H. E. MORLEY & E. GIBSON.

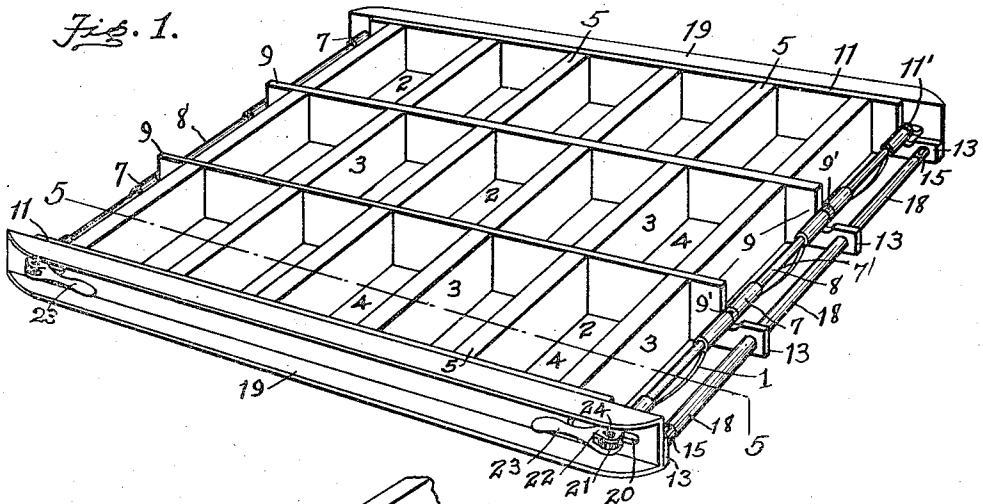
BRICK MOLD.

APPLICATION FILED AUG. 17, 1914. RENEWED OCT. 23, 1915.

1,184,117. Patented May 23, 1916.

2 SHEETS—SHEET 1.

Fig. 1.



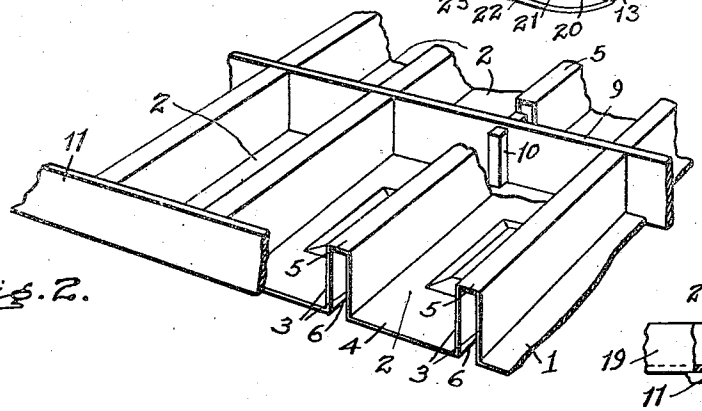


Fig. 2.

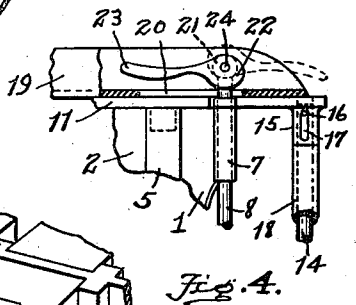


Fig. 4.

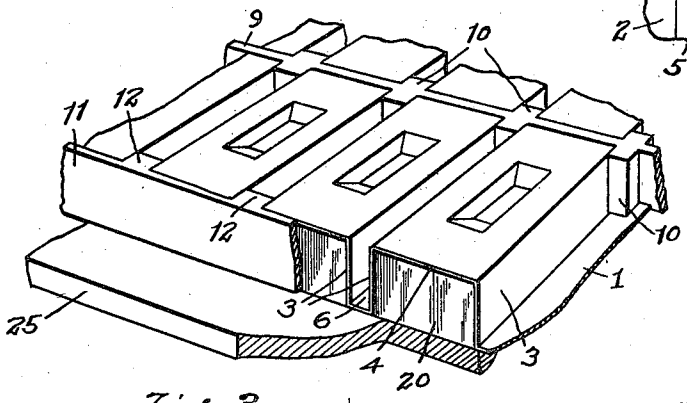


Fig. 3.

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2 SHEETS—SHEET 2.

Fig. 5.

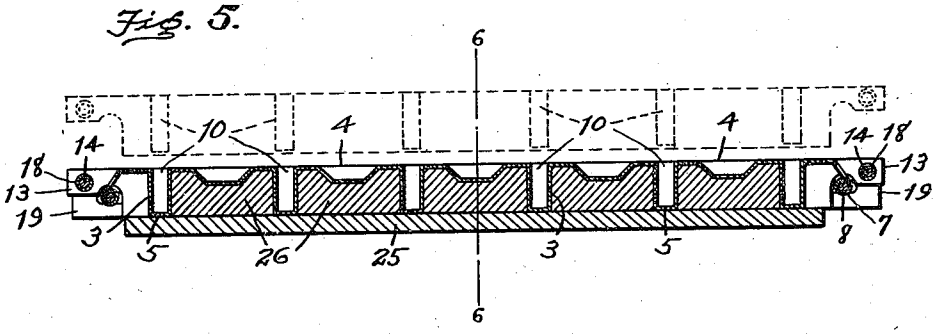


Fig. 7.

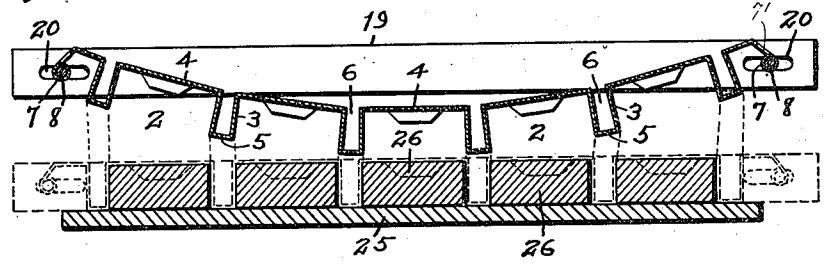
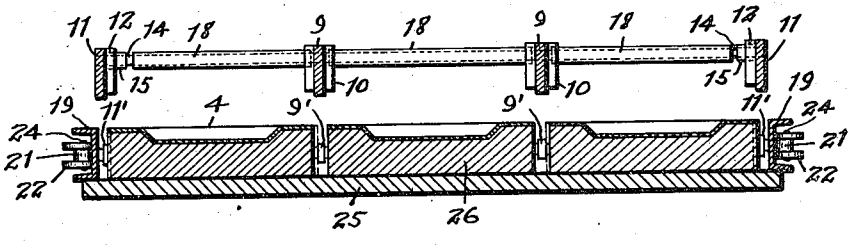


Fig. 6.



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BRICK-MOLD.

1,184,117. Specification of Letters Patent. Patented May 23, 1916.

Application filed August 17, 1914, Serial No. 857,036. Renewed October 23, 1915. Serial No. 57,596.

To all whom it may concern:

Be it known that we, HENRY E. MORLEY and EDWARD GIBSON, citizens of the United States, residing at Detroit, in the county of Wayne, State of Michigan, have invented certain new and useful Improvements in Brick-Molds; and we do 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

This invention relates to molds for bricks and the like, and consists in the novel construction and arrangement of parts as hereinafter more fully set forth and pointed out particularly in the claims.

The object of the invention is the provision of simple and efficient means for molding bricks, blocks and slabs of plastic material, which may be operated in the manner of a molder's flask, and in which a plurality of bricks or the like may be molded with each operation of filling the flask, and wherein the construction of the parts is such as to enable the ready withdrawal or discharge of the bricks from the molds through the simple operation of lifting the flask.

The invention provides for such a construction of the members forming the mold as to enable them to be readily assembled within a confining frame or flask preparatory to receiving the plastic material to be molded, and to permit of the quick releasing of the assembled members to facilitate the rapid removal of the articles from the mold when set or dried.

The invention consists briefly in the employment of a series of corrugated or undulated flexible strips of metal formed to provide a plurality of integral pockets or molds of a size to form the thickness, width and length of the bricks to be molded, together with suitable dividing strips for separating the ends of the bricks in connection with a binding frame or flask by which the parts are held together when assembled and released for disassembling, and by means of which the series of flexible mold strips may be lifted in unison to discharge the molded bricks from the molds.

The preferred embodiment of our invention is illustrated in the accompanying drawings which form a part of this specification, and in which:

Figure 1 is a perspective view of the molds as contained when assembled within the binding frame or flask as they would appear in position for the reception of the plastic substance with which the molds are to be filled. Fig. 2 is a fragmentary perspective view of the mold strips broken away to show the shoulders of one of the dividing strips which enter the spaces between the pockets of the mold strips. Fig. 3 is a fragmentary perspective of a portion of the mold inverted, and showing the ribs or cleats of an end strip and one of the dividing strips lying within the spaces between the pockets of the mold strip in position for withdrawal therefrom. Fig. 4 is a fragmentary sectional elevation of one corner of the mold and binding frame showing one of the eccentric levers pivoted to the end of a tie rod as a means for drawing the binding rails of the frame toward each other. Fig. 5 is a longitudinal sectional view through the mold on dotted line 5—5 of Fig. 1, with the mold filled and in the inverted position, and indicating by dotted lines a raised position of the dividing strips of the mold. Fig. 6 is a transverse sectional view on dotted line 6—6 of Fig. 5 showing the binding rails released and the dividing strips removed from position between the mold strips. Fig. 7 is a longitudinal sectional view through one of the mold strips showing said strip arched downwardly to expand the side walls of the molds at their open edges and release the bricks from contact therewith when said strips are being withdrawn therefrom.

Referring to the drawings by the characters of reference marked thereon, 1 represents the mold strips which are preferably of sheet metal and are formed or bent in a corrugated or undulated manner to form a plurality of integral successively arranged molds or pockets 2 of a size equal to the thickness, width and length of the bricks to be molded. The vertical walls 3 of the pockets extend at right-angles to the body of the strip forming the horizontal bottom walls 4 of said pockets upon one side of said mold strip and are connected together at right-angles upon the opposite side by horizontal top walls 5 which abridge the spaces 6 between the side walls of said pockets, the

openings into said pockets and spaces alternating upon opposite sides of the mold strips, as clearly shown in Figs. 2 and 3. The pockets of the mold strips being separated by spaces abridged by walls connecting the edges of the pockets upon their open sides, renders the strips pliable and capable of being bent in the arc of a circle to expand the openings to said pockets and provide draft or clearance between the side walls to facilitate the discharge of the bricks therefrom after they shall have been molded and set to form.

The mold strips are assembled in series in parallel adjacent relation to each other with the ends of the molds or pockets in separated registering alinement. The end portions of each mold strip 1 are provided with separated cylindrical sleeves 7, preferably formed by bending or rolling the metal upon a suitable mandrel, and loosely threaded through these sleeves 7 at the opposite ends of said mold strips are tie rods 8 which form pivotal connections for the ends of said strips, and serve to support said strips collectively. The tie rods 8 are exposed between the sleeves 7 of the mold strips at which points the metal is cut away to form hand openings 7′ through which said rods may be grasped for handling the mold.

To close the adjacent ends of the pockets of the intermediate mold strips of the series, transverse dividing strips 9 are introduced between said mold strips at points in line with spacing collars 9′ loosely mounted on the rods 8 and interposed between the sleeves 7 to separate said mold strips and permit the entrance of said dividing strips therebetween. Said dividing strips 9 are provided upon opposite sides with transverse vertically alined cleats or ribs 10 which terminate at their upper ends short of the upper edges of said dividing strips a distance equal to the thickness of the bridge walls 5 of the spaces 6 between the pockets of the mold strips into which spaces said ribs snugly fit to support and maintain the side walls 3 of said pockets in parallel alinement and effect a flush connection at the upper edges of said dividing strips with the upper surfaces of said bridge walls. The outermost ends of the pockets of the outermost mold strips of the series are closed by end strips 11 which lie in line with spacing collars 11′ on the tie rods 8, and are provided upon the inner side only with cleats or ribs 12 similar to the cleats 10 of the dividing strips 9, which enter and lie in the spaces 6 at the outer ends of the pockets of the mold strips to support the side walls at the ends of the pockets opposite and in the same manner as the ribs 10 of the dividing strips 9.

The ends of the dividing strips 9 and end strips 11 are provided with reduced portions 13 which extend beneath the sleeves 7 and tie rod 8 of the mold strips and are threaded loosely upon a connecting rod 14, the ends of which are slidably received in bosses 15 secured to the inner face of the reduced portions 13 of the end strips 11, and are provided with pins 16 extending through elongated apertures 17 formed through the walls of said bosses, which limit the end movement of the rod in said bosses and retain said end strips from disengagement with said rod. Mounted loosely upon the connecting rods 14 and extending between the bosses 15 of the end strips 11 and the ends 13 of the dividing strips 9, and also extending between the ends of said dividing strips, are sleeves 18 which serve to space said strips apart with respect to the mold strips and to limit the lateral movement of said strips upon their connecting rods 14 (see Figs. 1 and 4).

The end and intermediate dividing strips are drawn firmly into contact with the ends of the mold strips by means of binding channel rails 19 which lie in contact with the outer faces of the end strips 11 and are provided near their ends with elongated apertures 20 through which the ends of the tie rods 8 extend. Said rods are provided at their ends with eyes 21 upon which the bifurcated heads 22 of hand levers 23 are eccentrically pivoted at 24 and which are so arranged as to present the high sides of the eccentric heads in contact with the outer faces of the binding rails 19 to force said rails toward each other upon the tie rods 8 when said levers are swung into parallel relation with said rails, whereby pressure is applied to draw the mold strips into a close fitting contact with the dividing and end strips to close the ends of the pockets of the molds and to retain the side walls thereof in alinement upon the ribs of the dividing strips so as to insure uniformity in the size and shape of the pockets preparatory to filling the mold with the plastic substance to be formed, as shown in Fig. 1.

The parts of the mold when assembled and confined within the binding frame comprising the binding rails and tie rods form a plurality of open rectangular pockets each of which forms a matrix of the size and shape of the brick to be molded, in which the bridge wall of the dividing spaces between the pockets lie flush with the upper edges of the dividing strips and upon the ribs of which said bridge walls are supported in addition to the clamping pressure of the binding frame, whereby said parts are firmly held against displacement and may be moved about bodily with said frame.

The frame and molds are placed upon a suitable bed plate, not shown, and the plastic substance to be molded is introduced by pouring or tamping it into the pockets. The

surface is then smoothed over flush with the upper edges of the dividing strips, and when the material is sufficiently set or hardened a suitable face plate 25 is placed upon the upper surface of the mold and the frame and molds are turned over as shown in Figs. 3, 5, 6 and 7. The eccentric levers 23 are then swung to the position indicated by dotted lines in Fig. 4 to release the binding rails from contact with the end strips 11, and at the same time releasing the pressure of the mold strips upon the intermediate dividing strips 9. Said strips may then be lifted collectively from the mold by raising the rods 14 upwardly, to the position shown in Fig. 6 and indicated by dotted lines in Fig. 5, the dividing strips passing from the ends of the mold strips and withdrawing the cleats thereon from within the spaces between said molds. The binding frame carrying the mold strips may then be raised bodily from the face plate by lifting upon the tie rods, whereby the ends of the mold strips will be raised somewhat in advance of the bodies of said strips, causing their body portions to sag or bend in the arc of a circle, as indicated in Fig. 7, in which movement the elongated apertures 20 of the binding rails 19 permit the tie rods 8 therein to move toward each other to provide for the contraction of the mold strips as they assume their arched form. This sagging or bending of the mold strips contacts the spaces 6 at their open edges between the pockets along the inner arc of said mold strips and also expands the side walls of said pockets at their openings along the outer arc of said strips to provide sufficient draft or clearance to release the bricks 26 from contact with said walls and permit the further withdrawal of the mold strips therefrom, as indicated by dotted lines in Fig. 7, thus discharging the bricks upon the face plate and enabling the mold to be again assembled, set up and the operation repeated.

It will be apparent that a mold constructed in the foregoing manner will be simple, durable and convenient to operate, and will enable the molding of a plurality of bricks or other articles of uniform shape and character with each operation, and that the pockets of the molds may be varied in shape and dimensions to accommodate varying styles of bricks or blocks and that the pockets may be provided as shown with a centrally raised portion to form a concavity or depression in one face of the brick or block if desired.

It is obvious that other details of construction may be varied without departing from the spirit of our invention, the essential features of which reside in the employment of the flexible mold strips carried by a binding frame in connection with the shouldered dividing strips for separating the mold strips and for maintaining the side walls of the mold pockets in vertical alinement.

Having thus fully set forth our invention, what we claim as new, and desire to secure by Letters Patent, is:

1. A mold comprising a binding frame, a flexible mold strip corrugated to form therein the bottom and side walls of a plurality of open rectangular pockets contiguously arranged upon one side and alternating with open spaces between said pockets upon the opposite side of said strip, end strips for closing the opposite ends of the pockets of said mold strip and having means thereon for maintaining the side walls of said pockets in parallel relation to each other, said mold strip and said end strips adapted to be confined within said binding frame, and means for contracting said frame to bind said members together.

2. A mold comprising a binding frame, a flexible mold strip corrugated to form therein the bottom and side walls of a plurality of open contiguous pockets upon one side alternating with open spaces between said pockets upon the opposite side of said strip, end strips for closing the opposite ends of the pockets of said mold strip and having transverse projections thereon adapted to seat within the open spaces between said pockets for maintaining the side walls thereof in parallel relation, said mold strip and said end strips adapted to be confined in contact within said binding frame, and means for contracting said binding frame upon said end strips.

3. A mold comprising a binding frame, a flexible mold strip corrugated to form therein the bottom and side walls of a plurality of open contiguous pockets upon one side alternating with open spaces between said pockets upon the opposite side of said strip, said strip being supported at opposite ends movably upon said binding frame and lying within said frame, end strips for closing the opposite ends of the pockets of said mold strip having lateral projections thereon for supporting the bridge walls of the spaces between said pockets and for maintaining the side walls of said pockets in parallel relation, said end strips adapted to be confined within said binding frame in contact with opposite sides of said frame, and means for contracting the sides of said frame thereon.

4. A mold comprising a binding frame, a flexible mold strip corrugated to form therein the bottom and side walls of a plurality of open contiguous pockets upon one side alternating with open spaces between said pockets upon the opposite side of said strip, end strips for closing the opposite ends of the pockets of said mold strip and having transverse projections thereon adapted to seat within the open spaces between said

pockets for supporting the walls thereof in parallel relation, said removable strips mounted to move relatively upon connecting members at opposite ends, said end strips adapted to embrace said mold strip and to be confined in contact with opposite sides of said binding frame, and means for contracting said binding frame thereon.

5. A mold comprising a binding frame, a flexible mold strip corrugated to form therein the bottom and side walls of a plurality of open contiguous pockets upon one side alternating with open spaces between said pockets upon opposite sides of said strip, the ends of said strip being flexibly supported upon and relatively movable with opposite sides of said binding frame, end strips for closing the opposite ends of the pockets of said mold strip having transverse cleats thereon for supporting the side walls of said pockets in parallel relation, said end strips being mounted to move relatively upon connecting members at opposite ends and adapted to embrace said mold strip upon opposite sides and to be confined in contact with opposite sides of said binding frame, and means for contracting the sides of said binding frame thereon.

6. A mold comprising a binding frame having tie rods for contracting the sides of said frame relatively movable therein, a flexible mold strip corrugated to form therein the bottom and side walls of a plurality of open contiguous pockets alternately arranged with open spaces between said pockets upon opposite sides of said strip, the ends of said strip being pivotally supported upon and relatively movable with said tie rods, end strips for closing the opposite ends of the pockets of said mold strip supported to move relatively upon connecting rods at their opposite ends, and having transverse ribs thereon adapted to seat within the spaces between said pockets in contact with the bridge walls and side walls thereof, said strips adapted to be removably contained within said binding frame in contact with opposite sides thereof, and means connected with said tie rods and engaging the sides of said frame for binding said members together.

7. A mold comprising a binding frame having tie rods for contracting two sides of said frame relatively movable therein, a series of flexible mold strips corrugated to form therein the bottom and side walls of a plurality of open contiguous pockets alternating with open spaces between said pockets upon opposite sides of said strips, said strips being spaced apart in parallel relation within said frame and pivotally supported at opposite ends upon said tie rods, dividing strips for closing the adjacent ends of the pockets of said mold strips having ribs upon opposite sides adapted to seat within the spaces between the side walls of said pockets, end strips for closing the outer ends of the pockets of said mold strips having transverse ribs thereon adapted to seat within the spaces between the side walls of said pockets, connecting rods slidably supporting the ends of said dividing strips and said end strips, said strips adapted to lie within said binding frame removably with said connecting rods, and means connected with said tie rods and engaging the sides of said frame for contracting said frame thereon.

8. A mold comprising a binding frame, tie rods for connnecting two sides of said frame relatively movable therein, a series of flexible mold strips each having corrugations therein to form the bottom and side walls of a plurality of open contiguous pockets alternating with open spaces between said pockets upon opposite sides of said strips, said strips being pivotally connected at opposite ends respectively to the tie rods of said binding frame, intermediate dividing strips for separating said mold strips and for closing the ends of adjacent pockets of said strips, spacing collars on said tie rods interposed between said mold strips, transverse ribs projecting laterally upon opposite sides of said dividing strips and adapted to seat within the spaces between adjacent pockets of said strips, end strips for closing the outermost ends of the pockets of the outermost mold strips having transverse ribs projecting laterally thereon adapted to seat within the spaces between the side walls of the corresponding pockets of said mold strips, connecting rods passing loosely through the ends of said dividing strips and slidably connected at opposite ends with said end strips, spacing sleeves on said connecting rods interposed between the ends of said dividing strips and said end strips, said strips adapted to be embraced and confined within said binding frame, and eccentric levers connecting the tie rods with the sides of said frame for binding said members together.

In testimony whereof, we sign this specification in the presence of two witnesses.

HENRY E. MORLEY.
EDWARD GIBSON.

Witnesses:
B. F. WHEELER,
M. E. BROESAMLE.