(No Model.)

A. ITTNER.

MOLD AND DIE FOR BRICK MAKING MACHINES.

No. 288,240. Patented Nov. 13, 1883.

FIG. 1

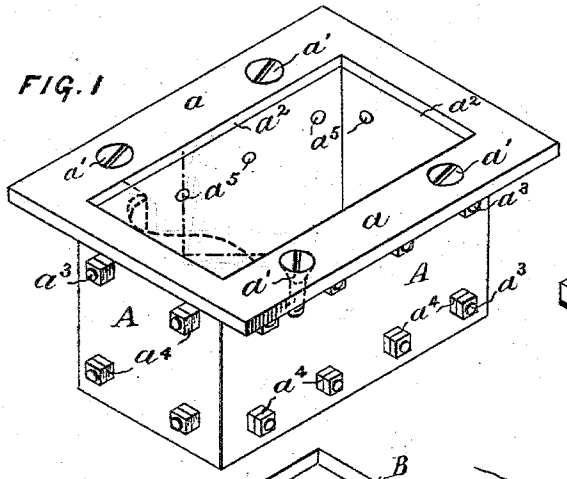


FIG. 3.

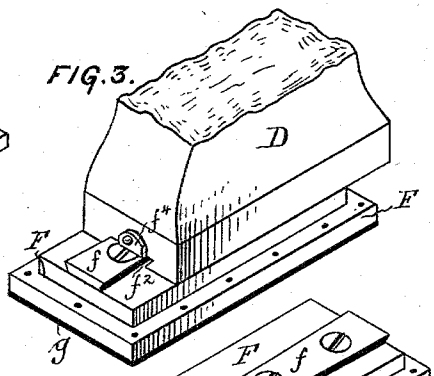


FIG. 4.

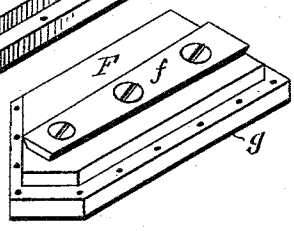


FIG. 2.

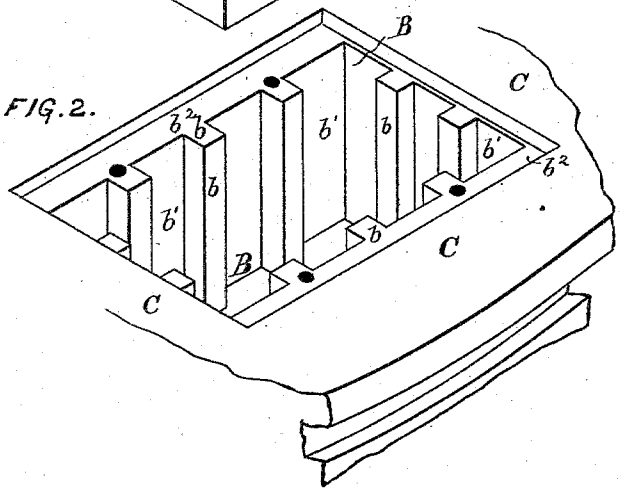


FIG. 5.

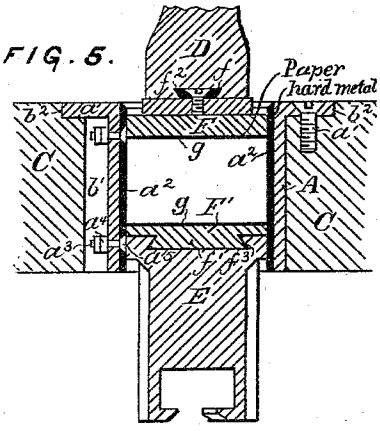


FIG. 8.

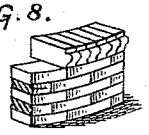


FIG. 6.

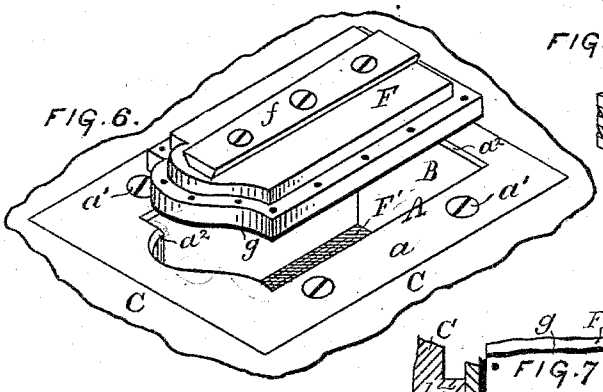


FIG. 9.

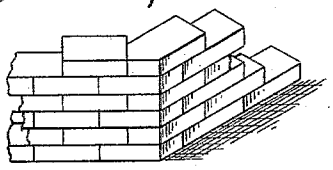
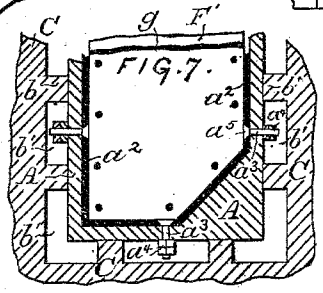


FIG. 7.



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UNITED STATES PATENT OFFICE.

ANTHONY ITTNER, OF ST. LOUIS, MISSOURI.

MOLD AND DIE FOR BRICK-MAKING MACHINES.

SPECIFICATION forming part of Letters Patent No. 288,240, dated November 13, 1883.

Application filed June 22, 1883. (No model.)

To all whom it may concern:

Be it known that I, ANTHONY ITTNER, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Molds and Dies for Brick-Machines, of which the following is a specification.

My invention relates, particularly, to that class of brick-machines in which damp clay, or clay in its natural condition of moisture, is pressed into molds by means of a pair of plungers acting in opposite directions on the clay to make what are commonly called "dry clay pressed brick;" but it is applicable also to other classes of brick-machines.

The object of my invention is to make ornamental or fancy brick of any and all desired shapes in one and the same machine, and to make the several parts of the machine adjustable or removable and exchangeable, and thereby to save time, labor, and expense in the construction as well as in the operation, and achieve effectiveness, durability, and strength.

My improvements are succinctly summarized in my appended claims.

In the accompanying drawings, Figure 1 is a perspective view of a rectilinear brick-mold, showing in dotted lines different-shaped molds for making correspondingly different-shaped bricks. Fig. 2 is a perspective view of part of a bed-plate, table, or mold-holder, showing my improved means for holding the mold. Fig. 3 is a perspective view of the upper plunger, showing the manner of securing and removing the plunger plate or die. Fig. 4 is a perspective view of a detached plunger plate or die for making a brick to be used in octagon-shaped corners. Fig. 5 is a cross-section of the mold-holder and upper and lower plungers, all in position as in operation. Fig. 6 is a perspective view of a plunger plate or die, a mold, and part of the mold-holder in position for making a brick for architrave work. Fig. 7 is a plan section of the mold-holder, showing the mold in position and the manner of securing the mold-lining. Figs. 8 and 9 are perspective views of different-shaped bricks when laid, showing the class of work produced.

A in Figs. 1, 6, and 7 indicates brick-molds for different-shaped bricks. *a* is a top flange, which forms part of the mold, and can be cast or otherwise formed on the sides, as shown in the drawings, or placed on both the sides and ends, and thus extend entirely around the top of the mold, if required. *a'* indicates holding-screws passing through the flange and into the upper ends of the ribs of the mold-holder. a^2 is the lining of hard metal, in order to better withstand wear. This lining is made to conform to the shape of and to accurately fit the mold, and has a space within it of the exact dimensions of the brick to be made. To firmly secure or fasten the lining in the mold, bolts a^3 are passed from the inside face of the lining through it and the sides and ends of the mold, and fastened on the outside of the mold by jam or lock nuts a^4. (See Figs. 1, 5, and 7.) The heads a^5 of the bolts are countersunk flush with the inner face of the lining, and are preferably made as hard as the lining, so as to wear evenly with it. Should the lining become worn, it can be easily taken out and replaced by a new set of lining-plates of the same or different pattern; or it can be backed up by suitable plates or packings between it and the mold as it wears away. Thus a single set of linings can be worn down until too thin for further use, while their faces can be dressed anew and their ends ground off to reduce their length for inward adjustment as often as necessary. These are important economical results secured by my invention, because usually lining-plates of brick-molds, which are expensive, have to be thrown away and replaced by new ones as soon as they wear or get uneven on their faces the first time, whereas mine may be many times refaced and adjusted until they are all worn out.

The outer dimensions of the molds—viz., the length and width of the ends and sides—and the flange I make of uniform or standard size in all cases, so that any of my improved molds will fit into the recess B of the mold-holder C, the variation of the inner shape of the mold not changing its outer shape or dimensions. Within the recess B are cast or otherwise formed ribs *b* and spaces *b'*. The ribs *b* serve to hold the mold in position, which latter is made to fit snug against the former, and the spaces allow the nuts and bolts which hold the lining in the mold to have clearance when the mold is in position, as shown in

Figs. 5 and 7. The flange *a* rests on a bearing-surface on top of the mold-holder, preferably in the countersink b^2, the screws *a'* are driven home, and the mold is held tightly in its place. The top of the flange and the screw-heads, on account of the countersink, are flush with the top of the mold-holder. (See Figs. 5 and 6.)

D, Figs. 3 and 4, is the upper and E the lower plunger. F is the upper plunger plate or die, and F' is the lower. To the top of the upper die is bolted, screwed, cast, or otherwise formed a tapered dovetail, *f*, and similarly on the bottom of the lower die is formed the tapered dovetail *f'*. Within the faces of the plungers D E are cast or otherwise formed a corresponding tapered dovetail groove, f^2 f^3, to receive the dovetails *f f'*, respectively. To hold the dies in place, any suitable catch or lock, f^4, is provided, as shown in Fig. 3. The die is made of the desired shape of the brick to be made, and corresponds to the shape of the mold-lining, which it accurately fits, as seen in Figs. 5, 6, and 7. The dovetails of all upper plunger plates or dies are made of one standard size to fit the grooves of the upper plunger, and likewise the dovetails of all lower plunger plates or dies are made of one standard size to fit the grooves of the lower plunger, so that any shaped, or formed, or designed upper and lower die is adjustable to the upper and lower plunger, respectively.

As is well known in making brick by pressure, and especially when using damp clay, the clay sticks to the plungers or dies and necessitates the stopping of the machine for cleaning. To prevent this I provide a facing, *g*, of paper, to which damp clay will not adhere, and glue it to the dies. This I have discovered to be the best and most economical means of keeping the faces of the dies free from clay.

I am aware that other more expensive and less effective substances have been employed to mask the faces of dies in brick-machines; but paper is a great improvement upon them.

Having fully described my invention, what I desire to claim and secure by Letters Patent is—

1. A removable brick-mold, A, provided with the flange *a* and the adjustable and detachable linings a^2, substantially as set forth.

2. In combination with a brick-mold, the adjustable and detachable linings a^2, provided with the screw-bolts and nuts a^3 and a^4, to accommodate inward adjustment of the linings, substantially as set forth.

3. A mold-holder, C, provided with a suitable surface or bearing on top for the flange of a removable mold, and with a recess, B, having ribs *b* projecting within it, substantially as set forth.

4. In a brick-machine, a fixed recessed mold-holder, in combination with a detachable mold, and with plungers having plunger-plates so constructed as to be readily detachable and exchangeable, whereby different patterns of fancy brick can be made by the same machine, substantially as set forth.

5. A die of a brick-machine covered with paper glued upon its face to prevent adhesion of clay, substantially as set forth.

6. In a brick-machine, a removable mold, A, having a flange, *a*, in combination with a mold-holder having ribs *b* and countersink b^2, substantially as set forth.

7. The removable mold A of a brick-machine, flange *a*, screws *a'*, adjustable lining a^2, and bolts a^3, secured by nuts a^4, in combination with a mold-holder having ribs *b* and spaces *b'*, as herein shown and described.

ANTHONY ITTNER.

Witnesses:
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E. H. PONATH.