G. SHEED.

Molder's Tool.

No. 213,073 Patented Mar. 11, 1879.

Fig. 1

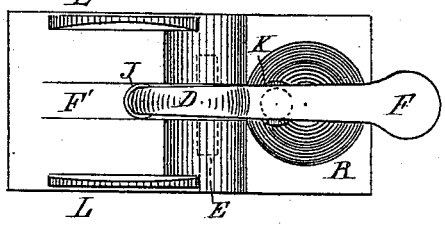


Fig. 2

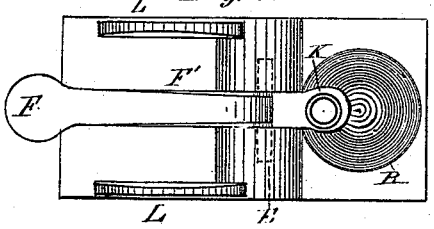


Fig. 3

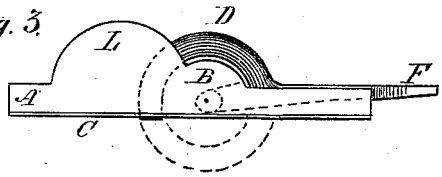


Fig. 4

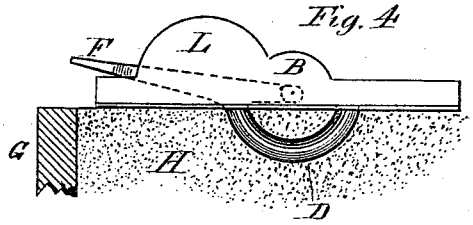


Fig. 9

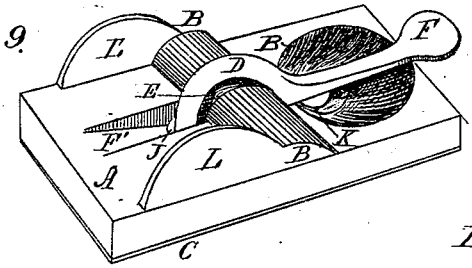


Fig. 5

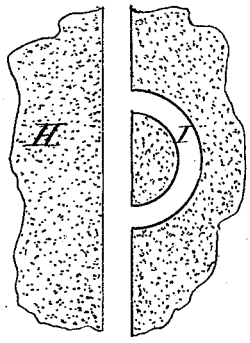


Fig. 6

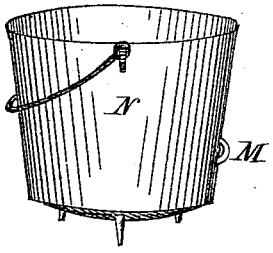


Fig. 7

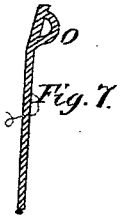
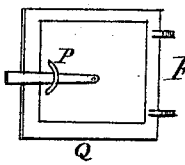


Fig 8



Witnesses:

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UNITED STATES PATENT OFFICE.

GEORGE SHEED, OF HAMILTON, ONTARIO, CANADA, ASSIGNOR TO DENNIS MOORE AND WILLIAM ASPLEY ROBINSON, OF SAME PLACE.

IMPROVEMENT IN MOLDERS' TOOLS.

Specification forming part of Letters Patent No. **213,073**, dated March 11, 1879; application filed December 2, 1878.

To all whom it may concern:

Be it known that I, GEORGE SHEED, of the city of Hamilton, in the county of Wentworth, in the Province of Ontario, Dominion of Canada, molder, have invented a certain new and useful Molder's Tool; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same.

The invention relates to an exceedingly simple but convenient molding device for the purpose of almost instantaneously making the circuitous impression of loops, bail-ears, &c., on hollow-ware sand-molds, so that when molten metal is poured into the same the castings will come out furnished with loops and bail-ears, &c., without the employment of cores, cleats, halved patterns, or other equivalent devices to produce the same.

At present many styles of hollow-ware cooking-pots are cast with a projecting lug on the outside, near the bottom, through which a hole has to be drilled. The said hole is for the purpose of inserting a hooked link to afford an easy means of tilting the utensil when hot to empty its contents.

It is principally with a view of doing away with the necessity of drilling said lugs that the said molder's tool was invented, as by its use no solid lug is cast on the utensil, but a loop instead that requires no drilling. Certain portions of various castings have loops cast upon them, which are made by patterns constructed in two pieces, and great care has to be taken in making the molds to keep said pieces in their place during the process of molding, and even with the greatest care the sand often breaks away from that part of the mold, and the casting is worthless.

My device, while especially adapted for making small loops on hollow ware, is equally good for making the bail-ears on the same, and on any casting for whatever purpose that requires loops, loop-handles, or their equivalents, a few only of which I will mention, besides stove-plate, the inner side of mold-boards for plows, fire and furnace door handles, &c.

The invention consists of a flat metal base-plate provided with a journal-bearing and a thin smooth face-plate (provided with two holes) riveted on its lower side, and a metallic punch, one portion of which is made in a half-circle, and has two projecting journals, one on each side, and is by them journaled on the base-plate, forming a center around which the head or semicircular part of the device operates. The opposite end of the punch is prolonged as a lever-handle to operate it.

The operation of the device is as follows: After a molder draws his pattern out of the sand he places the new tool with its smooth face upon that part of the mold where he wants the loop, bail-ear, or handle to be formed. He holds it firmly in position with one hand, while with the other he grasps the end of the handle and pulls it over to the other side of the plate. The curved portion by this means is pressed into the sand and makes a half-circular hole therein just the exact shape of the curved end of the punch. He then draws the handle back again to its first position, which removes the curved end from the sand, when he lifts the tool and the operation is complete, the sand around the loop requiring no further manipulation, and the casting comes out with the loop, ear, &c., in the exact shape of the pivoted pattern of the tool.

By reference to the annexed drawings, forming part of this specification, it will be seen that Figure 1 represents a plan view of the device with the lever-punch in the position before operating it. Fig. 2 is the same view, but showing the position of the lever-punch on the opposite side when the semicircular hole in the sand is made. Fig. 3 is a side view with semicircular lever-punch in the same position as shown in Fig. 1. Fig. 4 is a side view, showing the punch in the position shown at Fig. 2, the curved portion being in the sand. Fig. 5 represents a small section of a molded flask, the white vertical space being a part of the mold after the pattern has been withdrawn, and the curved space on the right the impression of the curved loop made by my aforementioned tool. Of course the casting from this will be exactly similar. Fig. 6 shows a hollow-ware kettle with a loop cast upon it. Fig. 7 is a section of the same, showing the side view of a bail-ear, the mold of

which may be made in the same way as described, but with a slight modification in the shape of the punch. Fig. 8 represents a cast-iron door with a loop-handle. Fig. 9 is a perspective view.

A represents the base-plate, which may be of any convenient size and form. B is the journal-bearing; C, the smooth under plate riveted to the base-plate A. D is the circuitous punch, the part that enters the sand first being a little smaller than the rear portion of the same, so as to draw easily. It is provided with short journals E on each side, respectively, which are placed on the journal-bearings B, forming a center around which the circuitous punch D revolves as it is operated.

F is the handle part of the said punch, which forms the lever to operate it. F′ is a longitudinal recess in the plate A for the handle of the punch D to lie in. J K are two holes in the plates for the purpose of allowing the punch to work through.

G, Fig. 4, represents a section of a flask, and H the molding-sand rammed within it, and the molding-tool placed on the smooth surface of the mold, showing the circuitous punch has entered the sand, but not yet withdrawn from it.

I, Fig. 5, shows the finished opening in the same after the tool is removed and the several parts of a flask placed together ready to receive the molten metal.

M, Fig. 6, is a loop cast on the cooking-pot N. O, Fig. 7, is a bail-ear cast on the same, and P is a loop to form a handle, cast upon the door Q, Fig. 8.

R, Figs. 1 and 2, is a shallow recess in the upper part of the tool, to enable the sand that is punched out to be readily blown off the tool before withdrawing the punch.

It will be observed that I do not confine myself to the precise form of the punch D, especially the curved portion, as they may vary in size and form to suit the shape and strength of loop, bail-ear, handle, or other equivalent device intended.

It will be observed that several modifications of the device may be made—viz., making the punch and base-plates separate, and operating the punch without a central pivot, or making a knuckle-joint of the punch on the plate; but I prefer to construct the instrument as above described, as more preferable and exact in operating.

The advantages of my invention may be enumerated as follows: It will work equally well in almost dry sand as well as moist; it saves a great amount of drilling; the device can be used not only on molds for stove-plate, hollow ware, plows, cast-iron doors, &c., but on all castings with loops or projections cast thereon for handles or other purposes; the simplicity of the invention is no less than its effectiveness, as it will work well in all kinds of molds and in every temper of molding-sand; it will answer as well for large loops as small ones, the size of the instrument being regulated according to the work and pattern required.

I claim as my invention—

A curved punch, D, centrally pivoted to or journaled on a base-plate, A and C, or the equivalent thereof, with openings J K, flanges L L, and recess R, whereby a circuitous opening may be punched in a sand-mold to produce loops, bail-ears, handles, or any such similar formations on metal castings, substantially as and for the purpose described.

Dated at Hamilton, Ontario, Canada, this 7th day of November, A. D. 1878.

GEORGE SHEED.

In presence of—
H. N. PARK,
WM. BRUCE.