# Brown & Fuller,

# Brick Machine.

No. 6,933. Patented Dec. 11, 1849.

Fig. 1.

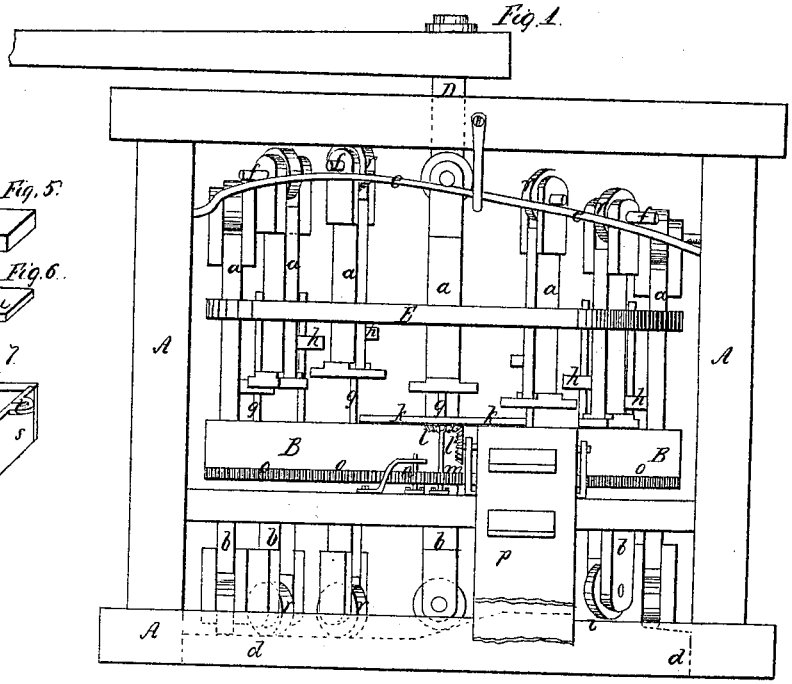


Fig. 5.

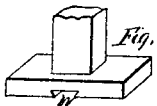


Fig. 6.

Fig. 7.

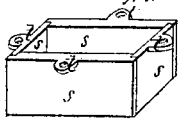
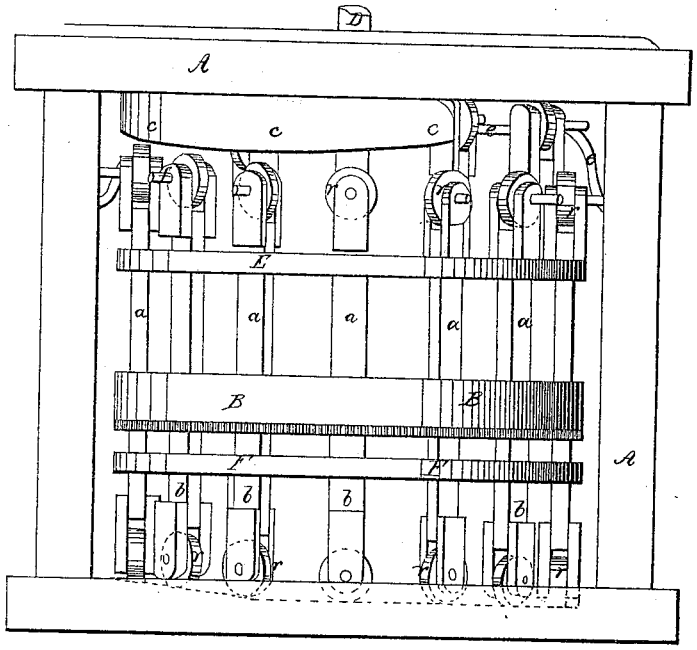


Fig. 2.



# UNITED STATES PATENT OFFICE.

JOHN T. BROWN AND MOSES FULLER, OF MIDVILLE, GEORGIA.

## BRICK-PRESS.

Specification of Letters Patent No. 6,933, dated December 11, 1849.

*To all whom it may concern:*

Be it known that we, JOHN T. BROWN and MOSES FULLER, of Midville, in the county of Burke and State of Georgia, have invented certain new and useful Improvements in Machines for Making Bricks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, in which—

Figure 1 is a view of the front of the machine; Fig. 2, a view of its back; Fig. 3 is a view of the mold wheel, and Fig. 4 a top view of the machine. In Fig. 1 the charging tray C, Fig. 4, is removed, to show more plainly other portions of the machine. Figs. 5 and 6 represent perspective views of the facings or shoes of one of the removable linings of the molds.

Our machine is principally composed of a strong frame A, a horizontal wheel B containing the molds; two sets of pistons *a b*, the former (*a*) acting upon the upper surface, and the latter *b* upon the lower surface of the clay; two series of stationary tracks *c d* the former (*c*) to confine the upper, and the latter (*d*) the lower set of pistons in the positions required to give the requisite pressure to the clay; together with guide disks, friction rollers, &c., as hereinafter described.

The mold wheel B Fig. 3 is furnished with a series of perforated or molds, of sufficient depth to contain enough unpressed clay to form a brick, in addition to the space occupied by the lower pistons. The number of the molds depends upon the size of the machine. This mold wheel B is attached to the vertical shaft D to which the power is attached to the vertical shaft D to which the power is applied that drives the machine. Above the mold wheel is placed the guide disk E of the upper pistons; and below the mold wheel is placed the guide disk F of the lower pistons. Both guide disks are firmly fixed to the shaft D in such a manner that the relative positions of the mold and guide disks cannot be changed by the action of the moving power.

The upper pistons are lifted to a sufficient distance above the mold wheel B to allow of their clearing the bricks and giving sufficient space for the entrance of clay, by means of the stationary inclined rod or track *e e* over which pass the pins *f f* fastened to the upper extremities of the upper pistons. To the end of each piston rod is adapted a friction wheel *r* running on one of the inclined tracks *c d*. In order to keep the pistons more truly in a vertical position during their action, a guide rod *g* is applied to each of them, on which rod the guide *h* slides.

It is not necessary that the upper track *c* should be a complete circle, but only long enough to effect the pressure upon the upper surface of the bricks. The lower track *d* forms a complete circle, commencing immediately below the charging tray, it runs level until it reaches a point directly opposite the commencement of the upper track *c* at this point it begins to ascend and continues ascending, with an inclination corresponding with the descent of the upper track *c* until it reaches the point *i* Fig. 1 where the pistons are sufficiently raised to allow the bricks to be discharged, as soon as this has been effected the track drops, allowing the pistons to descend to their positions for admitting clay into the molds.

The clay previously prepared in any suitable manner is placed upon the tray C and shoved upon the mold wheel B (the upper pistons being kept at a sufficient distance above the mold wheel by the rod *e* whose office has been before mentioned) as the mold wheel revolves the pins *f f* of the upper pistons are disengaged from the bent rod *e* allowing the pistons to descend upon the clay in the cavities of the molds. The mold wheel continuing to revolve, the friction wheels of the upper pistons come in contact with the upper track *c* and by passing along its descending surface, force these pistons downward upon the clay, at the same time the friction rollers of the lower pistons running upon the ascending surface of the lower track, force the lower pistons upward. The extremity of the upper track being reached, the upper pistons are free to rise, while the lower pistons running upon the still ascending surface of the lower track, force the bricks before them until by the revolution of the mold wheel B they are successively delivered to the discharger, at the same time the pins in the rods of the upper pistons come in contact with the ascending portion of the rod *e* by whose action they are restored to their first position for receiving clay.

The machine thus constructed performs its office with such rapidity that it has been found almost impossible in practice to remove the bricks by hand as fast as they are

made. To obviate this difficulty we have adapted a mechanical discharger worked by the machine. This consists of a revolving bar *k* put in motion by the wheels *l m n* the last of which gears into a spring wheel attached to the mold wheel B by which it is driven. By the action of this discharger the bricks are shoved upon the endless band *p* from which they are taken to the drying floor.

In brick machines as usually constructed the molds are made part and portion of the mold wheel so that it is impossible to replace one without procuring an entirely new wheel, the same is true of the pistons which are usually constructed of one pice firmly united to their rods, so that in case the surface of the piston is injured by accident the whole has to be thrown away. To obviate these disadvantages we make the molds separate and distinct from the mold wheel to which they are attached, each mold being formed of four plates *s* with bars *t* attached to them by which they are secured to the mold wheel B, so that in case of accident or of some molds wearing out before the others they can be removed and replaced by new ones without disarranging the rest of the machine. A similar arrangement has been adapted by us with regard to the pistons which are furnished with removable shoes or facings Fig. 6 formed of a flat plate *u* to which the dovetailed snug *v* is attached which fits into a corresponding socket *w* Fig. 5 on the piston; these shoes can be dismounted and replaced by the workmen without disarranging the rest of the machine. By these two improvements the expense of running a machine is greatly lessened and long delays are avoided, and the means of repair are so simple that the workmen themselves can keep the machine in order, without the assistance of a machinist or millwright.

In ordinary machine the pressure is effected by a single piston applied to but one surface of the brick, by this arrangement the material becomes denser on the side to which the pressure is applied, and the bricks being unequally pressed are not uniform in structure. This want of uniformity is a great disadvantage in the subsequent operation of drying and burning, and hence the large proportion of cracked or misshapen bricks which is found to be the case where brick machines are used. To obviate disadvantages and consequent loss we use two pressure pistons as have been herein described, whereby both the top and bottom of the brick are equally pressed and its structure rendered perfectly uniform.

What we claim as our invention, and desire to secure by Letters Patent is:

The combination of the horizontal mold wheel B with the mechanical discharger *k* and endless conveyor *p* in the manner and for the purpose herein set forth.

In testimony whereof we have hereunto signed our names in the presence of two attesting witnesses this sixteenth day of February 1849.

JOHN T. BROWN.
MOSES FULLER.

Witnesses:
BENJAMIN BROUCK,
JAMES M. JONES.