L. T. SCOFIELD.

TILE-MACHINERY.

No. 173,504. Patented Feb. 15, 1876.

Fig. 1.

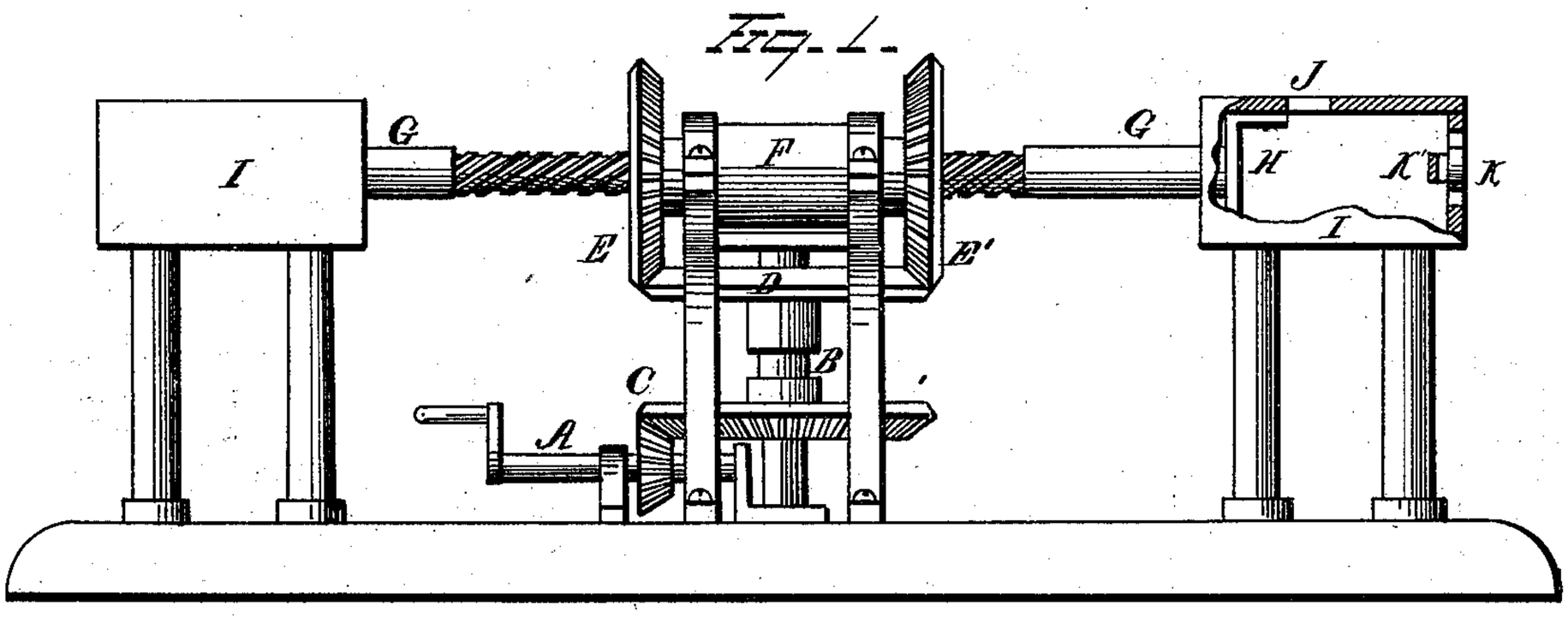


Fig. 2.

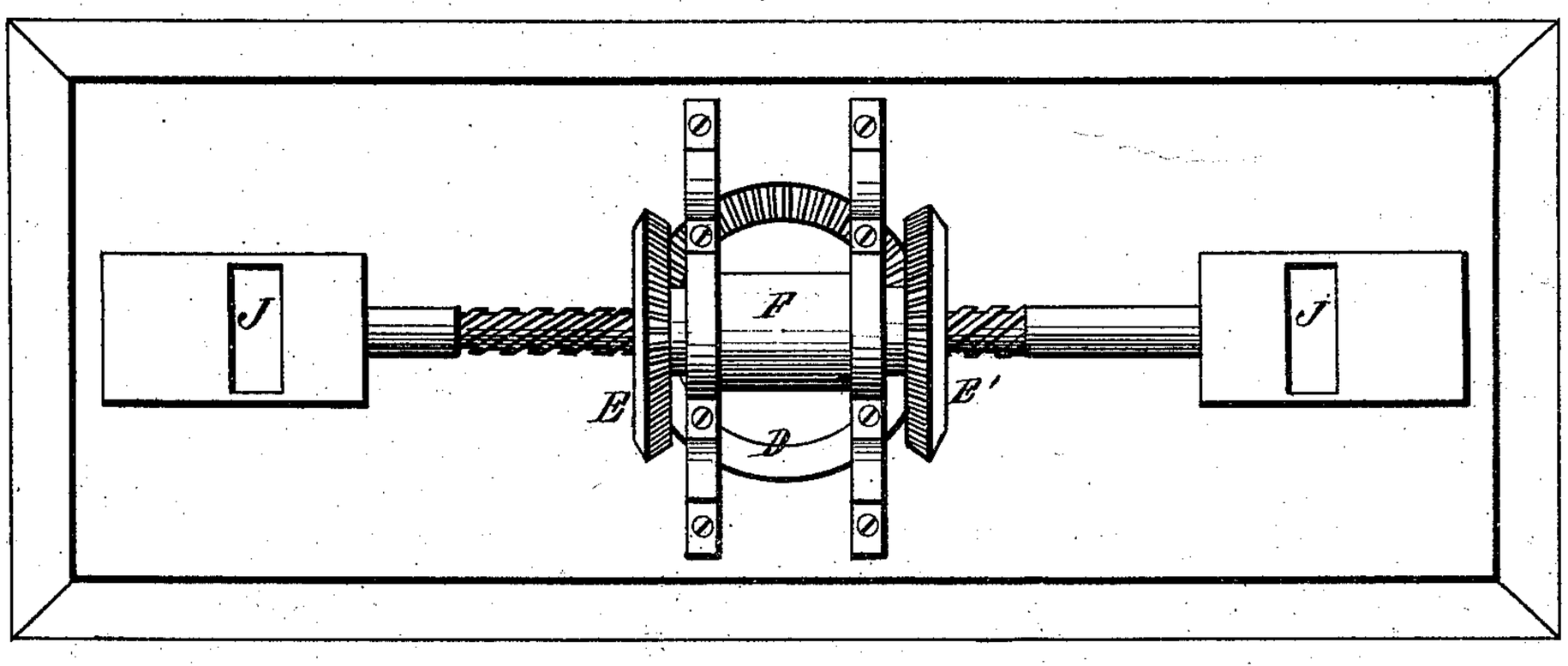


Fig. 3.

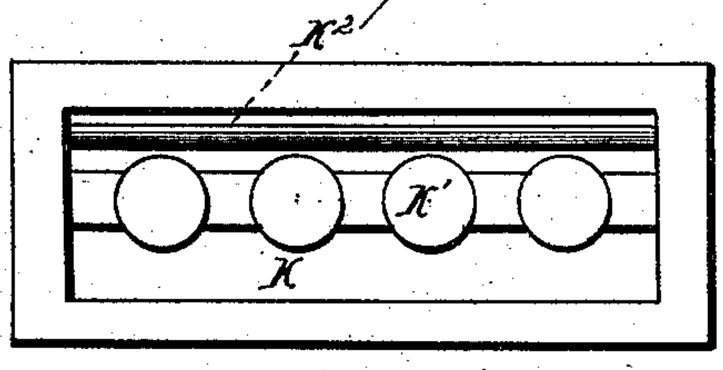
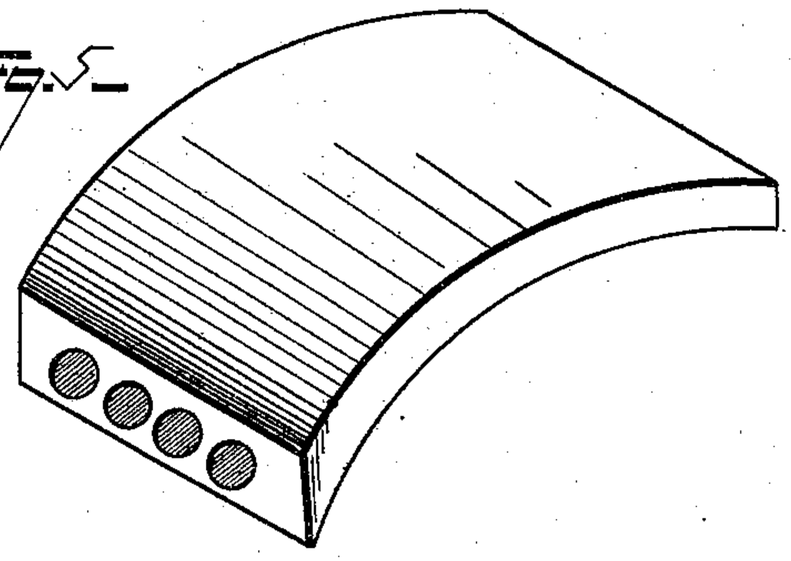


Fig. 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

LEVI T. SCOFIELD, OF CLEVELAND, OHIO.

IMPROVEMENT IN TILE MACHINERY.

Specification forming part of Letters Patent No. **173,504**, dated February 15, 1876; application filed January 28, 1876.

To all whom it may concern:

Be it known that I, LEVI T. SCOFIELD, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Machinery for Making Tiles or Bricks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improved machinery for making tiles or bricks; and, in the instance shown in the drawings, is designed more especially for the purpose of making floor-tile and ceiling-tile.

My invention consists, first, in a peculiar press, whereby the clay is forced through the die, and in machinery which, by a continuous motion in one direction, will cause the plunger to advance and recede at regular intervals. My invention consists, second, in the combination, with a plunger, of a press at each end thereof, with the mechanism for reciprocating the plunger intermediate between the two presses, as will be hereinafter more fully described and claimed.

In the drawings, Figure 1 is a side elevation of a machine embodying my invention, showing parts broken away to represent the interior mechanism of the press, and also the interior of the reciprocating mechanism. Fig. 2 is a plan view of same. Fig. 3 is a separate enlarged view of the die through which the clay is forced as it emerges from the press. The drawings represent a press at each end of the plunger.

A is a drive-shaft, which drives the upright shaft B through the medium of the intermediate bevel-gear C. D is a mutilated bevel-gear, one-half of the bevel being provided with cogs and the other half plain. This mutilated gear meshes alternately into the gears E E′, which are placed on opposite sides of the mutilated gear D, the arrangement being such that the mutilated gear shall mesh into but one of the said wheels E or E′. It is, therefore, apparent that, while the power is maintained continuous in one direction, the mutilated gear will cause the wheels E and E′ to revolve alternately in opposite directions. The wheels E E′ are attached rigidly to the revolving nut F. G is the plunger-rod, which is threaded into the revolving nut F, while the plunger-rod itself is constructed so as not to revolve, and it is, therefore, caused to reciprocate forward and backward as the bevel-gears E and E′ are caused to reciprocate in their motion. At each end of the plunger G is a head, H, which is made to fit closely in a receptacle or press, I, into which the clay is introduced that is to be formed into tiles or bricks. The presses or receptacles I are provided with openings J, through which the charge is introduced; and the plunger-heads H are each provided with a projecting flange, *h*, which, as the plunger is pressed forward, closes the passage J before the plunger exerts pressure upon the charge. K is the opening through which the clay is forced and caused to emerge in the form of tile. It may be forced out over any suitable core or cores K^1, according to the shape that is desired to be given to the openings through the tile; and if it is desired that the tile or brick shall issue in curve form, I place across the opening K, within the receptacle I, the obstruction K^2. This obstruction will cause the clay on that portion of the tile or brick to be obstructed in its passage, and the clay will therefore emerge from the opening K more rapidly along that portion not obstructed, and will, therefore, cause the tile to emerge in a curved form, which curve may be greater or less, according as the obstruction is increased or diminished.

The die here shown at K K^1 K^2 will produce a tile substantially as shown in Fig. 4. It is understood that this machine, by changing the form of its dies, and by changing the nature of the obstructions, is equally adapted to making any style or shape of tile or brick, and is not limited to the particular style and form shown in Fig. 4, this being shown simply as a demonstration of the invention. So, also, it is apparent that, instead of employing the press or receptacle I at each end of the plunger G, I may employ but one such press; and it is also apparent that there are very many ways of causing the plunger-shaft to reciprocate while the power is maintained constantly in the same direction. I do not limit

myself to any such particular means, but any other means whereby this reciprocation is obtained will suffice and may be employed.

The invention consists essentially in the combination, with the plunger, of mechanism for causing the same to reciprocate while the power is maintained constantly in the same direction, and combining with the said plunger at one or both ends thereof heads H for forcing clay from a tile-press, the whole combination constituting a new tile-machine.

It is apparent that there should be such a relation between the size of the wheels D and E as will cause the plunger to make a complete stroke before reciprocating.

What I claim is—

1. In a tile or brick machine, the combination, with a screw-threaded plunger-shaft, and a revolving nut engaging therewith, of a power-shaft that is driven constantly in the same direction, and intermediate mechanism whereby the plunger-shaft is reciprocated within the nut, substantially as and for the purpose set forth.

2. The combination in a tile or brick machine, with the screw-plunger G, of the revolving nut F, bevel-gears E, mutilated gear D, and power-shaft A, substantially as and for the purpose described.

3. The combination, with the receiver I, provided with opening J, of the plunger H, provided with the flange *h*, which latter device moves in unison with the plunger, substantially as and for the purpose specified.

4. The combination, with the opening K, of the inner cores K^1 and obstruction K^2, substantially as and for the purpose described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LEVI T. SCOFIELD.

Witnesses:

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FRANCIS TOUMEY.