J. Grant,

Brick Machine.

No 52,245. Patented Jan. 23, 1866.

Fig. 1.

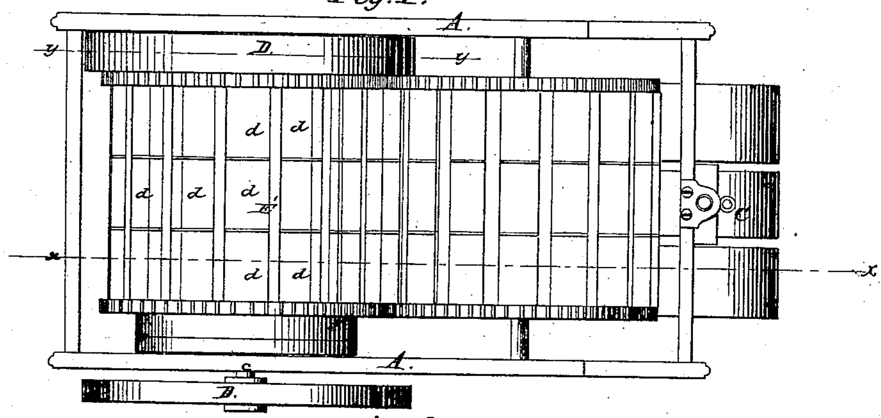


Fig. 2.

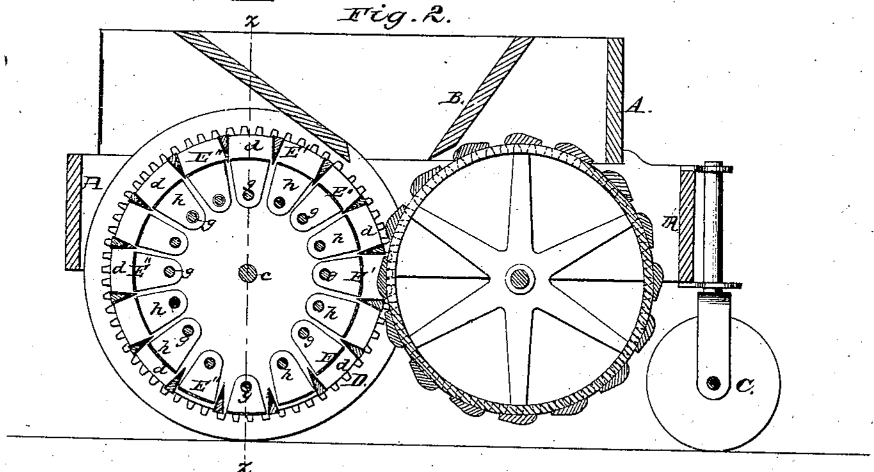


Fig. 3.

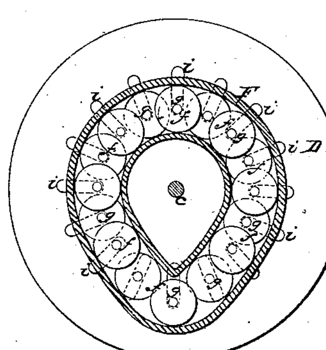
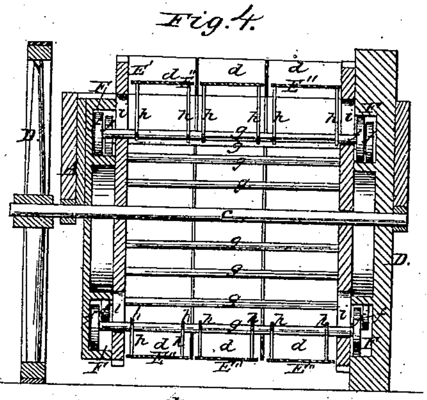


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOSEPH GRANT, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO HIMSELF AND HENRY T. GRANT, OF SAME PLACE.

IMPROVED BRICK-MACHINE.

Specification forming part of Letters Patent No. 52,245, dated January 23, 1866.

To all whom it may concern:

Be it known that I, JOSEPH GRANT, of Providence, in the county of Providence and State of Rhode Island, have invented a new and Improved Brick-Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a plan or top view of this invention. Fig. 2 is a longitudinal vertical section of the same, the line *x x*, Fig. 1, indicating the plane of section. Fig. 3 is a similar section of the driving-wheels, the plane of section being indicated by the line *y y*, Fig. 1. Fig. 4 is a transverse vertical section of the same, taken in the plane indicated by the line *z z*, Fig. 2.

Similar letters of reference indicate like parts.

This invention relates to certain improvements in that class of machines for making bricks which are denominated "rotary and locomotive brick-machines," and which are described in Letters Patent granted to me May 13, 1851, and numbered 8,093. In said machines the bricks are formed by the action of two cylinders set horizontally in a suitable framing and revolving in opposite directions, being driven by gearing which also propels the machine forward as the brick is being made. One of these cylinders is fitted with molds, the bottoms of which form followers which are operated by rollers moving in fixed grooved channels, and by cams producing the drop motion. The second or pressing cylinder is provided with plates working and fitting into the molds of the other cylinder, pressing the clay, which is fed from a hopper above and between the two cylinders, the clay being drawn into the several molds by its own weight and the revolving motion of the cylinders, and the bricks deposited on the ground or surface prepared for them in regular layers or line as the machine moves forward. A roller in front clears or prepares the ground or surface on which the bricks are to lie.

The improvement which constitutes the subject-matter of this present invention consists in arranging the rollers which transmit the motion of the grooved cams to the followers in different planes, one half of the rollers being placed below the other half in such a manner that rollers of a larger diameter can be used than if the rollers are all placed in one and the same plane, whereby the motion of the followers is facilitated and the mechanism is less liable to wear and tear than it is with the original arrangement.

A A is the frame of the machine, and B the hopper through which the clay is fed. The front part of the machine is supported by a leveling-roller, C, which serves to clear or prepare the ground for the reception of the bricks, and the rear part of the machine rests on wheels D D, which are fitted on the ends of the mold-cylinder shaft *e* and turn with it.

The mold-cylinder E′ is made of iron or other suitable material, and has on its circumference or surface spaces *d d d*, forming molds. In these molds work the followers E″, being fitted into the same so that they form their bottoms and move freely up and down, motion being given to them by the action of cam-grooves F on rollers *f*, which turn on spindles *g*, that extend lengthwise through the cylinder and pass through slots *i* at both ends thereof, being connected to the followers E″ by lugs or ears *k* attached to said followers, as shown in Fig. 2 of the drawings.

The cam-grooves F are firmly secured to the frame A, and they are formed as shown in Fig. 3, one being fastened on either end of the cylinder. The rollers *f*, traveling in the cam-grooves, cause the followers E″ to move in the molds *d* back, so as to admit the clay, and then forward, so as to compress the clay, and finally to push out the ready-made brick.

If the rollers *f* are all placed in one and the same plane their diameters cannot be made any larger than the distance between the spindles *g*, and since this distance is limited by the width of the bricks the diameters of said rollers necessarily become so small that they are liable to wear out very quick, and the wear-and-tear of the machine is so great that its operation is expensive and subjected to much expense for repairs. This difficulty is obviated by placing the rollers *f* in different planes, as clearly shown in Figs. 3 and 4 of the drawings, one half of the rollers being situated close to the inner surface of the cam-groove, and the

other half close to the outer surface thereof, said cam-groove being of such a depth that room is obtained to place the rollers one above the other, as shown particularly in Fig. 4.

By this arrangement I am enabled to make the diameter of the rollers fully twice as large as heretofore, and the machine runs comparatively easy and with little wear.

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

Placing the rollers *f* which work in the cam-grooves F in different planes, substantially in the manner and for the purpose described.

The above specification of my invention signed by me this 10th day of October, 1865.

his
JOSEPH × GRANT.
mark.

Witnesses:
HENRY T. GRANT,
M. M. LIVINGSTON.