dec. 8, 1838.*



# UNITED STATES PATENT OFFICE.

BENJAMIN H. BROWN, OF WASHINGTON, DISTRICT OF COLUMBIA.

## MACHINE FOR PRESSING BRICKS FROM DRY CLAY.

Specification of Letters Patent No. 1,026, dated December 8, 1838.

*To all whom it may concern:*

Be it known that I, BENJAMIN H. BROWN, of the city of Washington, in the District of Columbia, have invented certain new and useful Improvements in Machinery for Pressing Bricks from Dry Clay; and I do hereby declare that the following is a full and exact description thereof.

In this press the pressure of the brick is effected by the action of toggle joint levers, as in several other machines for the same purpose, and there are several other parts which are similar to such as have been previously employed, the main difference between this machine and such as have been heretofore used being in the manner in which the pulverized clay is supplied to the mold, the clay condensed at the ends to give the requisite solidity to the brick, and the brick removed after the pressure has been effected.

Figure 1 in the accompanying drawing is a side view of the machine, a part of the frame, and one side of the hopper, being removed in order that the operating parts may be the more distinctly shown, Fig. 2 is an end view, and Figs. 3, 4, 5, and 6 a more detailed representation of the hopper and its appendages.

A, A, A, is the frame of the machine; *a*, *a* the main shaft from which the motion is communicated to the respective parts. Upon this shaft there is a cam, or crank, which operates the rod *b*, *b*, and the levers *c*, *c*, constituting the toggle joint.

*d*, is the piston by which the clay is condensed, and *e*, the lifter by which it is raised from the mold after the pressure has been effected.

*f*, *f*, are the lifter rods, which are raised by the shears *g*, *g*, the upper ends of which catch in notches *a*<sup>3</sup> or offsets on the rods, and their lower ends, as the piston rises, coming into contact with the sides of mortises in the cross piece *h*, are thereby closed, the lifter liberated, and, by its weight, falls down, so as to constitute the bottom of the mold, and is ready for a new operation. The shears are closed by means of springs.

The clay which is to be pulverized and pressed is deposited on the ground or in a trough surrounding the drum *i*, around which and the upper drum *j*, passes an endless band of elevators *k*, *k*, which deliver

the clay on to the inclined trough *l*, down which it passes to the pulverizing rollers *m*, *m*, which are made of cast iron and are different in size that they may move with different velocities, and thus have a rubbing as well as a rolling motion, which however, may be effected by the mode of gearing them together by the cog wheels *n*, *n*. Under the pulverizing rollers there is a sieve *o*, *o*, through the meshes of which the pulverized clay passes on to an inclined plane or trough *p*, *p*, by which it is conducted into the feeding hopper *q*. The stones and other foreign matter fall off from the end *o*, of the sieve.

Motion is to be communicated to the drums of the elevators, to the pulverizing rollers, and to the sieve, in any of the ordinary modes of effecting such objects.

The hopper *q*, consists of two parts, the containing part *q*, and the foot *r*, to which it is attached by pivots on either side, and seen at *s*, *s*. The foot *r*, is attached to and worked backward and forward by the rod *t*, and the lever *t*' hung upon a fulcrum at *t*<sup>2</sup>. This lever is forked at its upper end, and made to move backward and forward by means of a cam *u*, on the end of the shaft *a*, or by any analogous contrivance. The hopper *q*, stands between two standards *v*, *v*, attached to the shelf or platform *v*', upon which is the foot. These standards have vertical slots in them which receive pins *v*<sup>2</sup>, on either side of the hopper, in consequence of which arrangement as the foot is slipped forward the hopper works on the pivots *s*, and its upper, or open, end still remains under the trough *p*, *p*, to receive the clay which falls from it. The fore end of the foot *r*, comes against the brick as it is raised by the lifter, and pushes it forward, ready to be removed. The lifter then falls, and the opening *w*, in the foot, coming over the mold, the clay passes from the hopper into and fills it.

It is necessary to increase the quantity of clay in each end of the mold beyond what would fall directly into it from the hopper, as otherwise the brick will not be compact and sound at the ends and corners. To effect this I place two metallic plates *x*, one on each side of the opening in the bottom of the foot, and as the mold is filled with clay from the hopper these are caused to

descend and operate as condensers at each end and to rise again and allow the space which they occupied to be again filled with clay before the hopper retires from over the mold. The moving of these plates may be effected in the following manner:  $y$ , is a pin inclined at its upper surface, which inclined part passing under corresponding inclinations on two pieces  $y'$ ,  $y'$ , fixed to the frame of the machine, forces the plates  $x$ ,  $x$ , down as the hopper advances, and as it recedes they are raised by a spiral spring under the pin  $y$ , or by other means, as for example, the pins  $y$ , may enter two inclined grooves which will both depress and raise the followers at the proper period.

I intend to use in presses of this kind for equalizing the pressure upon brick my box, for which I obtained Letters Patent on the 23rd day of October, 1837; but boxes of a different construction may be employed.

What I claim as my invention and desire to secure by Letters Patent, is—

1. The above described manner of constructing the hopper for filling the mold, by which construction it is made to tilt as it advances, still keeping its back edge in a position to receive the clay from the inclined plane while the mold is filled through the opening under the foot, and the pressed brick pushed off by it.

2. I also claim the provision for condensing the clay in each end of the mold preparatory to the pressing of the brick, that is to say by means of the two condensers as herein described, the whole operating substantially in the manner set forth.

B. H. BROWN.

Witnesses:

B. K. MORSELL,  
LINTON THORN.