

G. S. TIFFANY.
Brick-Machines.

No. 156,188.

Patented Oct. 20, 1874.

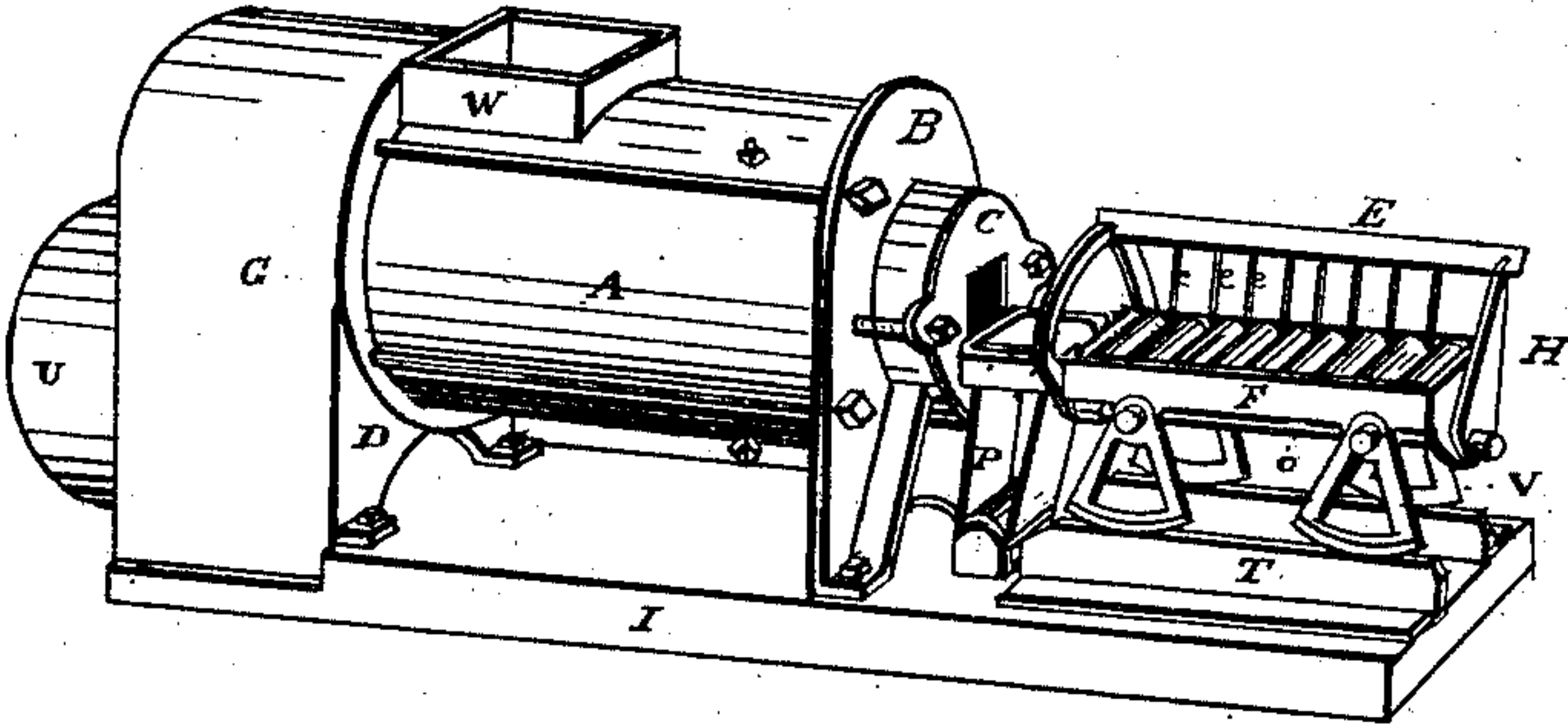


Fig. 1.

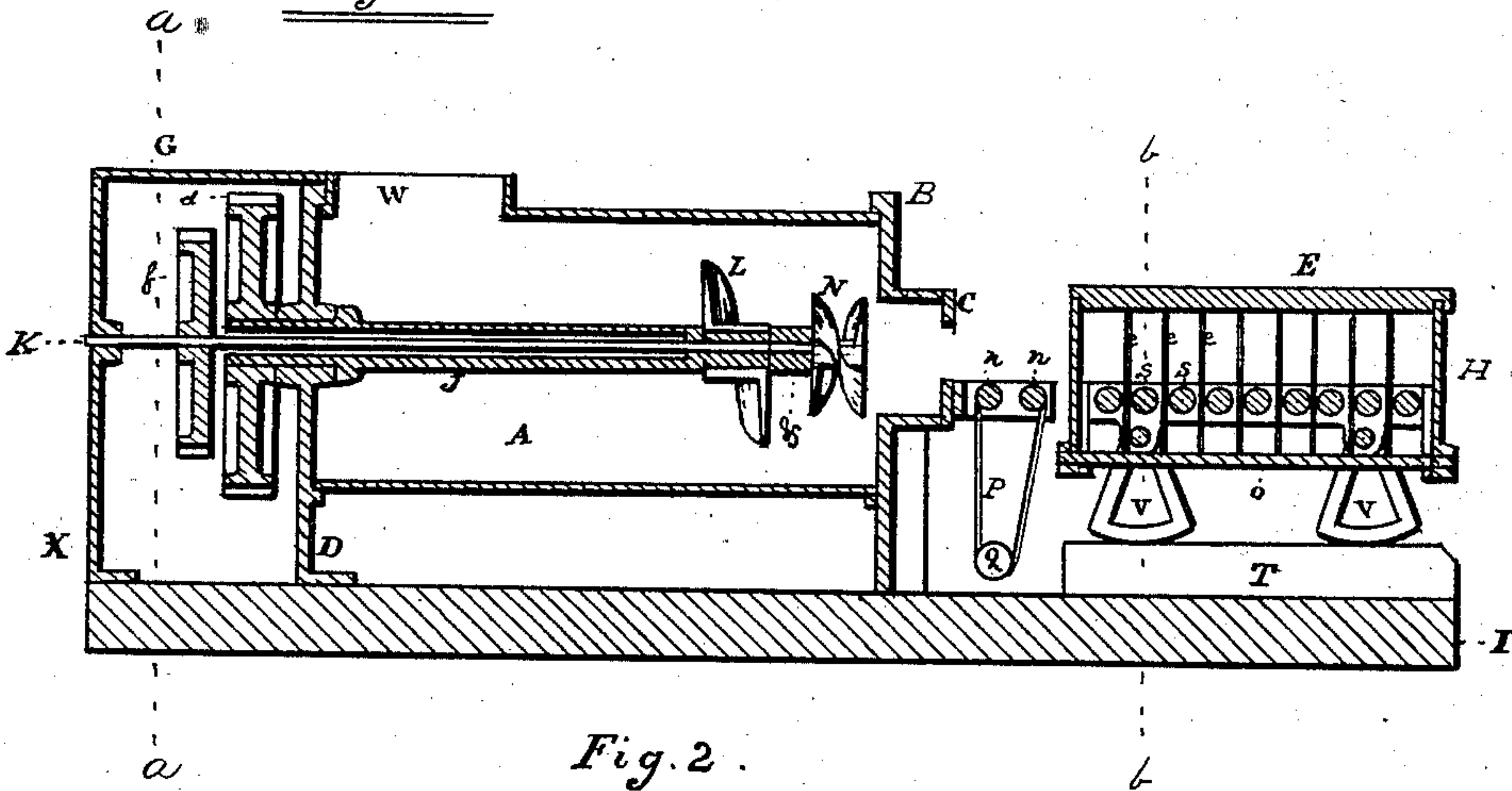


Fig. 2.

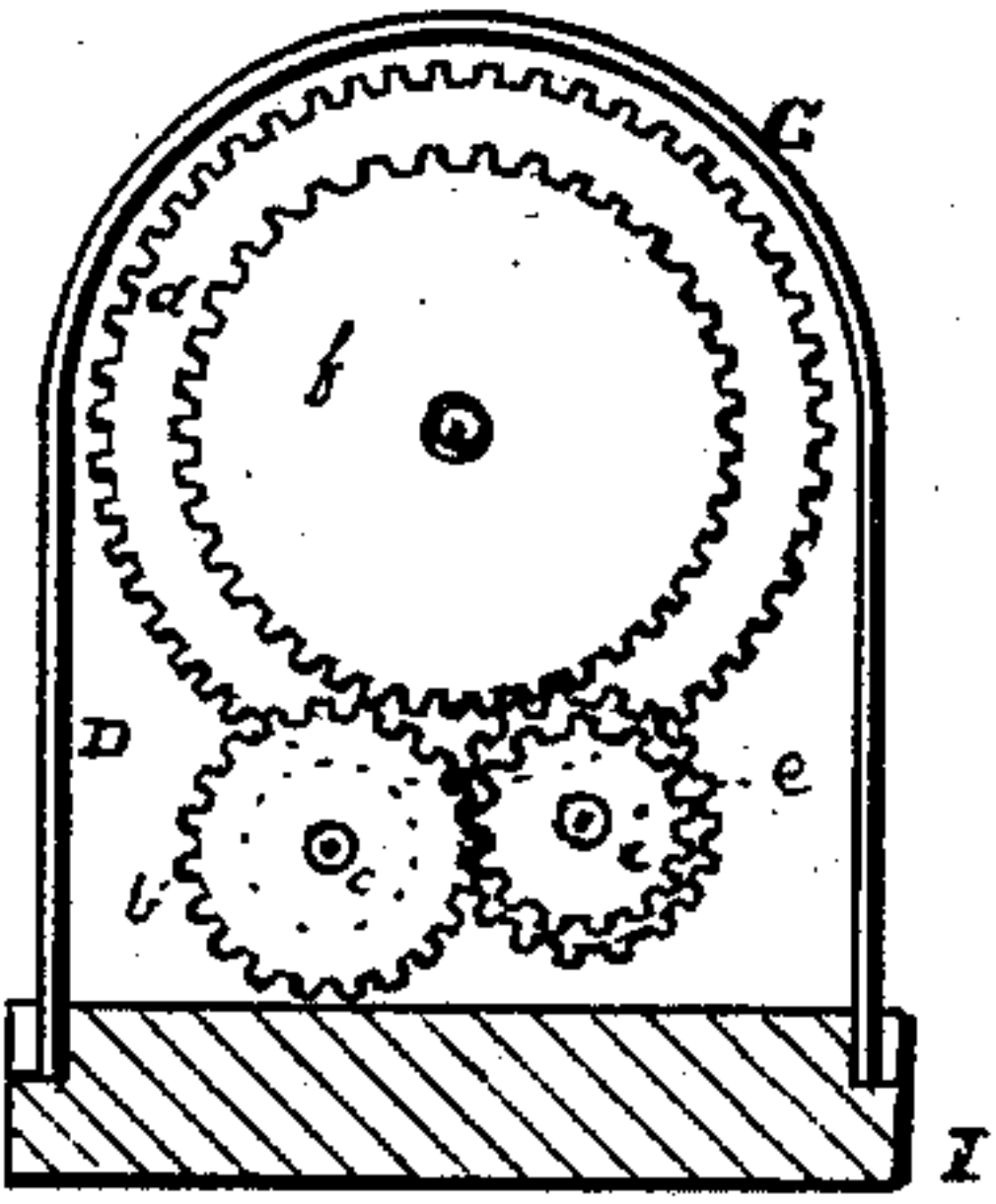


Fig. 3.

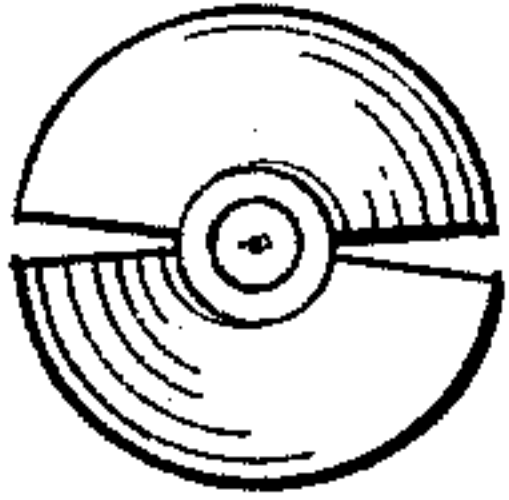


Fig. 4.

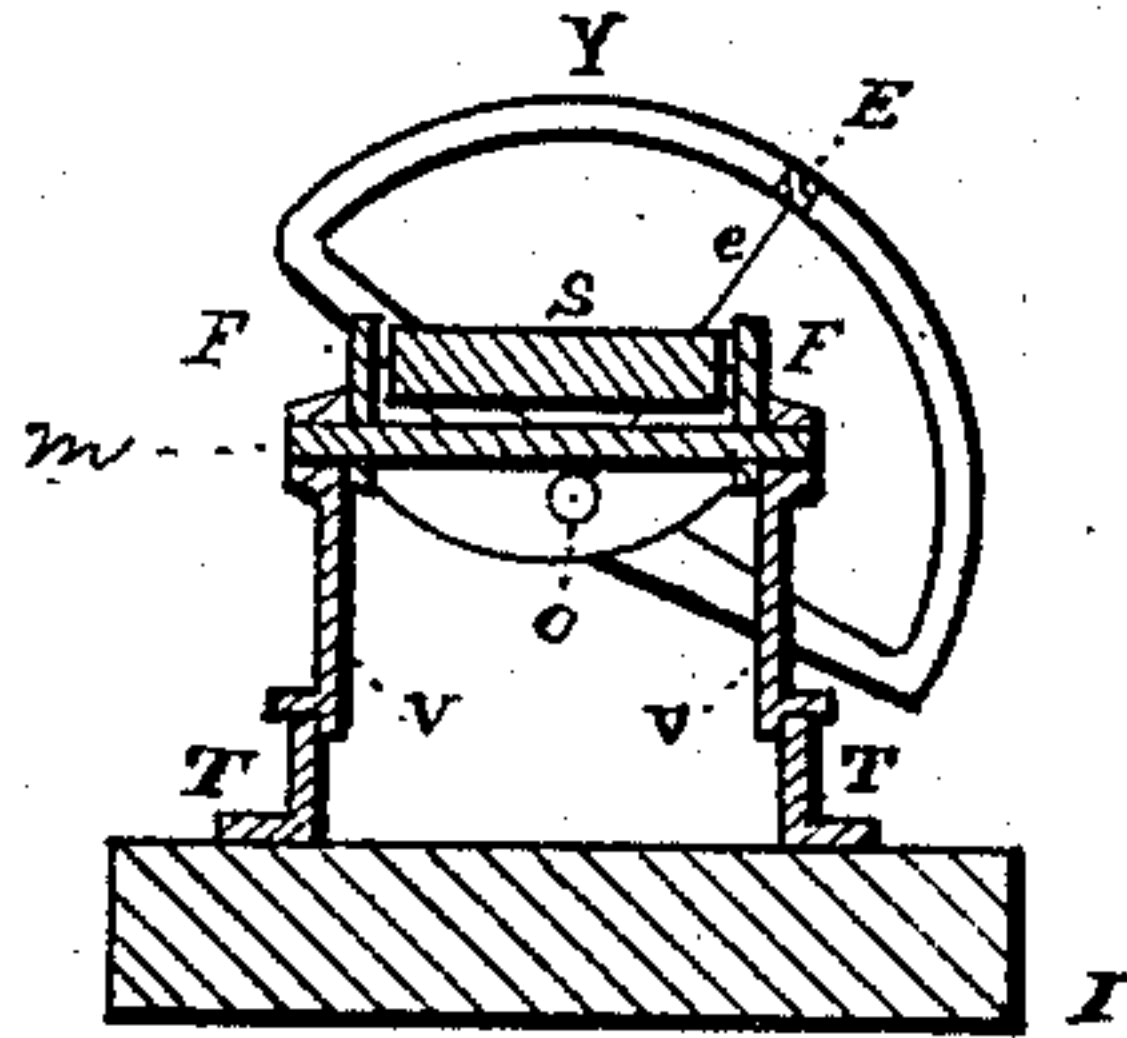


Fig. 5.

Witnesses:

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GEORGE S. TIFFANY, OF LONDON, CANADA.

IMPROVEMENT IN BRICK-MACHINES.

Specification forming part of Letters Patent No. **156,188**, dated October 20, 1874; application filed March 18, 1874.

To all whom it may concern:

Be it known that I, GEORGE S. TIFFANY, of London, Canada, have invented Improvements in Machines for Making Bricks, of which the following is a specification:

In the accompanying drawings, Figure 1 is a perspective view of a machine embodying my invention. Fig. 2 is a central vertical longitudinal section of the same, in which it has not been thought necessary to represent all the gear-wheels. Fig. 3 is a vertical cross-section taken on the line *a a*, Fig. 2. Fig. 4 is the plan of a screw, N, shown in Fig. 2. Fig. 5 is a cross-section on the line *b b*, Fig. 2, showing the parts toward the grinding-mill.

Like letters indicate like parts in all the figures.

My invention relates to that class of brick-machines which, after grinding the clay, force it through a die by means of revolving beaters or screws, and, as it issues from the die, cut it into sections forming bricks.

In all machines of this class, where the mill is in a horizontal position, the clay is forced through the die by beaters or screws attached to the grinding-mill shaft.

The first part of my invention consists in forcing the clay through the die by means of a molding-screw, N, on a shaft, K, which runs through a tubular mill-shaft, J, my object being to confine the pressure by which the clay is forced through the die more nearly to the area of the die, reduce the strain on the mill-shaft J and the gearing by which it is driven, and, as some qualities of clay require less grinding than others, to increase the rapidity of molding without increasing the speed of the mill-shaft J, by giving the shaft K greater motion as compared with that of shaft J. The cylinder A is supported by and between the front plate B and head-plate D. The back plate X and head-plate D furnish bearings for shafting, and, with shield G, inclose and protect the gear-wheels. The plates B D X rest upon and are bolted to a suitable base, I. The molding-shaft K has a bearing in the back plate X, and in a collar, and which is held in position by rods (not represented in the drawing) running from it to the cylinder. The mill-shaft J has a bearing in the head-plate D, and one on the molding-shaft K near the bearing.

It is provided with a gear-wheel, *d*, a screw, L, similar to screw N, and a number of knives (not represented) spirally arranged between the screw and the head-plate D. The shaft K is driven more rapidly than the shaft J, and in an opposite direction, and the knives and flanges of the screws L N are so arranged as to force the clay toward the die when the shafts are made to revolve. The front plate B has a flanged circular opening directly in front of the screw N, over which is bolted the die C.

The second part of my invention relates to the known device for cutting off, in which the rack F moves with the clay in the operation of cutting, and consists in the use of rockers V V V V as supports for the rack F, and also for the purpose of allowing the rack F to be more completely governed by the movement of the clay in the operation of cutting. T T is a track, on which rest the rockers V V V V. The rockers are keyed to two shafts, *m m*, two on each, that have bearings in the sides of the rack F, all so constructed and arranged as to allow the rack F to have a longitudinal reciprocating motion on the rockers V V V V.

Flanged rollers of small diameter set in a frame have been heretofore used for this purpose. Their diameter could not be increased without making the frame cumbersome, and the frame required supports.

It will be seen that this improvement simplifies construction by dispensing with much of the frame-work, renders the rack F more susceptible to the required movement, and less liable to vibration.

Fig. 4 represents a suitable arrangement of gearing, which will be understood from the description of the operation of the machine, which is as follows: Motion being given to the driving-shaft by means of a belt on band-wheel U causes gear-wheels *i* and *e* on same shaft to revolve. Wheel *e* meshes with wheel *f* on molding-shaft K, and gives motion to the screw N. Wheel *i* meshes with wheel *b* on intermediate shaft, and gives motion to wheel C, represented by dotted circle on same shaft; and wheel C, meshing with wheel *d*, gives motion to the grinding-mill shaft J. The desired motion being thus given to the grinding and molding parts, clay, properly moistened, is

thrown into the hopper W, and is ground and forced forward by the beaters on the mill-shaft J. The more rapid revolution of the screw N tends to cause a vacuum, on account of which the clay flows the more readily to the screw N, by which it is taken and forced through the die C onto the belt P and rollers of the rack F. The operator of the cut-off holds the rack in position until he wishes to cut, when he allows the rack to move with the clay, and while moving he draws the bar of the cutter-frame E over to the opposite side of the rack, causing the wires *e e*, &c., to pass through the clay, cutting it into bricks. They are removed, and the rack moved toward the die to cut again. The bricks are sufficiently dry and firm to be placed directly in the "bake."

I am aware that a screw operated by means

of a shaft running through a tubular mill-shaft has been used to force the clay into molds and for other purposes in a machine which formed the brick, by pressing the clay into the molds. I do not claim such devices.

I claim as my invention—

1. In a brick-making machine having a tubular mill-shaft, J, the combination of the die C and molding-screw N on shaft K, substantially as described.

2. The use of the rockers V V V V, substantially as described, for supporting the rack F and allowing it to have a reciprocating motion.

GEORGE S. TIFFANY.

Witnesses:

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