

962,519.

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

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UNITED STATES PATENT OFFICE.

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APPARATUS FOR MANUFACTURING TILES.

962,519.

Specification of Letters Patent. Patented June 28, 1910.

Application filed August 23, 1907. Serial No. 389,851.

To all whom it may concern:

Be it known that I, WILLIAM T. NICHOLLS, of Wellsburg, Brooke county, West Virginia, have invented a new and useful Apparatus for Manufacturing Tiles, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side view of one form of apparatus embodying my invention; Fig. 2 is a view similar to Fig. 1 showing a modified form of apparatus; Fig. 3 is a sectional view of a mold and plunger; and Fig. 4 is a detail sectional view showing one of the cross-heads.

My invention has relation to apparatus for manufacturing tiles, the present application being for one of the specific forms of tile forming apparatus as shown and described in my pending application, Serial No. 369,300, filed April 20th, 1907.

The present invention is designed to provide a simple and convenient form of apparatus particularly adapted for the manufacture of tiles having a series of parallel undercut ribs or projections on one face thereof.

To this end my invention consists in a press having a plunger arranged to reciprocate in an inclined plane and having a flat working face provided with a plurality of elongated notches or grooves formed each with an undercut wall, said plunger being arranged to enter a suitable mold to form in connection therewith a tile body having undercut projections of the character described. Means are also preferably provided for varying the angle of the plane of inclination of the axis of the plunger.

Referring to the drawings, the numeral 2 designates a suitable frame rising from a table 3 to which it is secured, and preferably of tripod form. 4 designates cross-heads which are arranged to slide on the inclined legs or members 2^a of this frame and which carry a plunger operating shaft or rod 5 to the lower end of which is secured a plunger 6.

7 designates the mold box which is supported on the table 3, and which is provided with a hinged or otherwise removable top ring 8 arranged to provide a guide for the plunger in entering the mold and which can be thrown back or otherwise removed to

permit the removal of a formed tile and to insert a new batch of glass, after the plunger has been withdrawn.

The plunger is formed with a broad flat working face in which are a plurality of grooves or notches 9 having each one wall 9^a undercut with respect to the plane of the face 9.

10 designates the usual spring head carried by the plunger rod or shaft for engagement with the top of the mold ring 8.

The plunger may be operated by hand or by power means. In the drawings I have shown a counterweighted hand lever 11 pivoted at 12 and connected to the upper cross-head by a link 13. The plunger 6 is preferably detachably secured to the rod 5. In the drawings I have shown the plunger as having the shoulders 14 at its head which are engaged by dogs 15 pivoted to a yoke 16 and actuated to clamp and release the head by a cone 17 threaded on the shaft 5.

18 designates nuts for adjusting the rod 5 in the cross-heads 4.

The form shown in Fig. 2 is similar to that shown in Fig. 1, except that the legs 2^a of the frame are pivoted at their lower ends 2^b and the other leg 2^c is made to extend adjustably through the table 3, being secured in any desired adjustment by the pin or bolt 19. In order to permit the plunger to disengage itself from the projections formed on the tile as the plunger is withdrawn from the mold, it is necessary that it shall move in an inclined plane, which is substantially parallel to the angle of the undercut wall 9^a of the notches or recesses in its working face. In order to permit of this adjustment and also to permit of the use of different plungers interchangeably to form tiles having undercut projections of different degrees of undercut, this adjustment of the frame is provided. The detachable arrangement of the plunger above described permits one plunger to be readily removed and another substituted. Interchangeable guide plates or top rings are provided, each having its opening extending at a different angle to conform to the angle of a particular plunger.

The manner of operation will be readily understood from the drawings. A batch of glass being placed in the mold, the mold ring 8 is placed in position on the mold and the plunger is reciprocated to enter the mold in the manner shown in Fig. 3. The plunger is

then withdrawn, the mold ring is removed or thrown back, and the formed tile is removed.

It will be obvious that various changes
5 may be made in the apparatus herein shown and described by those skilled in the art, without departing from the spirit and scope of my invention as defined in the claims.

I claim:—

10 1. In apparatus for manufacturing tiles, a plunger having a flat working face formed with a plurality of elongated under-cut notches or grooves therein, said plunger being mounted to move in a plane which is
15 inclined to the plane of such working face, substantially as described.

2. In apparatus for forming tiles, the combination with a mold box having a mold cavity therein, of a plunger arranged to
20 enter said box at an angle, said plunger hav-

ing a working face parallel with the bottom wall of the mold cavity and formed with undercut recesses; substantially as described.

3. In apparatus for forming tiles, a mold box having a horizontal mold cavity therein, 25 a removable top ring having an inclined opening for a plunger, and a plunger arranged to work through said ring in an oblique direction, said plunger having its working face substantially parallel with the 30 bottom wall of the mold cavity formed with a plurality of undercut recesses therein; substantially as described.

In testimony whereof, I have hereunto set my hand.

WILLIAM T. NICHOLLS.

Witnesses:

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