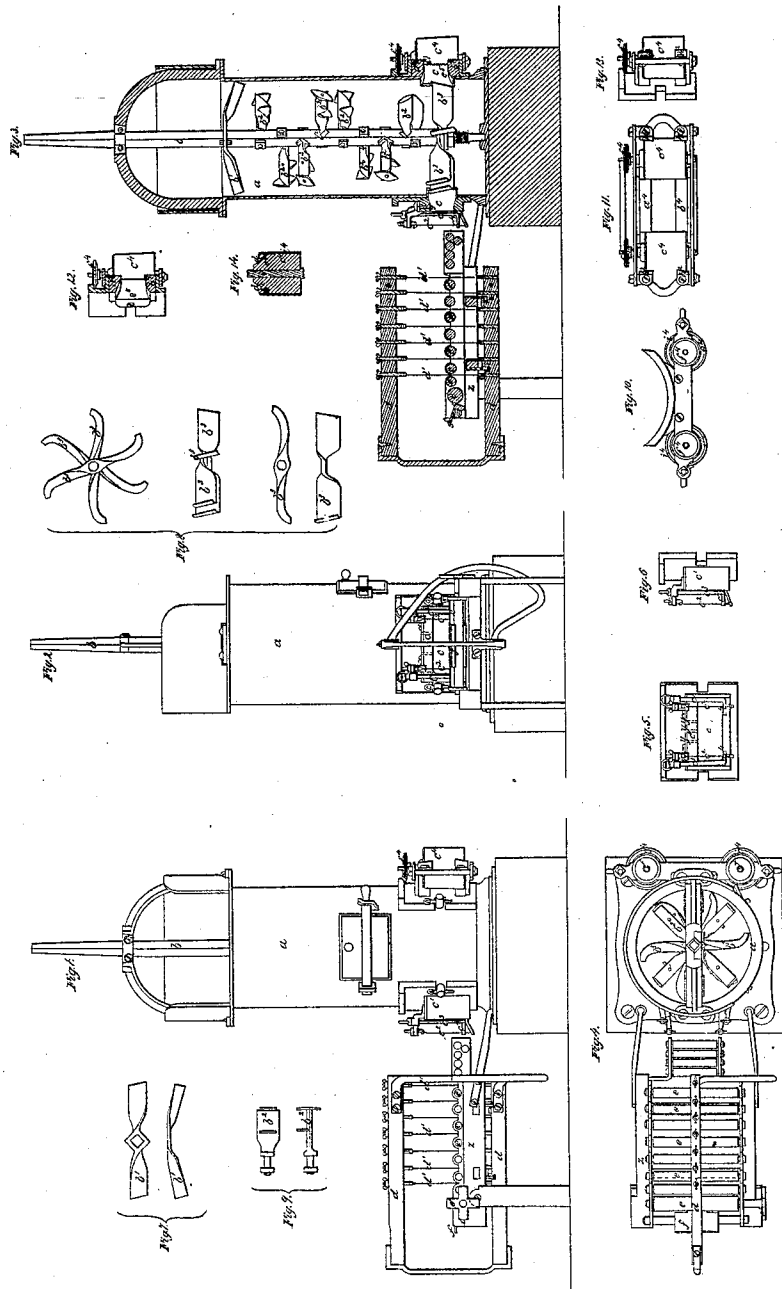


H. Clayton, *Brick Machine.*

No. 13,123

Patented June 26, 1855.



UNITED STATES PATENT OFFICE.

HENRY CLAYTON, OF DORSET SQUARE, ENGLAND.

BRICK AND TILE MACHINE.

Specification of Letters Patent No. 13,123, dated June 26, 1855.

To all whom it may concern:

Be it known that I, HENRY CLAYTON, of the Atlas Works, Upper Park Place, Dorset Square, in the county of Middlesex, England, a subject of the Queen of Great Britain, have invented or discovered new and useful Improvements in the Manufacture of Bricks and Tiles; and I, the said HENRY CLAYTON, do hereby declare the nature of the invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement thereof—that is to say:

In this invention of improvements in brick and tile making machinery, the molding is accomplished by forcing the material through molding orifices applied to the cylinder of a pug mill or other suitable machine, the axis of which is arranged with several inclined blades, and so as to deliver or force the material through such orifices or dies.

The molding orifices are made larger than is desired for the size of a brick and the material is forced against and cut by wires set to the desired width, and the wires are kept clean by instruments moved along them. Next the clay is received upon a frame of rollers or carriers and is cut transversely into bricks by a movable frame of parallel wires.

In order to separate the bricks one from the other, after the molded mass has been cut by the wires, the outermost brick when it comes to the end of the carrying rollers or carrier is received upon and by a roller or rollers, the surface of which is caused to move faster than the carrying rollers or carrier, by which means a brick is separated from the rest and laid upon a pallet or board which is placed on a movable or tilting platform. And in order that my said invention may be more readily understood and carried into effect, I will proceed more particularly to describe the construction thereof, the same being exhibited in the accompanying drawings; of which—

Figure 1, shows a side elevation of a brick making machine having my improvement. Fig. 2, an end view of the same; Fig. 3, is a vertical, central and longitudinal section; and Fig. 4, a plan of such a machine.

In these figures, *a*, is a hollow cylinder or hopper having an upright shaft, *b*, arranged on it axially, and turning in bearings and having blades *b'*, *b*², *b*³ fixed on it.

These blades have a screwed or twisted form given to them. Those blades marked *b'*, *b*², during their revolution work, temper, pug the clay, and at the same time force it downward to be pressed through the molding orifices, *c*, *c*, by the series of curved and twisted blades, *b*³, *b*³.

c', *c'* are the dies or molds (shown separately in side and end views in Figs. 5 and 6,) through which the clay or other plastic material is forced.

*c*², *c*² are wires stretched across the front or discharging mouth of the dies, *c'*, *c'* as shown. These wires divide and cut the material into the desired form as it is pressed through the dies and against the end.

*c*³, *c*³ are rods which slide through sockets fixed to the front of the dies, *c'*, *c'* and have arms, *c*⁴, *c*⁴ at their lower ends which embrace the wires *c*², *c*², so that when they are raised, the arms *c*⁴, *c*⁴, may scrape the wires and remove any roots or other accumulated matter therefrom.

Troughs to contain water may be placed over the mouth piece to each die. The bottom of each trough may be perforated with conical holes which may be covered by a layer of wool or other fibrous material and a plate placed over this layer, capable of being pressed down and regulated by tightening screws so as to regulate the supply of fluid from the trough to the dies; the upper surface of the mouth piece to each die being perforated as seen at *g*, *g*, in order to make the fluid flow upon the clay and moisten it and ease it out of the die. A frame *d* is hinged upon the cross bars on the underside of the frame *z*, of the delivery rollers *e*, *e*, and has a series of wires *d'*, *d'* stretched across it and between the delivery rollers as seen in the drawing. When this frame of wires is moved from side to side of the frame *z*, the wires *d'*, *d'*, cut the stream or mass of clay transversely into bricks. The rollers *e*, *e*, *e*, are carried by bearings in the sides of the delivery frame, and they receive and support the clay.

e' is a hand wheel placed or fixed on one end of the last roller *e*, the same being to enable a person to give an accelerated motion to such roller and to a brick as it is received on the roller from the other delivering rollers. By these means each brick is successively moved on to a pallet or board which an attendant lays on the plate or table *f*, which then assumes a horizontal

position, it being made to turn or tilt for the convenience of receiving a brick from the roller. The brick after being received on the pallet may be removed therefrom by a
 5 workman to a truck or wheelbarrow or some means by which it is to be conveyed away from the machine, to be subsequently pressed, baked or hardened.

Figs. 7, 8, and 9, show separate views of the blades b' , b^2 , b^3 .

I will now describe the working of the machine. The cylinder or pug mill being continually supplied with clay or other plastic material, the blades, b' , b^2 , will
 15 work, temper and pug the same and force it downward so as to cause it to be received and pressed by the blades b^3 , in a continuous stream through and from each molding orifice there may be to the machine and
 20 through the dies and against the vertical cutting wires. From thence it passes to and on the receiving rollers and is separated into bricks by the wires d' , d' . Those wires
 25 marked c^2 , c^2 should be frequently cleansed by the workman drawing up the slides thereof so as to remove the roots or other accumulations. The clay having been forced upon the receiving frame the required distance in order to be cut or severed into pieces
 30 of the desired size for bricks, the action of the machine so far as the delivery of the clay is concerned, should cease while the cutting wires are drawn through the material. When this has been accomplished the
 35 machine may again be put into motion, and the bricks so formed should be well strewed with dry sand before commencing to deliver them. At the end of the delivery frame is the delivery roller e , and the bal-
 40 anced receiver f , hereinbefore alluded to. Upon this receiver when the machine is in use is placed a wooden pallet or board for

receiving and removing the brick from the machine. The receiver should incline toward the brick when the pallet is placed
 45 upon it, and as the bricks are successively forced outward by the action of the machine to the center of the delivery roller, the workman by giving a partial revolution to the wheel affixed at the end of the roller or
 50 rollers will give a quicker motion to the brick which draws it forward and relieves it from the brick in rear of it and throws it upon the pallet on the receiver, he continuing to deliver and remove the bricks as just
 55 described. By the time all the cut bricks are removed from the cutting frame another stream of clay should arrive at the end of the delivering frame and be in readiness for being cut transversely as before. The mold-
 60 ing mouth or die may be fitted with rollers as seen at c^4 , c^4 , in Figs. 3, 10, 11, 12, 13, and 14, the last five figures being detailed views of such a mouth and its rollers.

Having thus described my brick making
 65 machine and the manner of operating the same, I would have it understood that I do not confine myself to the exact construction of the details herein given so long as I do not change the principle of my invention. 70

I claim—

1. Combining with the wires c^2 , c^2 , their sliding scrapers or cleansing mechanism made to operate essentially as explained.

2. I also claim the combination of the
 75 accelerating roller e , and the tilting board f , with the delivery rollers or their equivalent.

In testimony whereof I have hereunto set my signature this eleventh day of December A. D. 1854.

HENRY CLAYTON. [L. S.]

Witnesses:

JOHN R. DARKER,
 CARY SMITH.