March 8, 1927. 1,620,388

T. R. PALMER

APPARATUS FOR MOLDING BATTERY BOXES

Filed March 6, 1925 2 Sheets-Sheet 1

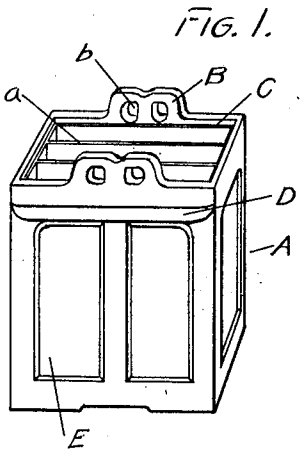


FIG. 1.

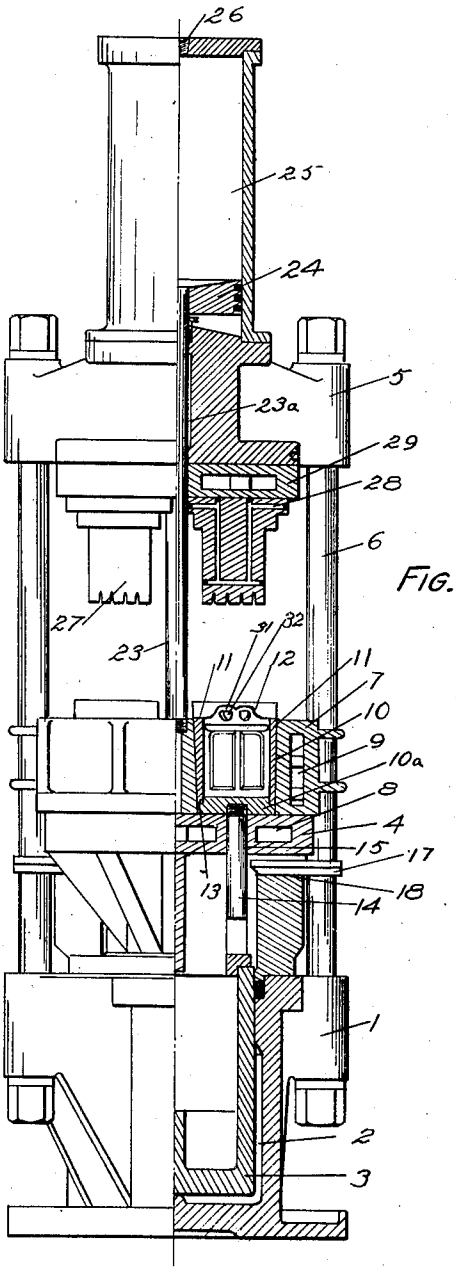


FIG. 2.

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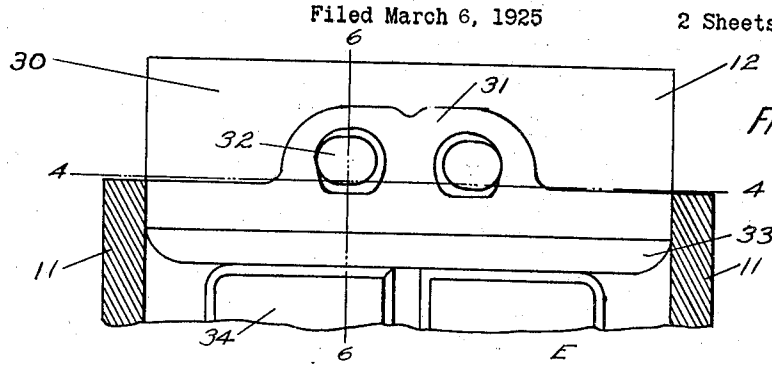


FIG. 3.

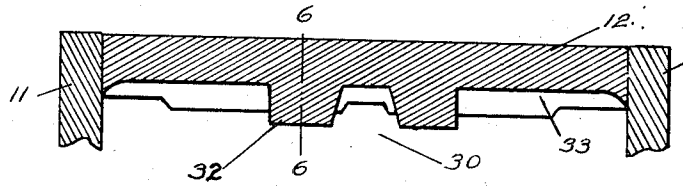


FIG. 4.

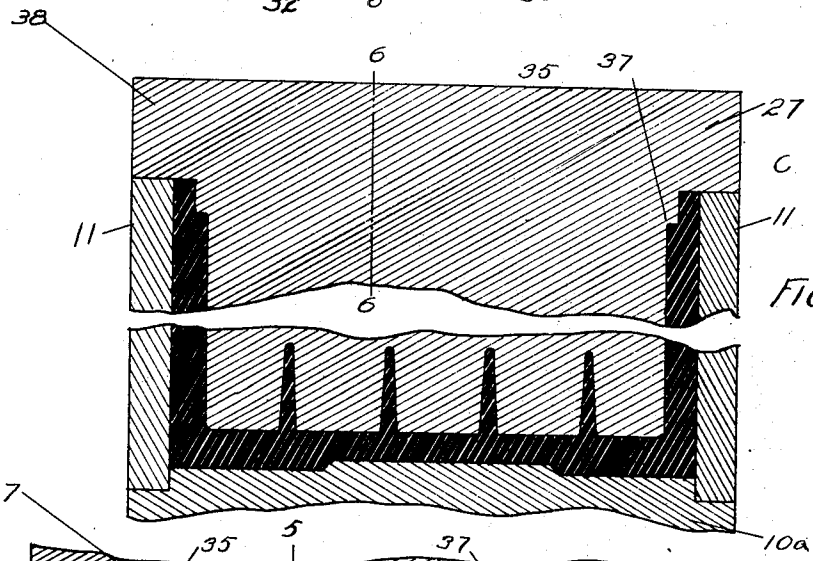


FIG. 5.

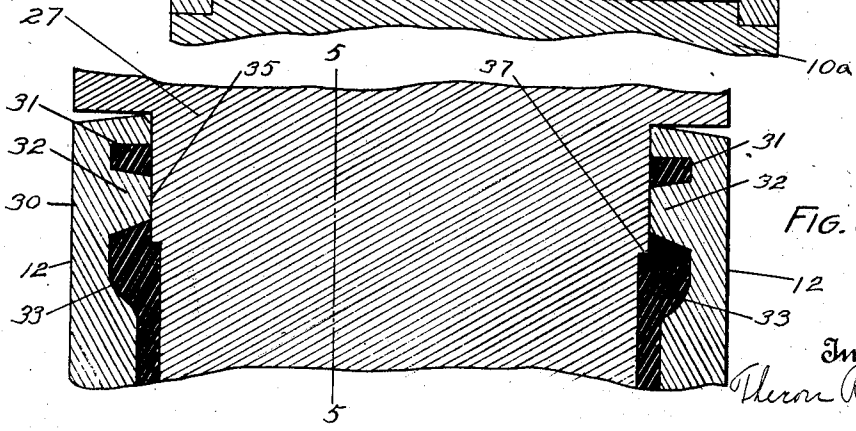


FIG. 6

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Patented Mar. 8, 1927. 1,620,388

UNITED STATES PATENT OFFICE.

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APPARATUS FOR MOLDING BATTERY BOXES.

Application filed March 6, 1925. Serial No. 13,640.

The invention is designed to form battery boxes of plastic material, such as hard rubber, with integral handles. Heretofore it has been common to form such handles filling the handle pockets of the mold with rubber stock, usually separately from the stock which forms the body of the mold. With the present invention this stock is made to flow into the handle pockets of the mold as the mold and core are forced together, the stock flowing from the bottom of the mold into the handle pockets.

The invention is illustrated in the accompanying drawings as follows:—

Fig. 1 shows a perspective view of the completed box.

Fig. 2 a side elevation, partly in section, of the press for forming the box.

Fig. 3 an end view of the mold.

Fig. 4 a section on the line 4—4 in Fig. 3.

Fig. 5 a cross section of the core and mold on the line 5—5 in Fig. 6.

Fig. 6 a section on the lines 6—6 in Figs. 3, 4 and 5.

The box A has the handles B, these being preferably formed with the double finger holes *b*. The box is provided with the usual partitions *a* and a small step C is formed just below the top edge and surrounding the box, the bottom of the step being on the same plane as the top of the partition. The ends of the box are slightly re-enforced at D and provided with the panels E. The press has the base 1, the ram cylinder 2, the ram 3, the ram head 4, the top head 5, and corner rods 6. A mold block 7 is arranged on the head 4. This is steam-heated through the pockets 8 and 9. The mold block has the mold sockets 10 and the face of the mold is formed of separable plates, a bottom plate 10^a, side plates 11, end plates 12. The bottom plate has a surrounding groove 13 which receives the bottoms of the side and end plates.

A knock-out rod 14 extends from the bottom plate 10^a through a socket 15 in the head 4. A knock-out bar 17 is slidingly mounted in an opening 18 and adapted to be moved into position to be engaged by the pin or rod 14. When, therefore, the head 4 is returned if the slide is at its inner position the engagement of this with the pin 14 forces the separable mold plates out of the mold socket.

A piston rod 23 extends upwardly from the mold block through an opening 23^a in the head 5 and is secured to a piston 24. The piston 24 operates in a cylinder 25 which is supplied through an opening 26. By means of this the head 4 is forced downwardly with sufficient pressure to strip the mold plates from the mold socket when the pin 14 engages the slide 17.

A core 27 is secured to the head 5. This has the stem channels 28 and is secured to a plate 29. These parts so far as described do not form the subject matter of this invention and are either common or the subject matter of other pending applications.

The end plate 12 of the mold has a top projection 30 which extends upwardly from the mold and this is provided with the handle-forming pockets 31 in its face, the cores 32 projecting to a plane corresponding to the inner face of the projection 30. A pocket 33 forming the re-enforcements D is arranged below the plate 30 and this merges into the wall-forming portions of the plate 34. The core has the closure surface 35 which as the mold telescopes the core wipes the face of the projection 30 and closes the pocket 31. The core has a projection 38 which closes on the top edge of the sides 11 and is provided with a shoulder 37 forming the step C of the box.

In forming the box the necessary compounded stock is deposited in the bottom of the mold. The ram is raised against the core forcing this stock to flow outwardly and upwardly along the sides of the wall forming portions of the mold and finally following up from these portions by way of the re-enforcing pocket 33 into the handle pockets 31, the core as it descends closing these pockets. Thus a perfectly formed handle is made possible without the preliminary filling of the pockets 31, these pockets receiving their stock from the main supply deposited in the mold.

What I claim as new is:—

In a battery box molding apparatus, the combination of a mold having separable side and end plates, said end plates having han-

dle-forming mold pockets and mold walls completing the mold form having portions opening in the mold forming pockets; a core having a closure surface slidably movable over the handle-forming mold pockets; and pressure means forcing the mold and core together, closing the handle pockets by the sliding movement of the closure surface over the handle-forming pockets and filling the handle-forming pockets from the stock flowing from the wall forming portion of the mold, said core seating on the side plates.

In testimony whereof I have hereunto set my hand.

THERON R. PALMER.