No. 671,057. Patented Apr. 2, 1901.

G. W. PACKER.

MOLD CLAMP.

(Application filed Mar. 2, 1900. Renewed Nov. 16, 1900.)

(No Model.)

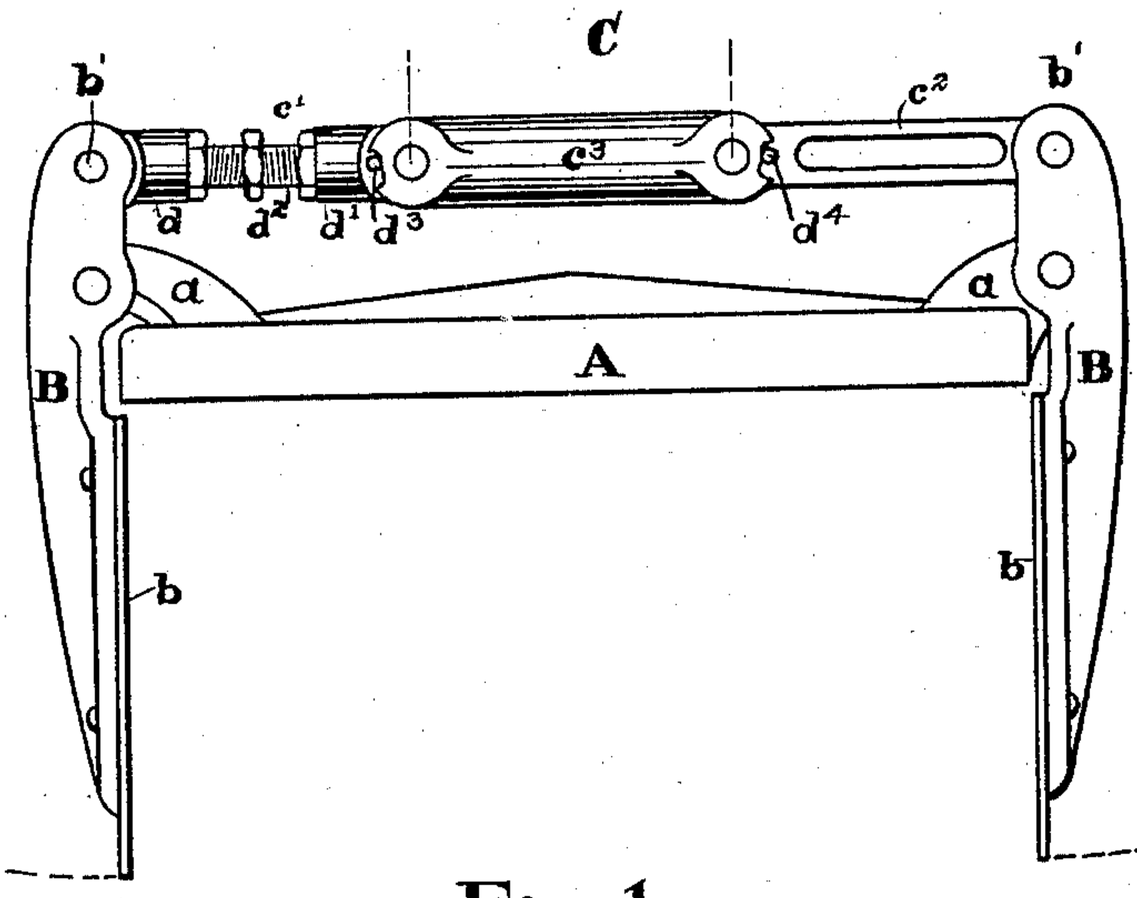


Fig. 2.

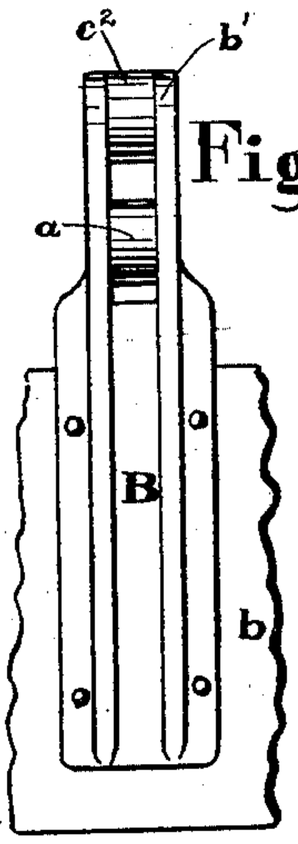
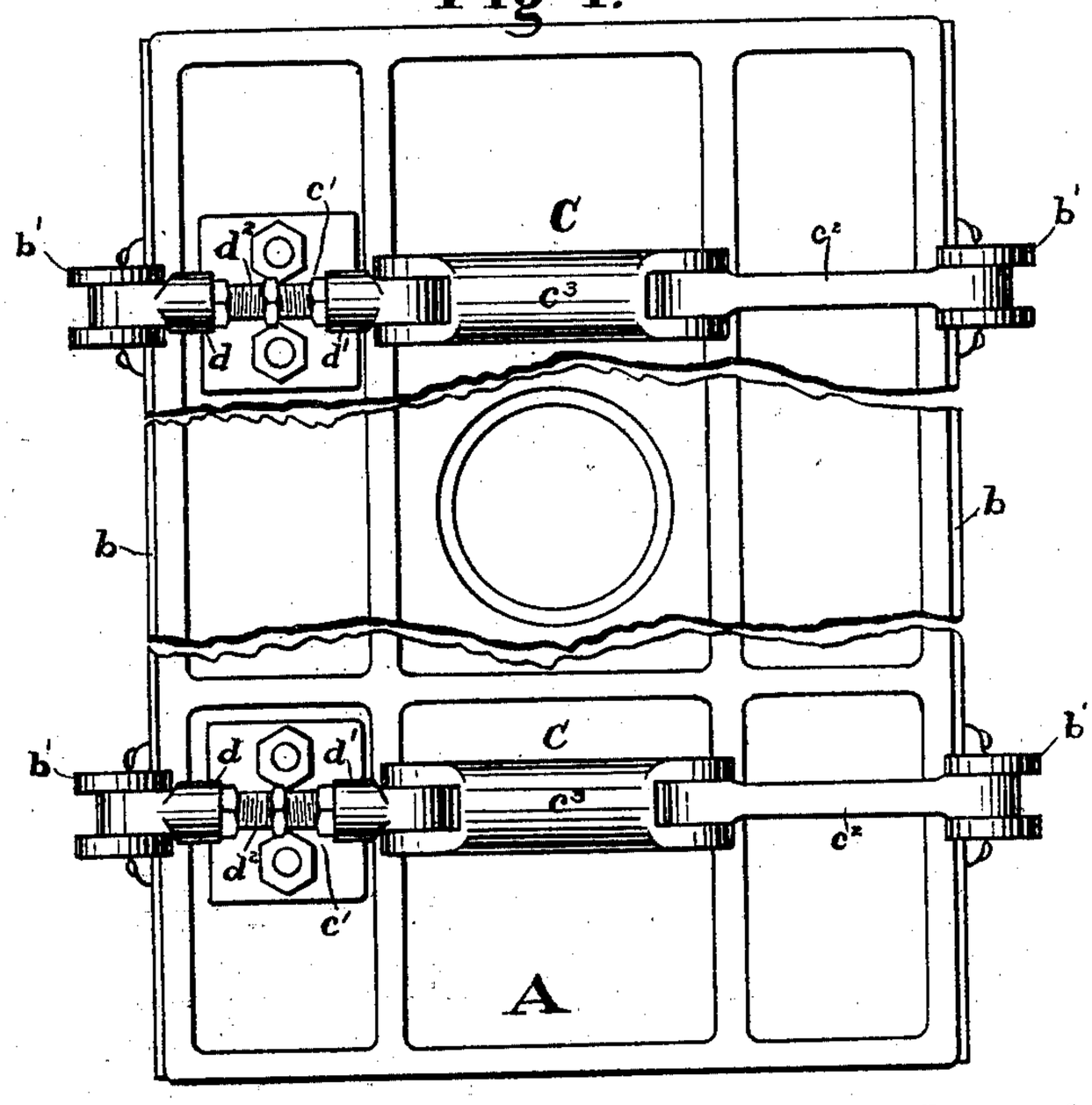


Fig. 3.

Fig 1.



Witnesses:

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UNITED STATES PATENT OFFICE.

GEORGE W. PACKER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE DEERING HARVESTER COMPANY, OF SAME PLACE.

MOLD-CLAMP.

SPECIFICATION forming part of Letters Patent No. 671,057, dated April 2, 1901.

Application filed March 2, 1900. Renewed November 16, 1900. Serial No. 36,694. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. PACKER, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Mold-Clamps, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view; Fig. 2, an end view, and Fig. 3 a detail.

The object of the invention is to provide a clamp adapted to inclose on three sides during the casting operation a sand mold which is used without a flask, so as to keep the mold intact and hold its sides in position while the molten metal is being poured in.

A is a plate having lugs *a a*. This plate is approximately of the shape and size of the top of the mold and is adapted to be pressed down on its top and to have the metal poured through an opening into the interior of the mold. Jointed to these lugs are the arms B, preferably having plates *b b* secured to them, which are adapted to reach well down toward the bottom of the sand mold to which the device is applied. The arms B and B extend upward, and at *b'* are pivoted the jointed links C C, which are constructed with one or more joints, so that when in line the plates are held firmly against the sand mold.

I prefer to make the connecting-links as follows: c^3 is a part that may be considered a handle. Connecting to its ends and to the arms *b' b'* are the links *c'* and c^2. The link *c'* consists of the threaded sockets *d* and *d'*. Into these sockets is thrust the right and left threaded bolt d^2. In order that the various parts of the link may assume only a straight line, as shown in Fig. 2, stop-pins d^3 and d^4 are placed adjacent to the joints at the ends of the part c^3. By means of the doubly-threaded bolt d^2 the down-reaching plates *b b* can be adjusted to press upon the sand mold to any extent desired. In Fig. 1 the parts just described are duplicated, whether single, double, or triple will depend upon the length of the mold to which the device is applied. If the flask be short, the arms B may be wide enough to avoid the necessity of the plates *b b*.

In order that the method of use of this device may be clearly understood, let us first consider it already upon a sand mold, as shown in Fig. 2. If the part c^3 be grasped by the hand and lifted, the effect is to shorten the link mechanism and swing the arms B B and plate secured thereto away from the sides of the sand mold, when the whole may be lifted away. The operation of placing the clamp upon the mold is an exact reversal of that of removing it. The plate A is first pressed upon the upper surface of the mold, and the same act presses the arms B B against the mold sides. The weight of the plate A is not so great as to prevent it from shifting sidewise by the action of the arms B B if the device is not accurately placed on the mold so as to allow them to clasp the sides properly. Entire release by the hand permits the arms B and their plates to fall to the sides of the mold. A little pressure of the hand upon the link will bring the pivots in line and the plates be pressed against the mold.

I have only shown the clamping devices at the sides of the sand mold; but it is obvious that end plates may be applied in the same manner. It is preferable that the linking device have four joints in order that the handle portion when grasped will not shift its position in the hand; but it is obvious that any linking device that will press the plates to the mold may be applied.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a clamp for sand molds, the combination of a plate adapted to be pressed upon the top of the mold, clamping-arms connected to said plate and adapted to embrace the sides of the mold, and means connecting the side arms together whereby they may be pressed against the mold sides.

2. In a clamp for sand molds, the combination of the plate A, the clamping-arms B B pivoted thereto, and a jointed linking device connecting the said arms, whereby, when the plate A is lifted from the mold, the clamping-plates are moved away therefrom, substantially as described.

3. In a clamp for sand molds, the combination of the plate A, the arms B B pivoted thereto, the extensions *b'* and *b'* therefrom, and a linking device connecting said extensions, whereby the action of lifting the whole is ef-

fective in removing the arms B B from the sides of the mold, substantially as described.

4. In a clamp for sand molds, the combination of a plate adapted to be pressed upon the top of the mold, clamping-arms connected to said plate and adapted to embrace the sides of the mold, and means connecting the side arms together whereby they may be pressed against the mold sides, said means being adjustable so as to vary the pressure.

5. In a clamp for sand molds, in combination with the plate A, the arms B B, the jointed connection C consisting of the parts c^3, the adjustable link c', and the link c^2, substantially as described.

6. In a clamp for sand molds, the combination of a plate adapted to cover the top of the mold, and plates adapted to cover the sides of the mold, said side plates being carried by clamping-arms pivotally connected to the top plate, and said clamping-arms being pivotally connected together, whereby pressure may be simultaneously applied to the top and sides of the mold.

7. In a clamp for sand molds, the combination of a plate adapted to cover the top of the mold, and plates adapted to cover the sides of the mold, said side plates being carried by clamping-arms pivoted to and depending from the top plate, and said clamping-arms having extensions upward beyond their pivotal connection with the top plate, which extensions have a toggle connection between them, whereby pressure may be simultaneously exerted on the top and sides of the mold.

GEORGE W. PACKER.

Witnesses:
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