Jan. 13, 1925.

1,522,744

A. C. PITMAN

MOLDING BOARD

Filed March 13, 1923

2 Sheets-Sheet 1

Fig. 1,

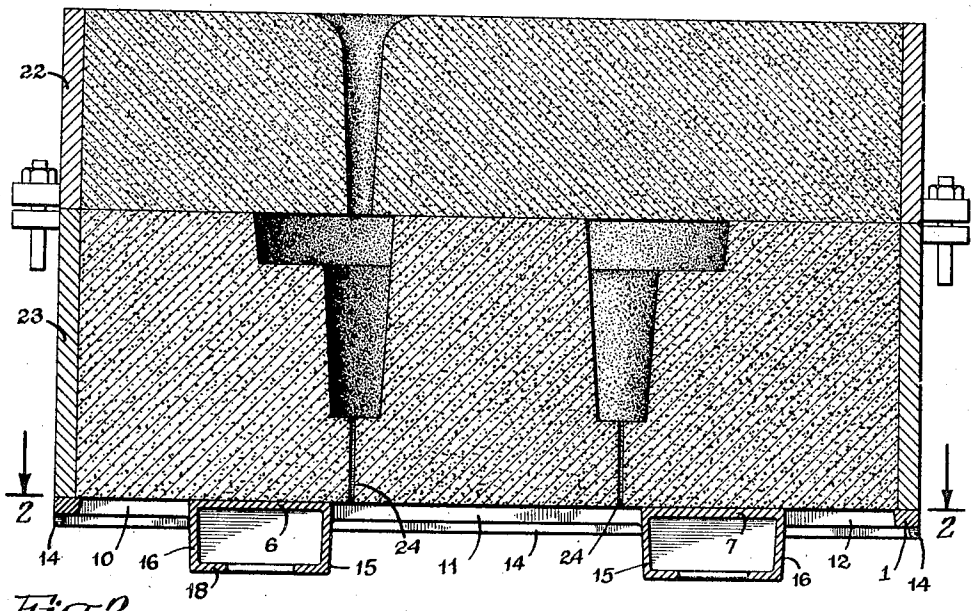
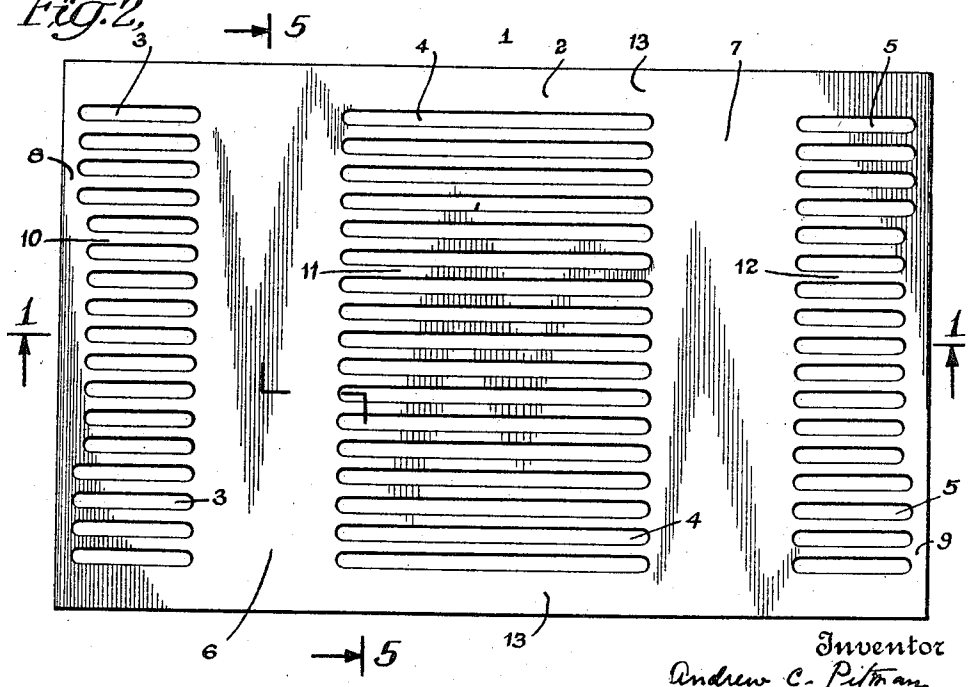


Fig. 2,



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Fig. 3.

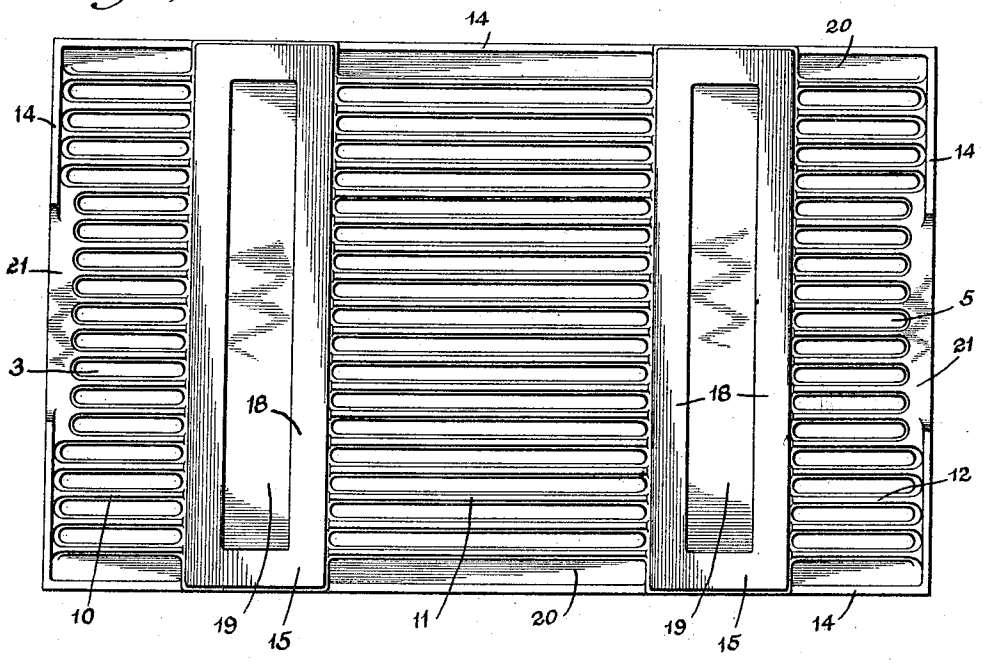


Fig. 4.

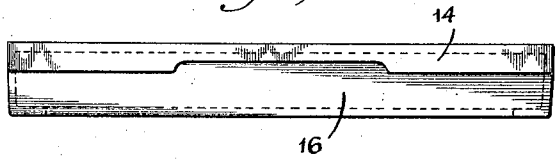
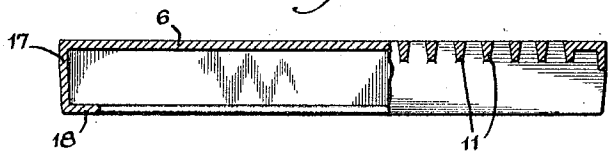


Fig. 5.



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1,522,744

UNITED STATES PATENT OFFICE.

ANDREW C. PITMAN, OF TORRINGTON, CONNECTICUT, ASSIGNOR TO THE TURNER & SEYMOUR MFG. CO., OF TORRINGTON, CONNECTICUT, A CORPORATION OF CONNECTICUT.

MOLDING BOARD.

Application filed March 13, 1923. Serial No. 624,717.

To all whom it may concern:

Be it known that I, ANDREW C. PITMAN, a citizen of the United States, and resident of Torrington, in the county of Litchfield and State of Connecticut, have invented certain new and useful Improvements in Molding Boards, of which the following is a specification.

The invention related to a molding board to be used on the bottom of moulds and an object of the invention comprises the provision of a plate or mould intended to take the place of the usual wooden boards, the plate comprising an integral construction so formed as to be comparatively light in weight, inexpensive in production and sufficiently durable to withstand the rough usage to which such equipment is subjected in a foundry. The improved molding board is preferably formed as an integral metal construction, preferably cast iron.

In the preferred form of the invention lightness, cheapness and sufficient stiffness and durability are obtained, together with other advantages, by casting the plate with a marginal downwardly extending flange, the main body of the plate being composed largely of parallel ribs separated by slots or openings. In the preferred construction also integral battens extend transversely across the bottom surface of the plate and extend downwardly therefrom, these battens preferably being hollow, of what may be termed box construction, the ribs of the plate referred to preferably extending between the battens and between the outer edges of the battens and the adjacent edge portions of the plate. In the preferred form of construction also the battens are specially designed to make the plate adaptable for squeezer machine work, the battens also being arranged to permit the stacking of the moulds in foundries.

Other objects of the invention comprise various combinations of parts and details of construction, all as will be more fully set forth hereinafter and particularly pointed out in the appended claims.

In order that the invention may be more fully understood attention is hereby directed to the accompanying drawings forming part of this application and illustrating a form of the invention which is at present preferred. In the drawings—

Fig. 1 represents a vertical longitudinal section taken through a plate comprising the invention, a mould being illustrated as mounted upon the plate, the section being taken on line 1—1 of Fig. 2;

Fig. 2 is a top plan view of the molding board or plate, this view being taken on the plane indicated by line 2—2 in Fig. 1.

Fig. 3 is a bottom plan view of the plate;

Fig. 4 is an end view of the same, and

Fig. 5 is a transverse section taken on line 5—5 of Fig. 2.

Referring to the drawings, the molding board in the form illustrated comprises an integral cast iron construction, having a plane upper surface. The plate, indicated generally by the reference character 1 is illustrated as having an upper surface 2 which is flat, smooth and continuous, except for three series of longitudinally extending parallel slots 3, 4 and 5. The slots 3 and 4, and 4 and 5, respectively, are separated from each other by transverse continuous portions of the plates 6 and 7, the slots 3 being separated from the left-hand edge of the plate by a marginal portion 8, while slots 5 are separated from the right-hand edge of the plate, Fig. 2, by a marginal portion 9. The slots of each series are separated from each other by parallel ribs 10, 11 and 12. The outermost slots of the series 3, 4 and 5 are spaced somewhat from the side edges of the plate so as to provide uninterrupted portions 13 adjacent the two side edges.

The plate is provided with a downwardly extending marginal flange 14 and with battens 15, parallel to the end edges of the plate. These battens are preferably hollow and of what may be termed box shape, the battens having side flanges 16, extending downwardly from the transverse uninterrupted portions 6 and 7 of the plate, which form the upper surfaces of the battens. The battens also have downwardly extending end flanges 17, Fig. 5, which lie in the same plane with and are continuous with the side marginal flanges 14 of the plate, which latter, however, do not extend downwardly as far as do the side and end

flanges of the battens. The battens are also provided with bottom flanges 18 which preferably do not form closed bottoms therefor, but extend inwardly from the side and end edges of the battens comparatively short distances, as is shown, so as to leave rectangular openings 19 therebetween.

The ribs 10 and 12, referring to the bottom view of the plate, Fig. 3, extend from the end marginal portions of the plate to the adjacent side flanges of the battens 15, while ribs 11 extend between the adjacent side flanges of the battens. The outermost ribs of the three series 10, 11 and 12 are spaced apart from the side flanges 14 of the plate by uninterrupted web portions 20. The end marginal flanges 14 of the plate are preferably interrupted midway of their lengths, as is indicated in Figs. 3 and 4 of the drawings to provide convenient hand holds 21, so that in lifting the plate the hands of the workman will readily engage the under surface of the body portion of the plate. The marginal end portions 21 of the plate for the portion of the width of the plate for which the end flanges 14 are broken away are preferably somewhat wider than the end flanges 14 themselves, the end slots 3 and 5 being set back somewhat at these points so as to stiffen the plate somewhat at the points where the end flanges 14 are left out.

It will be noted that the plate is stiffened and reinforced adjacent each longitudinal edge by the side flange 14 and the adjacent ribs 10, 11 and 12, the web portion 20 of the plate, Fig. 3, with the flange on one side and the rib on the other side of the same, making in effect a channel shaped reinforcement.

It will likewise be seen that the plate is greatly lightened by cutting away the material thereof to form slots 3, 4 and 5, while stiffness and durability are provided by the provision of the battens 15, which themselves are both light and rigid in construction, and by the provision of the marginal flanges, the channel reinforcements at the side edges and the form of the ribs 10, 11 and 12 themselves, these ribs being arranged vertically on edge, all of the features above referred to being found in the preferred construction. It will also be noted that the slots or openings between the ribs of the plate furnish vents for the gases which are generated when the hot metal enters the mould and which must be carried away from the mould cavity with the least possible resistance. These gases escape readily beneath the plate, because the latter rests on the surfaces 18 of the battens, which extend downwardly further than the edge flanges of the plate allowing ample space for the outward passage of the gases.

In Fig. 1 of the drawings, the improved plate is shown in use supporting a mould which is illustrated as a conventional two part mould, comprising the cope 22 and drag 23, the sand in the mould having mould cavities therein which may be connected by vent openings 24 with the upper surface of plate 1.

The molding plate is preferably cast with a comparatively small average thickness which in the case of a plate intended for use with 15¾ inch by 9¾ inch moulds, for example, may be no greater than ⅛ of an inch. A plate constructed as is described herein, will be because of its construction, considerably stronger than a flat plate having a thickness equal to the average thickness of the plate described herein.

It will be noted that when the sand is to be rammed in the mould, by a squeezer machine, one of the molding boards described is placed on top of the sand, with smooth surface 2 of the plate against the sand, so that the battens will extend upwardly. The ram of the squeezer machine is then lowered into contact with surfaces 18 of the battens, and caused to exert pressure thereon and to thereby cause the plate to ram the sand. The construction is efficient for such service, and is sufficiently rigid to withstand the same.

The boards or plates may be stacked when out of use, one upon another, preferably with the boards all the same side up, so that they will all be spaced apart by the battens, to enable a workman readily to get his fingers between them, to lift them off the pile, as desired. A number of packed moulds may also be stacked one upon another.

It should be noted that the invention is not limited strictly to the exact details of construction which have been particularly described, but that the invention is of a considerable breadth, the scope of the invention being indicated by the following claims.

What I claim is:

1. A molding board comprising a metal plate having longitudinal a plane upper surface, said plate having openings therethrough to serve as vents for the mould positioned on the board and to lighten the construction, and having a marginal flange extending downwardly, and transverse battens extending downwardly, the construction being integral.

2. A molding board comprising a metal plate having a plane upper surface, and longitudinal slots therethrough separated by downwardly extending ribs, said slots serving as vent openings, said plate having a marginal flange, the construction being integral.

3. A molding board comprising a cast metal plate having a plane upper surface and transverse battens extending downwardly from its lower surface, the body of the plate comprising longitudinal ribs sep-

arate by slots extending between the battents, the construction being integral.

4. A molding board comprising a plate having a plane upper surface and stiffened marginal edges, and downwardly extending transverse stiffening means intermediate an opposite pair of edges, the body of the plate comprising separated downwardly extending longitudinal ribs between said transverse means and said opposite edges, the plate having an unbroken surface above said transverse stiffening means.

5. A molding board comprising a plate having a plane upper surface and stiffened marginal edges, and a plurality of downwardly extending transverse stiffening means intermediate opposite edges, the body of the plate comprising separated downwardly extending longitudinal ribs between said transverse means and between the outer edges of said transverse means and the adjacent stiffened edges, the plate having an unbroken surface above said transverse stiffening means, the construction being integral.

6. A molding board comprising, as an integral construction, a metal plate having a plane upper surface and having battens of box form extending across and downwardly from its lower surface, and having a downwardly extending marginal flange, and having its body portion slotted to provide ribs extending from one batten to the other and from the outer surface of each batten to the adjacent marginal flange.

7. A molding board comprising, as an integral cast metal construction, a plate having its longitudinal edge portions provided with parallel downwardly extending flanges to form channel shapes, marginal flanges at its end edges and transverse downwardly extending flanges, intermediate its ends, to form battens.

8. A molding board comprising, as an integral cast metal construction, a plate having its longitudinal edge portions provided with parallel downwardly extending flanges to form channel shapes, marginal flanges at its end edges and hollow downwardly extending battens intermediate its ends, the metal of the plate being in part cut away intermediate the battens and between the battens and the end edge portions.

9. A molding board comprising, as an integral cast metal construction, a plate having its longitudinal edge portions provided with parallel downwardly extending flanges to form channel shapes, marginal flanges at its end edges and hollow downwardly extending battens intermediate its ends, the metal of the plate being longitudinally slotted to provide ribs arranged on edge between the battens and between the battens and the end edge portions.

10. A molding board comprising, as an integral construction, a plate having a plane upper surface and having battens or box form extending across and downwardly from its lower surface.

In testimony whereof I have signed my name to this specification.

ANDREW C. PITMAN.