The invention relates to molds for use in pottery casting machines. This application is a division of my application Serial No. 580,401, filed March 1, 1945 which has become abandoned.

My application Serial No. 580,401 discloses a completely automatic and integrated mechanism for fabricating pottery of either the vitreous or semi-vitreous type, and which is particularly well adapted to carry out the inventions described and claimed in my Patents Nos. 2,273,015 and 2,273,016, granted February 17, 1947.

In the machine disclosed in my application Serial No. 580,401, the molds are placed in trays and the trays are caused to travel step-by-step through the machine, and all operations necessary for complete fabrication of the ware, such as cleaning the molds, pouring the slip, opening and closing the molds, drying the ware, removing, setting, inverting and stacking the ware, etc., are performed automatically.

The subject matter of the present application relates to molds adapted for use in automatic machines such as disclosed in my application Serial No. 580,401 or in other machines, and one of the objects of the present invention is to provide molds adapted to cooperate with the various elements of automatic casting machines, and so designed and constructed as to reduce wear to a minimum.

Various other objects and advantages of the invention will be apparent to those skilled in the art from the following description when taken in connection with the accompanying drawings, in which:

Figure 1 is a vertical sectional view of one of the molds;

Figure 2 is a fragmentary perspective view of one of the trays and showing one mold thereon with its upper section removed and positioned on the tray beside its lower section;

Figure 3 is a fragmentary perspective view of one of the trays with the molds removed;

Figure 4 is a sectional view of one of the trays, and showing in elevational view one of the molds closed and locked;

Figure 5 is an elevational view of one of the molds unlocked and the upper section lifted from the lower section;

Figure 6 is a detail fragmentary view illustrating the means for aligning the mold sections;

Figure 7 is a detail fragmentary view illustrating the means for mounting the upper mold section when it has been removed from the lower mold section;

Figure 8 is a detail view illustrating the mold locking means in locked position; and

Figure 9 is a similar view showing the locking means in unlocked position.

Referring to the drawings in more detail numeral 1 indicates one of the trays for carrying the molds through a casting machine. The trays are relatively long and narrow and are composed of longitudinal side bars 2 of angle formation which are united at their respective ends by end bars 3. The bars 3 are slightly longer than the width of the trays so as to provide end portions 4 which contact similar portions of adjacent trays when passing along the tracks of the apparatus and provide a slight space between the side bars of adjacent trays. The trays may carry any desired number of molds.

The molds are composed of upper and lower sections 5 and 6 respectively. These sections are in the form of metal rings of angular cross section, and to these rings are molded sections 7 and 8 made of plaster-of-Paris or other porous material which form the mold cavity. This mold construction is highly advantageous in that the metal frames of angular cross-section permit direct casting of the plaster thereto, and of course they reduce to a minimum the wear on the plaster-of-Paris mold sections as they travel through the machine and are subjected to various operations.

The mold sections are separable from each other as well as from the trays 1, and in order to properly arrange the lower mold sections in the trays and properly align the upper and lower mold sections, the lower mold sections are provided with pins 9 which extend downwardly to be received in apertures 10 in the side bars of the trays and upwardly to engage apertures 11 in the upper mold sections.

During the various operations the upper mold sections are mechanically removed from the lower sections and set on the trays at one side thereof. To facilitate the operations of removing and re-applying the upper mold sections it is desirable that the upper sections have positions in the same horizontal plane, whether on or off the
lower sections, and to this end spacing blocks 12, Figures 2, 3, and 7, are provided at one side of each lower mold section. These blocks are provided with pins 13 which enter the apertures 11 in the upper mold sections when the latter are removed from the lower sections. In other words, the apertures 11 engage the pins 9 when the upper mold section is on the lower section, and the same apertures engage the pins 13 when the upper mold sections are removed from the lower sections. The spacing blocks 12 have a vertical dimension equal to that of the lower mold sections, so that the upper sections are on the same level relative to the tray at all times, except when being moved by a lifting device.

It is essential that the mold sections be locked together during filling and also during a portion of the molding operation, and a plurality of clamps 14 are permanently attached to the molds for this purpose. These clamps are spaced around the lower mold sections and are pivoted thereto by means of pins 15. Springs 16 normally hold the clamps in released position.

Cooperating with the clamps are bolts or screws 17 which are mounted for vertical adjustment on the upper mold sections. The overhanging portions of the clamps 14 frictionally engage the heads of the bolts or screws 17 and remain in that position until the mold is unlocked by forcibly swinging the clamps outwardly.

The adjustable feature of the bolts 17 serves to provide the proper frictional engagement with the clamps 14 regardless of the wear and tear as well as inaccuracies in the mold sections.

The clamps 14 are provided with notches 18 on their upper ends to form shoulders to be engaged by hooks 19 for moving the clamps to an unlocked position. Also, the upper mold sections are provided with outwardly tapered lugs 19 on their periphery, adapted to be engaged by mechanism for opening and closing the molds, as illustrated in fragmentary fashion in Figure 5.

Each of the upper mold sections is provided with a charging or filling funnel 20 which is permanently imbedded in the plaster-of-Paris and which opens into the interior of the mold. The funnel may also perform other functions, as described in my parent application Serial No. 580,401.

From the foregoing description it will be apparent that the mold I have devised is highly advantageous in that the metal frames of angular cross-section permit direct casting of the plaster thereto, and of course they reduce to a minimum the wear of the plaster-of-Paris mold sections as they travel through the machine and are subjected to the various operations.

And it will also be apparent from the foregoing description that the mold disclosed herein is of such a construction that it is adapted to cooperate with the various elements of casting machines, such as the machine shown in my parent application Serial No. 580,401, or other machines, so that all operations necessary for complete fabrication of the ware may be performed automatically.

Having fully described the invention, what I claim is:

1. In combination a pottery mold comprising upper and lower sections, each section including a metal ring and a plaster-of-Paris molding portion attached thereto, pins extending above and below the surface of one of said rings, the other ring provided with apertures adapted to register with that portion of the pins extending above

the surface of the first-mentioned ring, and a tray provided with apertures to receive the portions of the pins extending below the rings.

2. In combination a pottery mold comprising upper and lower sections, each section including a metal portion and a plaster-of-Paris molding portion attached thereto, pins carried by one of the metal sections, the other metal section provided with apertures, and a tray provided with apertures, the apertures of the tray and of the metal section adapted to receive said pins.

3. In combination a pottery mold comprising upper and lower sections, each section including a metal ring and a plaster-of-Paris molding portion attached thereto, pins carried by the lower section, the upper section having apertures to receive the pins, a tray, and pins on said tray, said second-mentioned pins adapted to be received in the apertures in the upper sections when the upper sections are removed from the lower sections.

4. A pottery mold comprising separable metal rings, a plaster-of-Paris mold section connected to clamps connected to the metal portion of one of said sections and adapted to engage over the metal portion of the other section, a shoulder formed on the clamps to provide means to be engaged by clamp releasing mechanism, and lugs on the metal portion of the upper section to be engaged by mechanism for removing the upper mold section from the lower mold section.

5. A pottery mold comprising separable metal rings, a plaster-of-Paris mold section connected to each ring, a charging funnel permanently imbedded in and forming part of the plaster-of-Paris portion of the upper mold section, and a tray provided with apertures to receive said pins, clamps carried by the metal portion of one of the mold sections, the metal portion of the other sections having apertures to receive said pins, and means carried by the metal portion of one of the sections for locking the two sections together, and lugs on the metal portion of the upper section to be engaged by mechanism for removing the upper mold section from the lower mold section.

6. A pottery mold comprising upper and lower sections, each section including a metal holder, a plaster-of-Paris molding portion secured thereto, a charging funnel permanently imbedded in the plaster-of-Paris portion of the upper mold section, pins carried by the metal portion of one of the mold sections, the metal portion of the other sections having apertures to receive said pins, clamps carried by the metal portion of one of the sections for locking the two sections together, and the holder formed on the clamps to provide means to be engaged by clamp releasing mechanism.

7. A pottery mold comprising upper and lower sections, each section including a metal holder, a plaster-of-Paris molding portion secured thereto, a charging funnel permanently imbedded in and forming part of the plaster-of-Paris portion of the upper mold section, pins carried by the metal portion of one of the mold sections, the metal portion of the other sections having apertures to receive said pins, clamps carried by the metal portion of one of the mold sections, the metal portion of the other sections having apertures to receive said pins, clamps carried by the
metal portion of one of the sections for locking the two sections together, a shoulder formed on the clamps to provide means to be engaged by clamp releasing mechanism, and lugs on the metal portion of the upper section to be engaged by mechanism for removing the upper mold section.

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