E. R. Gard,

Brick Machine.

No. 59,831. Patented Nov. 20, 1866.

Fig 1.

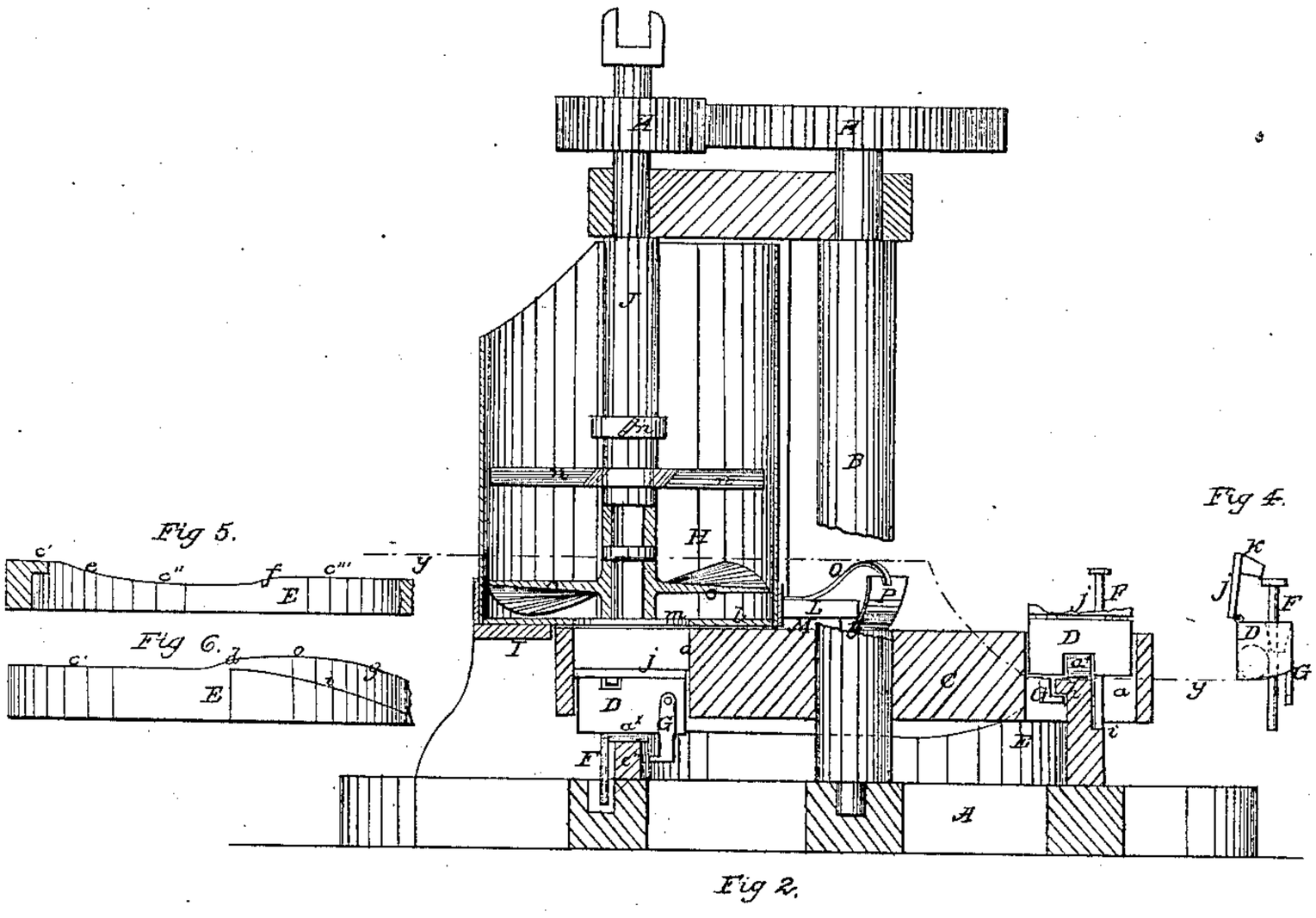

Fig 2.

Fig 3.

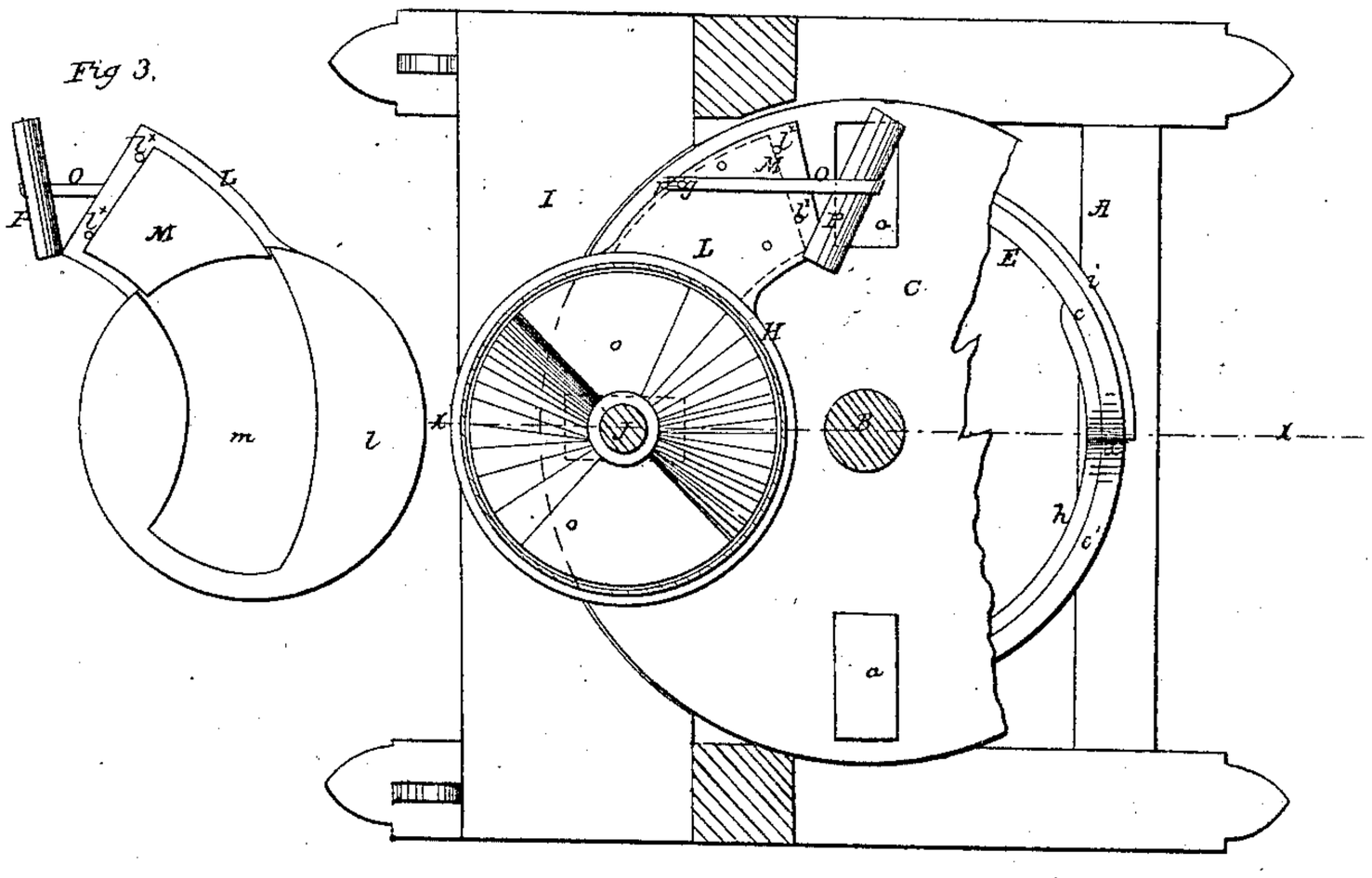

Fig 4.

Fig 5.

Fig 6.

Witnesses;

D. F. Barrington
Wm. Treurn

Inventor;

E. R. Gard
Per Munn & Co
Attys

United States Patent Office.

IMPROVED BRICK MACHINE.

E. R. GARD, OF CHICAGO, ILLINOIS.

Letters Patent No. 59,831, *dated November* 20, 1866.

SPECIFICATION.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, E. R. GARD, of Chicago, in the county of Cook, and State of Illinois, 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 a part of this specification, in which—

Figure 1 is a vertical central section of my invention taken in the line *x x*, fig. 2.

Figure 2, a horizontal section of the same, taken in the line *y y*, fig. 1.

Figure 3, a detached inverted plan of the mud mill of the machine.

Figure 4, a detached end view of one of the mould-followers of the machine.

Figure 5, a vertical section of the annular way or track by which the mould followers are operated.

Figure 6, a side view of fig. 5.

Similar letters of reference indicate like parts.

This invention relates to a new and useful improvement in that class of brick machines in which a rotary mould-block is used in connection with mould-followers, operated by means of an annular track provided with cam projections. The within-described invention consists in the application of hooks and anti-friction rollers to the followers, in connection with lateral projections on the way or track, whereby the followers are raised and lowered in the moulds by a positive movement, and the proper operation of the followers ensured.

The invention also relates to an improved means for "striking" the moulds, removing the surplus clay therefrom, whereby that work is performed in a perfect manner, and the striking plates allowed, in case of any foreign substance being in the moulds, to become detached or to free themselves, so as to prevent the straining or breaking of any of the working parts of the machine.

A represents a framing, which may be constructed in any proper manner to support the working parts of the machine; and B is a shaft placed vertically in said framing, and having a mould-block, C, of circular form keyed or otherwise secured on its lower part. The block, C, has holes, *a*, made in it at equal distances a part, four holes being made or used in this instance, to receive followers, D, a follower being placed in each hole, *a*, and these holes are made of rectangular form and constitute the brick-moulds. In the under side of the mould-block or mould-wheel, C, there is an annular recess to receive an annular way or track, E, which is firmly secured to the base of the framing. This annular way or track has a portion, *c*, higher than any other part; and adjoining this elevated portion, *c*, there is a part, *c'*, a trifle less elevated; and adjoining *c'* there is a depressed or lower portion, *c''*, the lowest of all; and then a portion, *c'''*, a trifle higher than *c''*—see figs. 2, 5, and 6. These portions of different elevations adjoin each other, not abruptly, but by inclined planes, the inclined plane *d* joining *c c'*; the inclined plane *e* joining *c' c''*; the inclined plane *f* joining *c'' c'''*; and the inclined plane *g* joining *c''' c*.

At the inner side of the way or track E, at the upper parts of the two most elevated portions *c c'*, and the inclined planes *d e*, there is a lateral rib or flange, *h*, and at the exterior of the way or track E, by the sides of the inclined plane *g* and the most elevated part *c*, there is an inclined rib or flange *i*.

The followers D are provided with a hinged lid *j*, having a projection *k* at their under sides, which projections, when the lids *j* are down, fit in the upper ends of holes made vertically through the followers, and pins F are fitted in these holes and allowed to slide freely up and down therein. To each follower there is attached a hook, G, and an anti-friction roller, a^{x}, is fitted in the bottom of each follower.

H represents a cylindrical case, which rests on a bed-piece I, on on the framing A, and projects over the mould-wheel C. This case is provided with a bottom, *l*, having a curved opening, *m*, made in it, as shown in fig. 3, which opening is over the mould-wheel, and within the case H there is a central straight shaft J, provided with lateral arms *n*, and spiral pressing or discharging arms *o o*, the latter being on the lower end of the shaft.

This case, with its central shaft provided with arms, constitutes the mud mill, and it is essentially the same as those in common use; and the shafts J and B are connected by gears, K, power being applied to the shaft J, horse or other power being used.

L is a plate which projects from the bottom, *l*, of the case H, and has a plate or knife, M, underneath it, which is designed to strike off the superfluous clay from the top of the moulds. This plate or knife, M, is re-

tained in position by two wooden pins, l^x l^x, which are fitted in the outer part of the plate I—see, more particularly, fig. 3. P is a curved plate or scraper, which has a bar, *o*, attached to it, said bar being attached by a screw, *q*, to plate L, as shown clearly in fig. 2, the screw *q* passing through an oblong slot in the end of *o*, into plate L.

The operation is as follows:

The clay, properly moistened, is thrown into the upper end of the case H, the shafts J and B being rotated by any convenient power; the arms *u* grind and temper the clay, and the pressing or discharging arms, *o o*, force the clay into the moulds *a* as the wheel rotates, the followers D being down at the lower parts of the moulds when the latter receive the clay, and consequently the rollers a^x are upon the lowest portion, *c''*, of the way or track E, for it will be understood that the followers all rest upon the way or track. The followers D, when the moulds receive the clay, are at such a depth that the moulds will receive an excess of clay, or rather more than is required for a brick, and as the moulds, by the rotation of the wheel C, pass from underneath the opening *m*, the moulds pass up the inclined plane *f*, and the plate M strikes off the superfluous clay, and the plate P also serves as a strike. In case a stone or other hard foreign substance enters a mould and projects a short distance above it, so that the plate M cannot perform its function, the wooden pins l^x l^x will be broken under the pressure and the plate M forced out, and the plate P will also be forced out, owing to the manner of connecting the bar O with plate L. By this arrangement the plates M, P, as well as other parts of the machine, are prevented from being strained or injured in consequence of the contingency above mentioned occurring. As the followers pass up the inclined plane *g* they are raised in the moulds *a*, and the bricks raised out from the moulds, the lids *j* being elevated by the pins F passing up the inclined plane *i*, and the bricks discharged upon the wheel C. As the followers descend the inclined plane *d*, the hooks G catch under the rib or flange *h* and draw down the followers and close the lids *j*. The rollers a^x obviate a large amount of friction.

The rising and falling followers have been previously used, as well as the rotary mould-wheel or block, and the annular way or track; and I therefore do not claim said parts broadly, or in themselves considered.

But I do claim as new, and desire to secure by Letters Patent—

The striking-plate M and plate P, when applied or arranged substantially as shown and described, to yield or detach themselves in the event of stones or other foreign substances entering the moulds, as set forth, the whole being constructed and operating in the manner and for the purpose herein described.

E. R. GARD.

Witnesses:

T. BROWN.

JULIUS KATZ.

59,831.