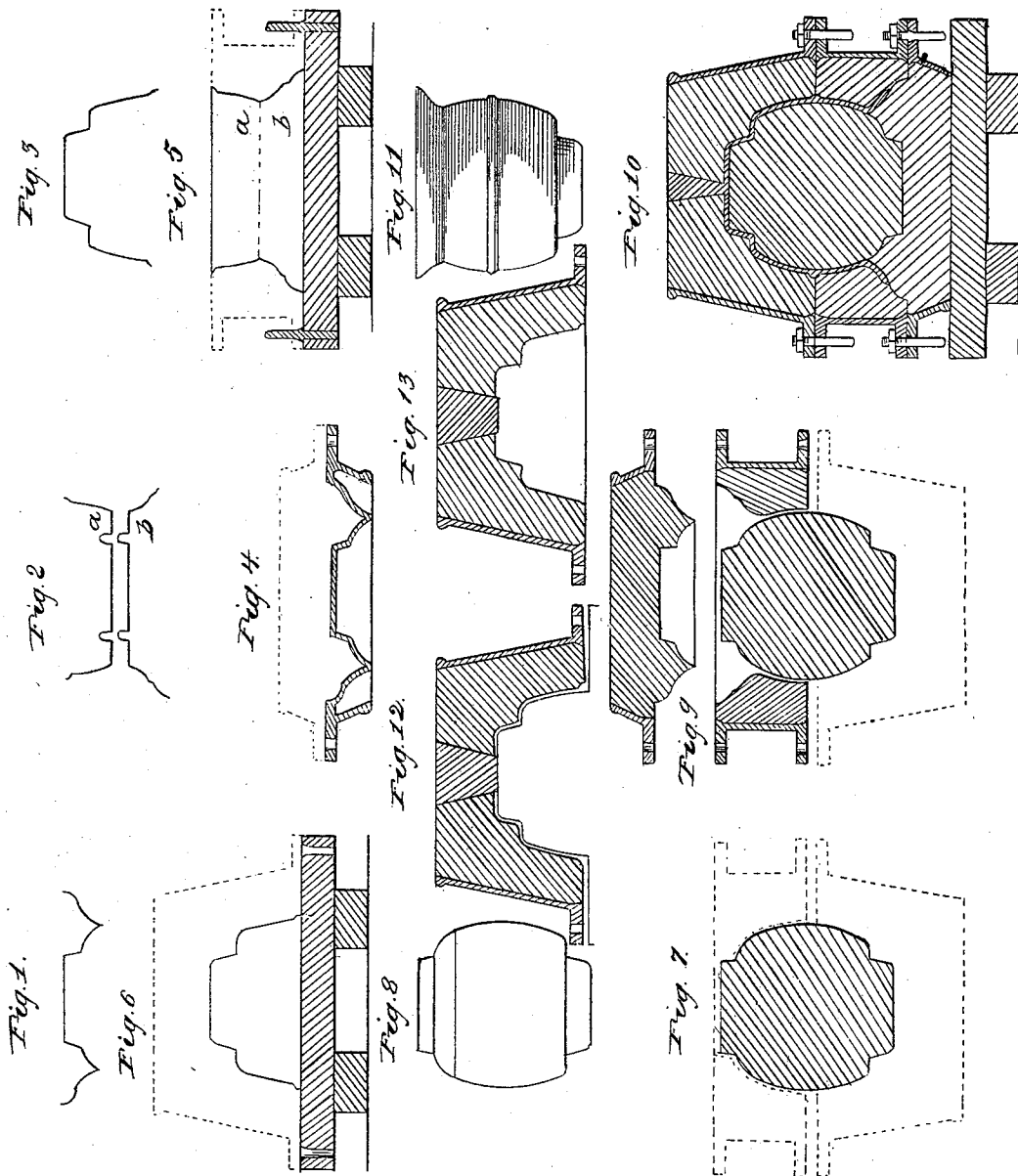


J. J. JOHNSTON.
MOLDING HOLLOW WARE.

No. 9,074.

Patented June 29, 1852.



UNITED STATES PATENT OFFICE.

JAS. J. JOHNSTON, OF CINCINNATI, OHIO.

IMPROVEMENT IN MOLDING HOLLOW WARE, &c.

Specification forming part of Letters Patent No. 9,074, dated June 29, 1852.

To all whom it may concern:

Be it known that I, JAMES J. JOHNSTON, of Cincinnati, Hamilton county, Ohio, have invented a new and useful improvement in molding hollow ware and other similar castings with a flaring rim or its equivalent, such as cannon-stoves, &c.; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, made part of this specification.

In the drawings, to which reference is made, Figures 1, 2, and 3 represent, respectively, in outline, first, the pattern forming part of the interior and the top edge of the rim of the pot and seat for the core; second, the pattern divided into two parts, (the rim *b* from the bulge *a*;) forming the exterior of the rim and the upper half of the bulge of the pot; and, third, the pattern forming the exterior of the lower half of the bulge and the bottom of the pot with its drop or sink. Figs. 4, 5, and 6 represent in vertical and central section these patterns attached to their follow-boards or match-plates with the flasks set thereon, and shown in dotted lines. Fig. 7 represents in similar section the core-box, and Fig. 8 the core with a seat adapted to suit the impression made in the flask forming the top part of Fig. 9, known as the "drag," and marked *c*. Fig. 9 shows in similar section the handling of the flasks (the dotted lines in Fig. 5 being the form of the middle division, and the dotted lines in Fig. 4 being the form of the drag) after the mold of the portions of the pattern to be molded therein and thereon is completed, these flasks being placed upon the core in their proper turn, the corresponding portion of the core-box being removed off the core. Fig. 10 shows in similar section the flasks, as seen in Fig. 9, reversed and seated on a bottom board, the remaining portion of the core-box being removed, and the flask seen in Fig. 6, known as the "cope," having its corresponding portion or bottom of the pot-pattern molded therein and put in its place upon the said divisions of the flask, these constituting the entire mold, being the exterior and interior of a pot or other similar castings with a flaring rim or its equivalent. Fig. 10 also shows the metal already run in the mold of the pot, and of course in the mold of the gate or sprue. Fig. 11 rep-

resents the pot as taken from the mold, the gate or sprue being struck off. Fig. 12 represents in vertical and central section, lengthwise of the gate or sprue pattern, the bottom portion of the pot-pattern with the gate or sprue pattern inserted therein, the cope being thereon rammed up and ready to be removed. Fig. 13 shows in similar section the said cope as removed from the pattern, the gate or sprue pattern still remaining in the sand and to be removed in the usual way.

My improvement in molding hollow ware or other similar castings with a flaring rim or its equivalent (such as the lip on cannon-stoves, cylinders, and other tubular castings) consists in using third patterns, as illustrated in Figs. 1, 2, and 3, and attached to suitable match-plates or follow-boards, (Figs. 2 and 3 giving the outside, and Fig. 1 a portion of the inside and top edge of the pot and the seat for the body of the core,) whereby I mold the exterior and a portion of the interior of the article to be cast and the seat for the body of its core, thus avoiding the handling and rehandling, the setting and resetting, of the flasks and patterns, and the necessity for accurate adjustment of them to one another, and also that portion of the (old style) ramming process, which has a direct and unavoidable tendency to displace the pattern of the rim from its seat upon the pattern of the upper portion of the bulge of the article being molded, because (when molded in the old style) it is necessary to thrust and ram the sand beneath and around the flaring rim, and thus run the risk of lifting it from its place.

In my process the core may be molded and set aside ready for use. I then ram up the cope. (See Fig. 6.) I then ram up the middle division, (see Fig. 5,) and remove the bulge portion *a* of the pattern. I then ram up the drag. (See Fig. 4.) I then remove the upper portion of the core-box, as seen in Fig. 7, and I then place the middle division of the mold removed from the remainder *b* of the pattern, as seen in Fig. 5, upon the lower portion of the core-box, the core remaining therein. I then place the drag (in which there is now the mold of the edge and inside of the rim of the pattern and the seat for the core) upon the middle division of the flask, as shown in Fig. 9, ready to be closed together. I then put a bottom

board on the drag and reverse them. I then remove the remaining portion of the core-box and place the cope (with the mold of the bottom of the pot and the gate or sprue mold formed after the manner described) upon the middle division of the flask, and thus the three divisions of the flask being in juxtaposition, the entire mold of a pot is formed ready for pouring or casting.

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

The method of molding hollow ware or other similar castings with a flaring rim or its equivalent (such as the lip on cannon-stoves or

other tubular castings) by using third patterns attached to suitable match-plates or follow-boards, and so devised that, in connection with the first and second patterns, which form the exterior, I mold these from the top edge, a portion of the interior of the desired casting, and a true seat for the core. thus, with the core, forming the entire mold, substantially as described and represented.

JAMES J. JOHNSTON.

Witnesses:

EDMUND E. JEFFRIES,
J. R. BASSETT,
THOS. G. CLINTON.