

May 31, 1932.

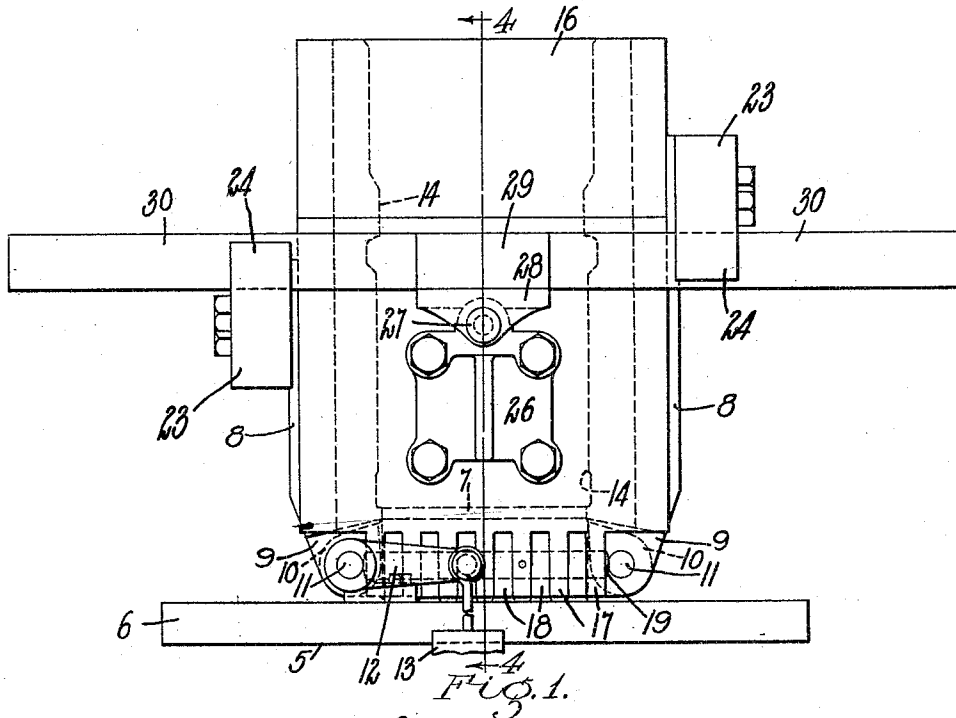
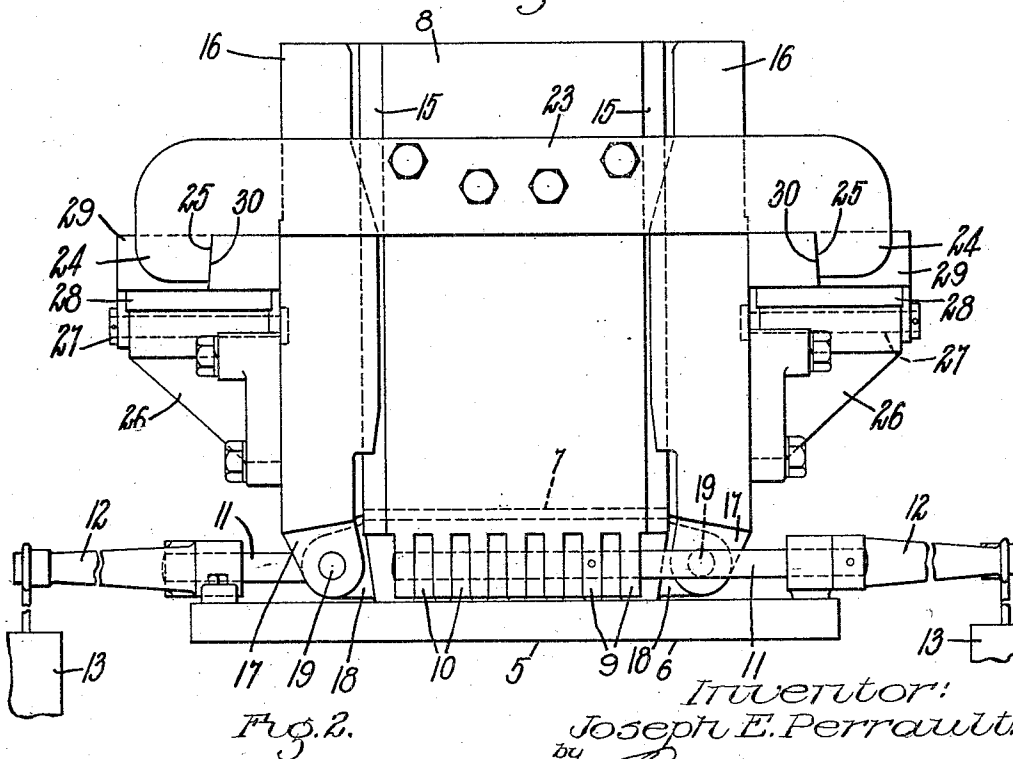
J. E. PERRAULT

1,860,429

MOLD

Filed May 3, 1929

2 Sheets-Sheet 1



Inventor:
Joseph E. Perrault.
by Charles S. Gooding,
Att'y.

May 31, 1932.

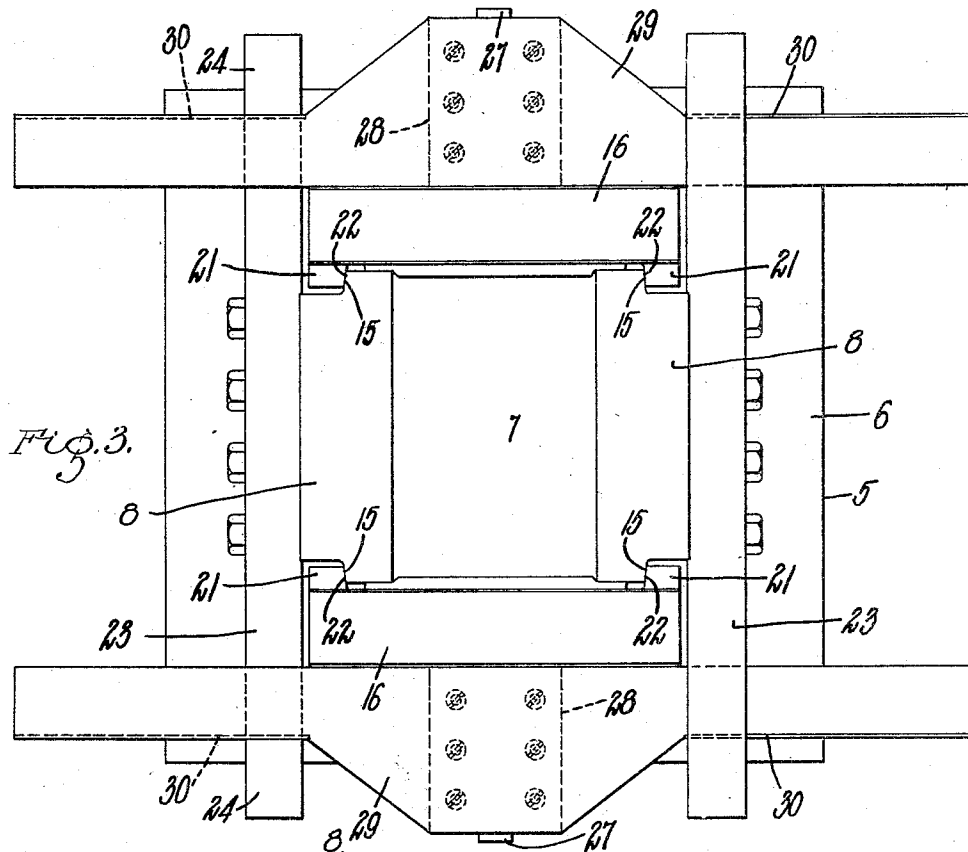
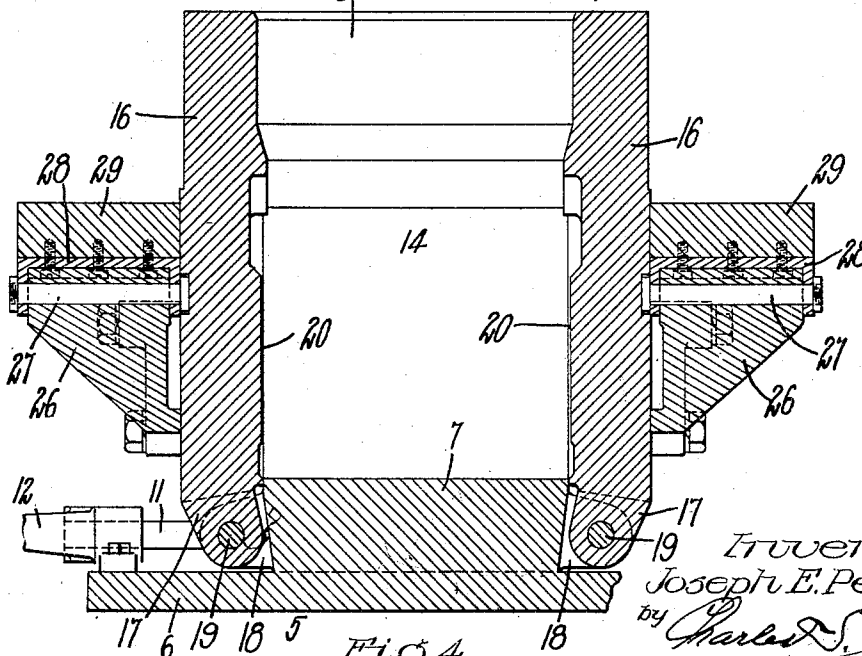
J. E. PERRAULT

1,860,429

MOLD

Filed May 3, 1929

2 Sheets-Sheet 2



Inventor:
Joseph E. Perrault,
by Charles S. Gooding,
Atty.

UNITED STATES PATENT OFFICE

JOSEPH E. PERRAULT, OF WATERTOWN, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO HOOD RUBBER COMPANY, INC., OF WILMINGTON, DELAWARE, A CORPORATION OF DELAWARE

MOLD

Application filed May 3, 1929. Serial No. 360,050.

This invention relates to a mold and particularly to a type of mold for forming electric storage battery casings from plastic material, such as rubber and the like.

5 The object of the invention is to provide a mold in which a temporarily plastic material may be molded into articles of various forms according to the shape of the forming plates employed, said mold being adapted to be associated with a hydraulic press of well known construction and the side plates of the mold being so constructed that they may be easily and quickly opened and closed and effectively locked together
10 when they are located in their closed positions.

The invention consists in a mold for forming articles from plastic material as set forth in the following specification and particularly as pointed out in the claims thereof.

Referring to the drawings:

Figure 1 represents an end view of a mold embodying my invention, said mold being illustrated in its closed and locked position.

25 Fig. 2 represents a side elevation of the mold in its closed and locked position.

Fig. 3 is a plan view of the mold in its closed and locked position.

Fig. 4 is a central vertical section taken on the line 4—4 of Fig. 1.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, 5 represents a bottom plate consisting of a base 6 and a raised portion 7 which is preferably formed integral with said base. Pivottally mounted upon opposite sides of the bottom plate 5 are side plates 8, each of which is provided with a plurality of ears 9 which are insertable between ears 10 which project laterally from the sides of the raised portion 7 of the bottom plate. A rod 11 projects through all of the ears 9 and 10, being rigidly secured in any suitable manner to certain of the ears 9 of the side plate, thereby forming a pivot for the side plate and being adapted to rock in unison therewith. An arm 12 is rigidly secured to each rod 11 at one end thereof and a counterweight 13 is suspended from the outer extremity of each arm 12.

The opposite side plates 8 are preferably duplicates of each other and an inner face 14 of each plate is formed with any suitable design thereon to produce the outer face of the article with which said plate contacts, but it is evident that the actual design upon the inner face 14 may vary somewhat upon the two side plates without departing from the spirit of this invention.

On their outer surfaces each side plate 8 is provided with bevelled surfaces 15 and preferably there is a bevelled surface 15 located upon both side edges of each side plate.

Pivottally mounted upon the other sides of the bottom plate 5 from that upon which the side plates 8 are mounted are other side plates 16, each of which has a plurality of ears 17 formed integral therewith and projecting from the lower edge thereof between a plurality of ears 18 which project laterally from the raised portion 7 of the bottom plate. A rod 19 extends through the ears 17 and 18 and thereby forms a pivot for each side plate 16. The side plates 16 are preferably duplicates of each other and each of said plates has an inner face 20 formed with any suitable design thereon to produce the outer face of the article with which said plate contacts, and it is evident that the actual design upon the inner face 20 may vary somewhat upon the two side plates without departing from the spirit of this invention.

Each side plate 16 has a pair of ears 21 formed integral therewith upon the inner surface thereof, and each ear 21 has a bevelled surface 22 which is adapted to engage the bevelled surface 15 located upon the adjacent edge of the side plates 8, when all of the said side plates are moved to their closed positions as illustrated in Fig. 3, and the bevelled surfaces 15 and 22 co-operate to position the side plates relatively to each other when said side plates are moved to their closed positions.

Rigidly secured to the outer face of each of the side plates 8 is a locking bar 23, at the opposite ends of which are laterally projecting portions 24, the inner opposite faces of which are bevelled at 25. The locking bars

23 are duplicates of each other, but upon one of the bars the projecting portions 24 point downwardly, while upon the other bar the projections 24 point upwardly, and furthermore, the locking bar 23 with the downwardly pointing projections 24 is positioned higher upon the side plate to which it is attached than is the locking bar that is provided with the upwardly projecting portions 24, see Fig. 1.

Secured to the outer face of each side plate 16 is a bracket 26 in which a pivotal pin 27 is mounted. A member 28 is mounted upon the opposite end portions of the pin 27 and said member is, in turn, rigidly secured to the under surface of a locking arm 29, each of which is provided with two bevelled edge portions 30 which are adapted to engage the bevelled portions 25 of the locking bars 23. Each locking arm 29 is so positioned with respect to both of the locking bars 23 that when it is rocked into interlocking engagement with said locking bars, that the upper edge portion of each bar will engage the under edge portion of the locking bar that has downwardly projecting portions 24, while the under edge portion of the locking arm will engage the upper edge of the locking bar that is provided with the upwardly projecting portions 24. As the locking arms 29 are rocked into engagement with the locking bars 23, the bevelled surfaces 30 and 25 of the locking arms and locking bars respectively will contact with each other with the result that the side plates 16 will be forced into engagement with the side plates 8, and all of said side plates will be locked tightly together in their closed positions.

The general operation of the mold hereinbefore specifically described is as follows:— Assuming that the various side plates are all located in their open positions and it is desired to close said plates, the two side plates 8 are first rocked into a vertical position upon their respective pivots 11 and when in said vertical positions, a portion of the inner face of said plates will contact with an edge portion of the bottom plate 5 as illustrated in Fig. 1. The side plates 8 are easily rocked into their closed position and will remain in this position by reason of the fact that they are counterbalanced by means of the counterweights 13.

The side plates 16 are then closed by grasping the end portions of the locking arms 29 and rocking said side plates 16 upon their pivots 19 until the bevelled surfaces 22 of the side plates 16 engage the bevelled surfaces 15 of the side plates 8. The locking arms 29 are then rocked upon their pivots 27 and the bevelled edge portions 30 of the locking arms are forced into engagement with the bevelled surfaces 25 of the locking bars 23, and the action of these last-named bevelled surfaces as they engage each other

is to still further force the co-operating bevelled surfaces 15 and 22 of the side plates 8 and 16 respectively into engagement with each other. After the plastic material of which the article to be molded is composed has been inserted into the cavity between the side plates, the press with which the mold is associated is operated in a well known manner to force a mandril of well known form, not shown in the drawings, into the cavity of the mold, thereby forming the article in a manner well known to those skilled in the art.

After the article has been formed and the mandril has been withdrawn from the mold, the molded article is released from the mold by reversing the operation upon the locking arms thereby releasing the side plates so that they may swing outwardly to their open positions.

I claim:

1. Apparatus for molding plastic material, said apparatus comprising a bottom mold plate, a pair of opposite side plates hinged thereto, each side plate being provided with yielding means normally to hold said plate in molding position, and a pair of opposite end plates hinged to said bottom plate, each end plate having a locking bar pivoted thereto for movement parallel thereto, each locking bar being adapted to engage both side plates and draw the plates together by a single rotative movement.

2. Apparatus for molding plastic material as defined in claim 1 in which each locking bar extends beyond the mold structure to provide a manually operable lever.

In testimony whereof I have hereunto set my hand.

JOSEPH E. PERRAULT.