

A. R. McBRROOM.

MACHINE FOR MAKING PIPE-TILING FOR PUMP-STOCK.

No. 176,658.

Patented April 25, 1876.

fig. 1.

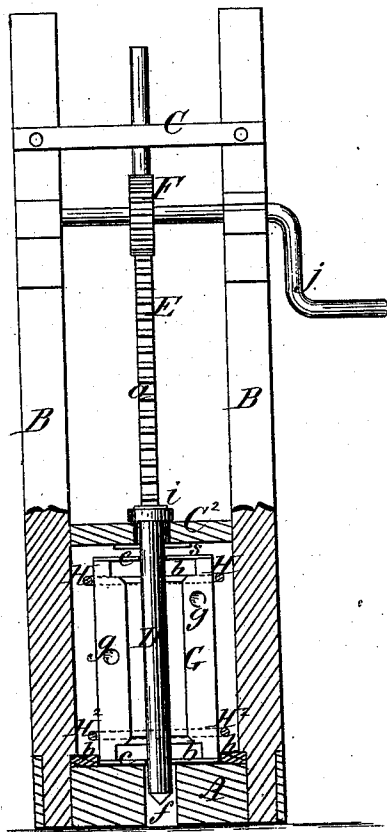


fig. 2.

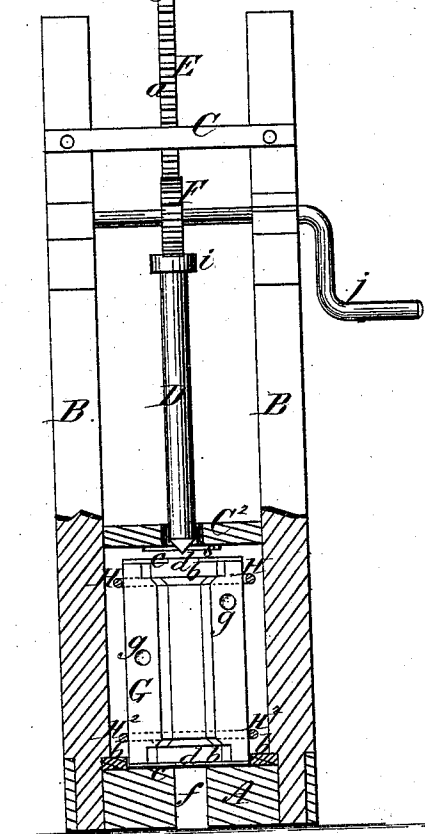


fig. 3.

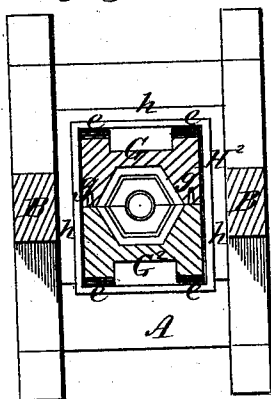


fig. 4.

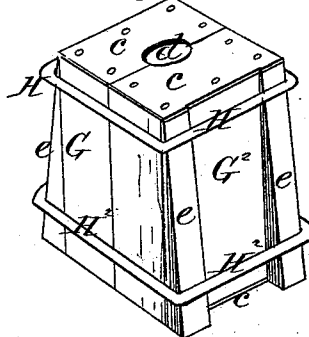
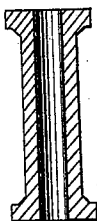


fig. 5.



Witnesses:

J. West Wagner.
J. A. Rutherford.

Inventor:

Allen R. McBroom,
By Johnson and Johnson,
his Attorneys.

UNITED STATES PATENT OFFICE.

ALLEN R. MCBROOM, OF GIBSONVILLE, OHIO.

IMPROVEMENT IN MACHINES FOR MAKING PIPE-TILING FOR PUMP-STOCKS.

Specification forming part of Letters Patent No. **176,658**, dated April 25, 1876; application filed December 16, 1875.

To all whom it may concern:

Be it known that I, ALLEN R. MCBROOM, of Gibsonville, in the county of Hocking and State of Ohio, have invented certain new and useful Improvements in Tiling-Machines; 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 which it pertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to machines for making pipe-tiling for pump-stocks, of plastic clay, or any suitable composite.

My object is to simplify the operation and the machine for making the tile.

I employ a sectional flask, in which the sections, when joined, are secured by embracing strap-clamps, fitting over vertical wedges at the corners of the flask, there being one of these strap-clamps at the bottom and one at the top, and, fitting down over the wedges, draw hard upon the flask-sections in the line of their walls, and hold them firmly together. The flask or mold is the counterpart of the tile, and its ends are closed by plates, which have openings to receive a plunger-core. This plunger-core is forced down through the plastic material, which is previously packed in the flask, and, pressing the material into cavities at the ends of the flask, forms the flanged or shouldered ends of the tile and the central opening therein, and discharges the surplus material out at the central opening in the bottom of the flask and at the base of the frame. In this movement the plunger-core is operated by a vertical rack on its stem, and a pinion carried by an upright frame.

The plunger-core is guided by openings in cross-ties, the lower one of which is just above the top of the flask, to maintain a steady descent of the plunger. For this purpose the plunger-core must have a regulated movement, which I accomplish by a collar on the plunger-rod, which acts as a stop to limit its ascent, and bring its lower end just within the lower cross-guide, to allow of the removal and replacement of the flask, while the descent of the plunger-guide is limited by the collar-stop striking the lower cross-guide.

The particular features which constitute my invention will be specifically pointed out in the claim.

In the accompanying drawings, Figure 1 represents a vertical sectional view of a tiling-machine embracing my invention, and showing the plunger at its downstroke through the flask; Fig. 2, a similar view, showing the plunger at the limit of its upstroke; Fig. 3, a horizontal section through the flask; Fig. 4, a view in perspective of the flask with its corner wedges and the embracing strap-clamps; and Fig. 5, an interior view of one section of the flask.

I employ a vertical frame, consisting of a base, A, from which two side posts, B B, rise, suitably braced, and connected by cross-guides C C², one near the top and one near the bottom, and which serve as the guides for the plunger D and its operating-stem E, the latter forming a cogged rack, *a*, and operated by a pinion, F, on a horizontal crank-shaft, supported in the side posts.

The flask is a rectangular box, preferably of wood, of two equal sections, G G², and of a length equal to the tile to be formed. The interior of these sections, when joined, are of the counterpart of the exterior of the tile, and are provided with recesses *b* at their ends, to form the flanged or shouldered heads of the tile. The ends of the sections are provided with strong cap-plates *c*, forming, when joined, annular openings *d*, through which the plunger-core passes when the flask is in place. Each of the flask-sections is provided with vertical corner wedges *e*, extending the length of the flask, and over these strap-clamps H H² are placed, to clamp and hold the sections together while forming the tile. The greatest projection of these wedges is at the bottom of the flask, and the strap-clamps are made to fit over and embrace these wedges at the top and bottom, and seat themselves tightly around the flask and hold its sections secure. They form very simple and convenient braces, and admit of easy adjustment upon and removal from the flask. They can be wedged tightly down upon the inclined corners, and easily slipped off to open the clasp to remove the finished tile, as they require no fastening when on the flask-wedges.

One section of the flask is filled with the material to form the tile. The other section is then fitted upon it, and secured by dowelpins *g*, after which the embracing strap-clamps are driven on, and the flask placed upon the base *A*, and centered with the plunger-core by base-cleats *h h*, which form ways at the sides and a stop, to limit the movement of the flask as it is slid on its end in upon the base to bring its central openings coincident with the opening *f* in the base and the plunger-core. The plunger-core is pointed, and is driven down through body of the material in the flask, and, forcing the material into the end recesses *b* in the flask, forms the end head or flanges on the tile, and forces the surplus material out at the bottom of the flask and the base-opening.

In this action it is necessary that the plunger should be limited both in its descent and ascent, and this is done by a collar, *i*, on the head of the plunger-core striking the lower cross-guide *C*², so that the plunger end must only enter the base-opening *f* in forming the tile; and when drawn up this collar *i* is arrested by the pinion *F*, so as to bring the plunger end within its guide-opening, and by this means the plunger is caused to operate within certain limits by turning the crank *j* to the right or left.

The cogged rack *a* passes through the upper cross-guide, which, with the lower cross-guide, forms upper and lower ways, to steady the plunger-core.

Different-sized plunger-cores may be used to form the tile-conduit of different diameters by having a guide-plate, *s*, secured to the under side of the lower cross-guide *C*², and changing this plate *s* to suit the size of the plunger-core, the opening in the cross-guide *C*² being large enough for the largest plunger-core that may be used.

By this method of forming the tile it is made without flaws, and from the solid body of the plastic material, and in a very expeditious manner. They are chiefly designed for forming pump-stocks, by bolting their flanged ends together, with a packing between them.

Tile fitting into each other may be made as well by slight changes in the flask and the plunger.

I claim—

In a tile-molding machine, the sectional mold, provided with the end plates *c c* and vertical corner wedges *ee*, and combined with the plunger *D*, clamps *H H*², the opening *f*, and the base-guides *h*, the plates having central openings *d d*, and the plunger a stop, *i*, all arranged to operate as herein set forth.

In testimony that I claim the foregoing I have affixed my signature in presence of two witnesses.

ALLEN R. McBROOM.

Witnesses:

T. D. WOODS,
HENRY OGLE.