

No. 826,997.

PATENTED JULY 24, 1906.

M. R. CUFF.
CASTING MOLD.
APPLICATION FILED FEB. 21, 1906.

Fig. 1.

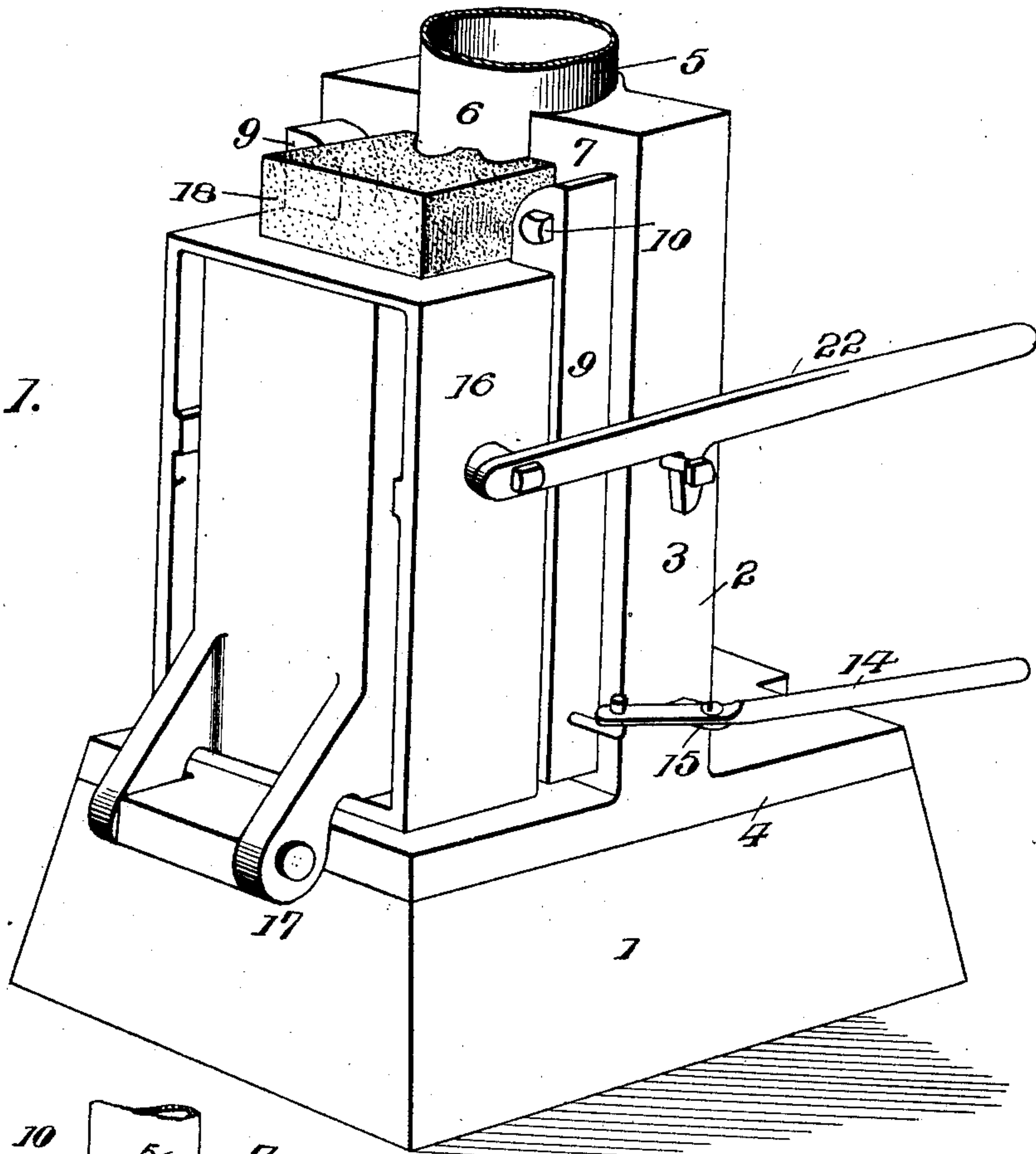


Fig. 2.

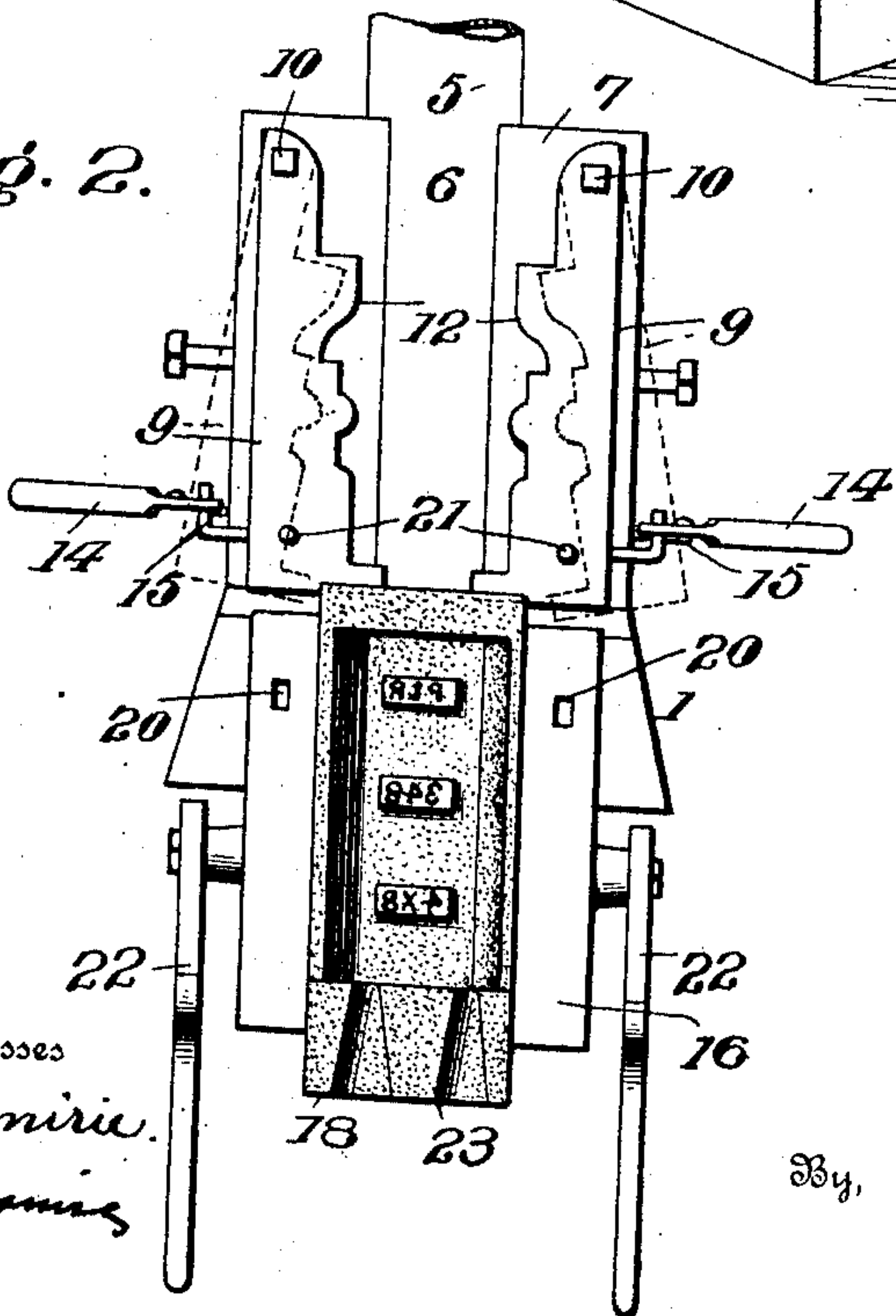
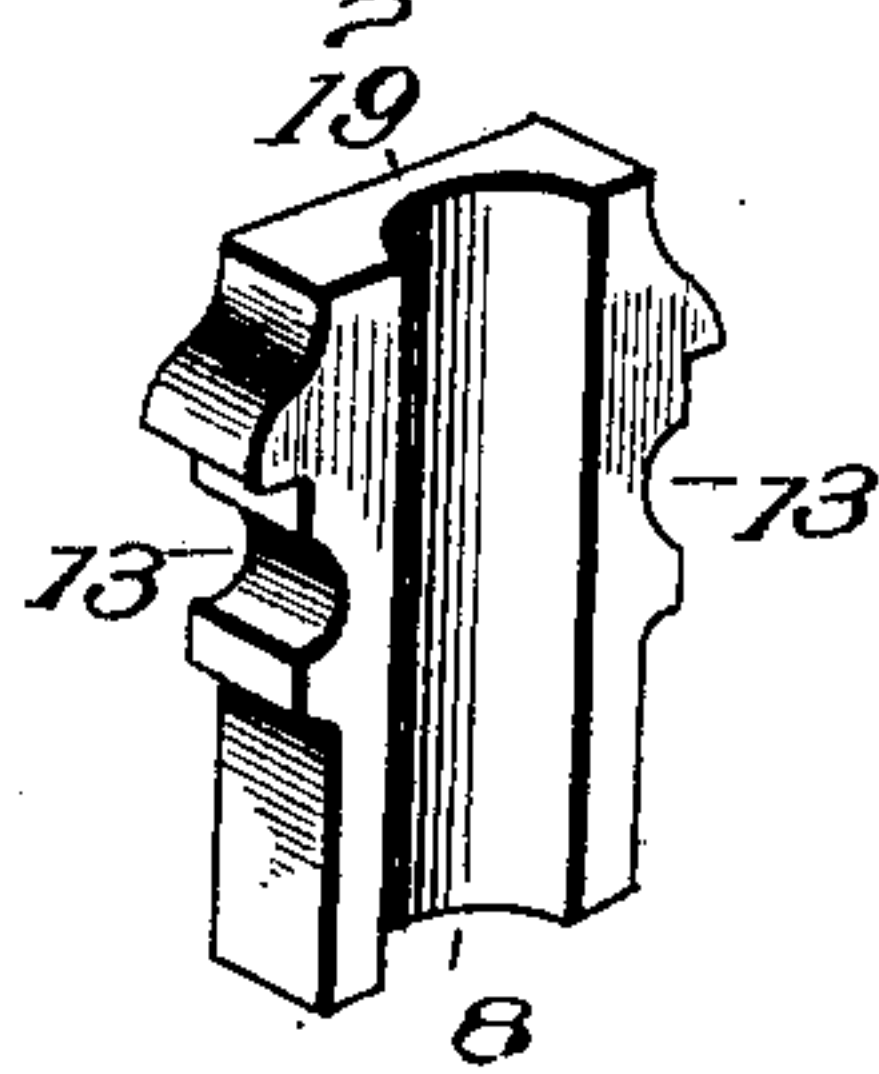


Fig. 3.



Witnesses
for Invention
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UNITED STATES PATENT OFFICE.

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CASTING-MOLD.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, MICHAEL R. CUFF, of Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Casting-Molds; and I do hereby 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.

This invention contemplates improving the mechanical construction of that class of molds for brass castings which are made of metal, usually iron, and which when closed form a cavity or matrix, into which the molten brass is poured to obtain the cast.

The object of the invention is to provide a construction especially designed for casting journal brasses or bearings for axles of railroad cars and engines, in which the parts of the mold forming the portion of the casting to which the axle-box is secured may be removed and others substituted without changing the remaining parts.

A further object is to provide a mold which may be quickly opened and closed and which is securely locked in its closed position.

The invention will be hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view showing the mold closed. Fig. 2 is an end view showing the cope opened and indicating in dotted lines the open positions of the drawbacks forming the sides of the casting. Fig. 3 shows the finished casting.

Referring to the drawings, 1 designates a base or pedestal on which is mounted a stationary frame or structure 2, having a vertical portion 3 and a widened base portion 4. A pipe 5 is vertically disposed in the vertical portion of the frame and closed at its lower end. This may contain a cooling medium, as water, or the cooling medium may be dispensed with, in which event the part 5 may be termed a "mandrel." Its face 6, projecting beyond the inner edge 7 of the vertical portion 3, and the portion of the part 3 at either side of the pipe or mandrel constitute the drag of the mold, the face 6 forming the bearing-surface in the finished casting, as indicated at 8, Fig. 3. At either side of the core formed by the face 6 of pipe 5 is a "false core" or drawback 9, pivoted to the inner face of the vertical portion of the frame or

structure 2, as at 10. Each of these drawbacks is shown having its inner edge 12 of the configuration which the casting is to assume at its sides, as indicated at 13, Fig. 3, and suitably curved at its base to fit snug against the pipe or mandrel. As an appropriate means of operating the drawbacks I have shown levers 14, mounted upon brackets 15, secured to frame 2, the ends of the levers being suitably secured by swivel-joints to the drawbacks, so that upon the levers being moved horizontally the drawbacks will swing outwardly into the position indicated in dotted lines, Fig. 2.

16 designates the cope or case pivoted to the base portion 4 of frame 2, as indicated at 17. The cope is in the form of a frame designed to accommodate a dry-sand core or insert 18, forming the back of the casting, as indicated at 19, Fig. 3. When the cope is closed, the recesses 20 on the inner face thereof are engaged by studs 21, projecting from the drawbacks 9. By this means the possibility of the drawbacks becoming laterally displaced is avoided. I have shown locking-bars 22 pivoted to the cope, by which the latter may be secured to the frame 2.

23 is a sprue-hole at the top of the cope.

From the foregoing the operation of the mold will be readily apparent. With the parts in the closed position (indicated in Fig. 1) and with or without cold water circulating through pipe 5, the fluid brass is poured in through sprue-hole 23. When the casting within the cavity has become sufficiently cool and set or hardened, the cope 16 is swung back, releasing the drawbacks 9, whereupon the latter may be swung outwardly and the casting removed. It will be noted that in the event of it being desirable to change the formation of the casting at its sides, as indicated at 13 in Fig. 3, this may readily be accomplished by removing the drawbacks 9 and substituting others of the desired formation. Likewise the dry-sand insert 18 may be removed and another substituted of the desired formation and containing the desired marking which is to appear on the back of the casting. I have found it advisable to coat the surfaces forming the mold with a mixture of crude oil and plumbago to insure the molten metal contacting smoothly with the metallic mold. In metallic molds as heretofore constructed it has been necessary to provide vents or passages to allow escape of the gases in the

metal. This has usually been done by drilling small holes or apertures through the metal, which often became clogged and failed to accomplish the purpose. It has been found in the use of the mold embodying my invention that the connections between the frame 3 and the drawbacks and between the latter and the cope, while sufficiently close to retain the molten metal and insure the correct formation of the casting, afford sufficient vents for the escape of the gases, thus avoiding the necessity of drilling holes through the walls of the mold. Practice has demonstrated that a mold embodying my invention effects a great saving of time and labor.

While I have shown and described a single mold, it is obvious that a double mold may be provided by duplicating the cope 16 and drawbacks 9 on the opposite side of pipe or mandrel 5, the frame 2 and the levers 14 and 22 being suitably changed for that purpose.

I claim as my invention—

1. In a mold for castings, a drag having a pipe designed to contain a cooling medium and to constitute a core forming the bearing-surface of the casting, a cope having an insert forming the back of the casting, independent pivotally-mounted drawbacks intermediate said drag and cope and forming the sides of the casting, and means for swinging said drawbacks away from said core.

2. In a mold for castings, a drag containing a core forming the bearing-surface of the casting, a cope containing an insert forming the back of the casting, two drawbacks piv-

otally mounted on the inner face of said drag at opposite sides of the core therein and designed to form the sides of the casting and means for swinging said drawbacks away from said core.

3. In a mold for castings, the combination with the supporting-frame having a base portion, a vertically-disposed drag, and a pipe mounted in said drag designed to contain a cooling medium and to form the bearing-surface of the casting, of a cope pivotally mounted on said base portion and containing an insert forming the back of the casting, drawbacks pivoted to said drag at opposite sides of said pipe, means for operating said drawbacks to swing them away from said pipe, and means for locking said drawbacks to said cope.

4. In a mold for castings, the combination with the supporting-frame having a base portion, a vertically-disposed drag, and a pipe or mandrel mounted in said drag and designed to form the bearing-surface of the casting, of a cope pivotally mounted on said base portion and containing an insert forming the back of the casting, drawbacks pivoted to said drag at opposite sides of said pipe or mandrel, and levers pivotally mounted on said frame and secured to said drawbacks.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

MICHAEL R. CUFF.

Witnesses:

GRAFTON L. MCGILL.
ALICE LIND.