

(No Model.)

W. S. WITHERS.
FOUNDRY FLASK.

No. 561,190.

Patented June 2, 1896.

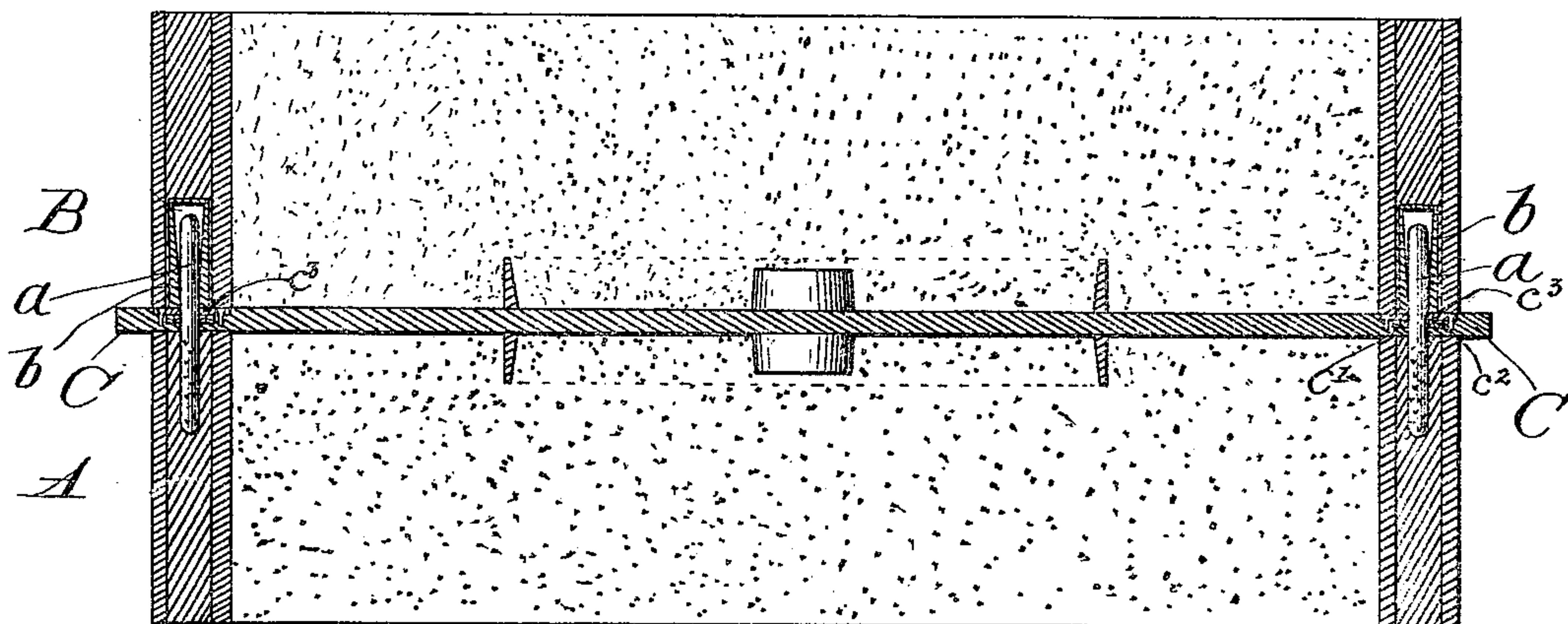


Fig. 1.

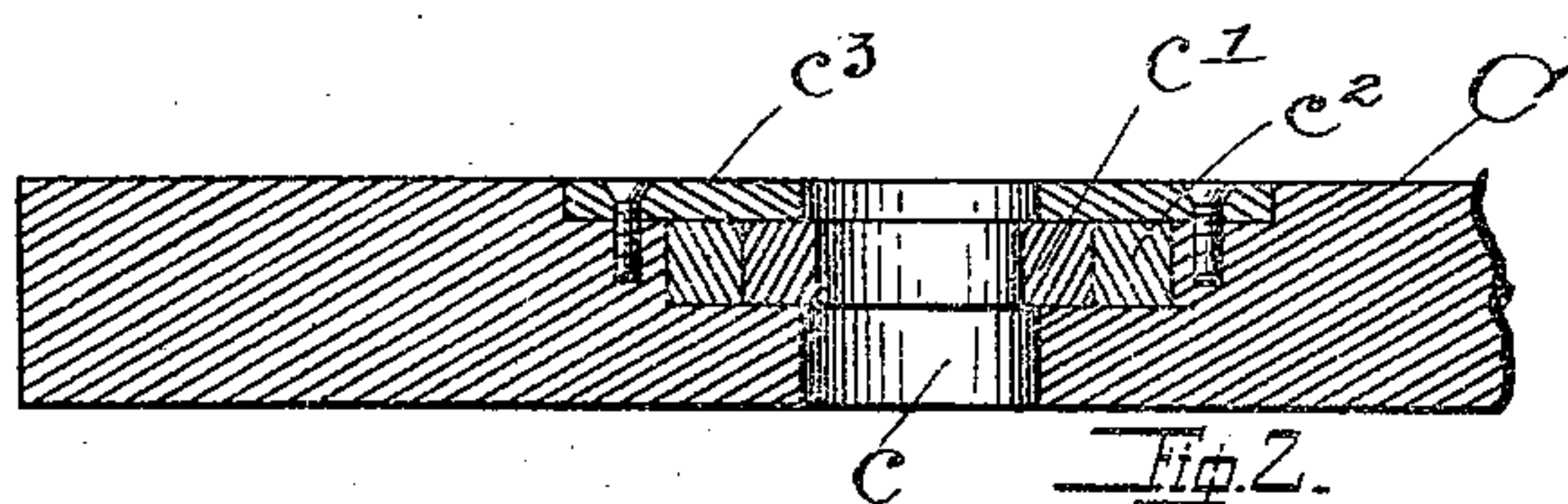


Fig. 2.

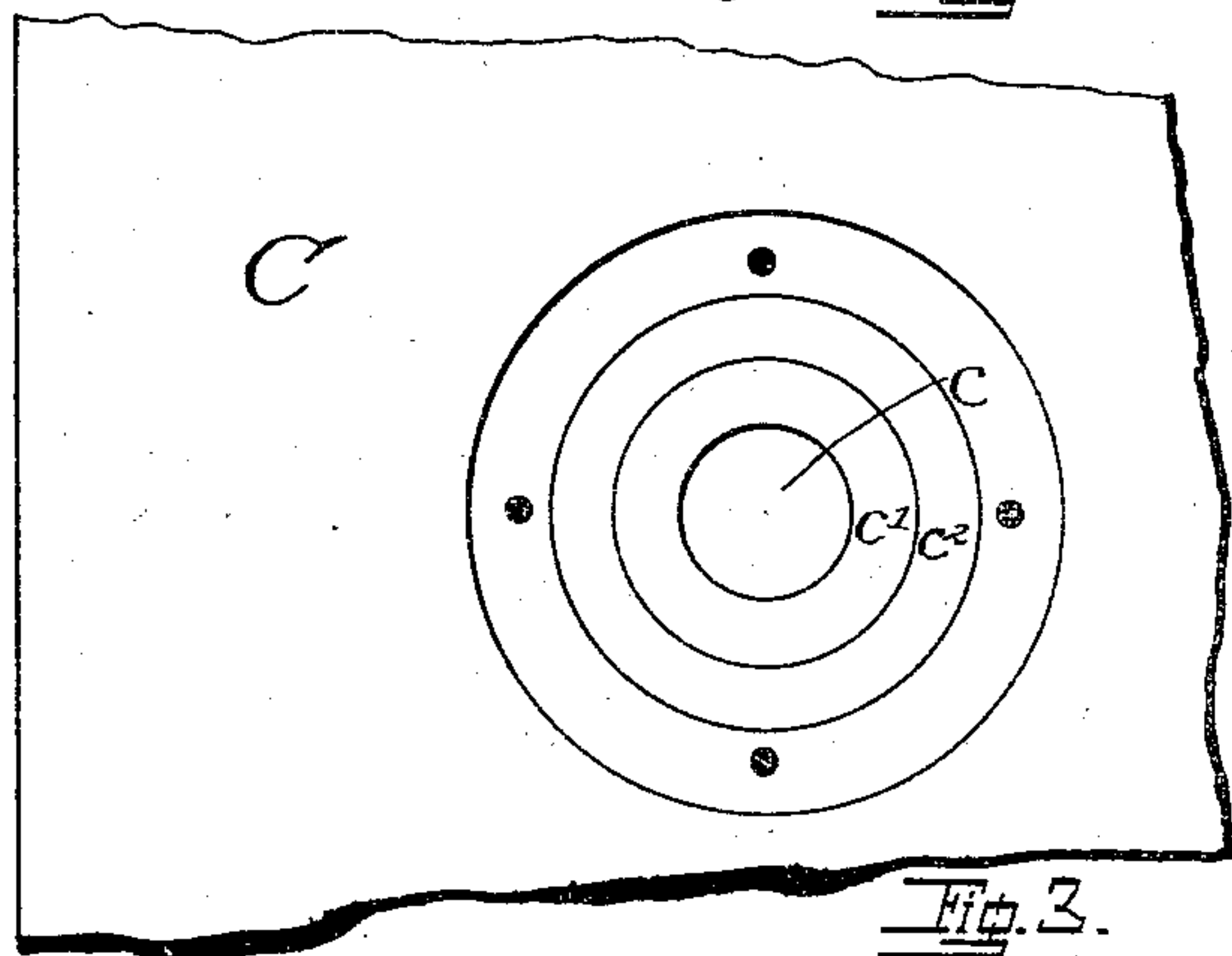


Fig. 3.

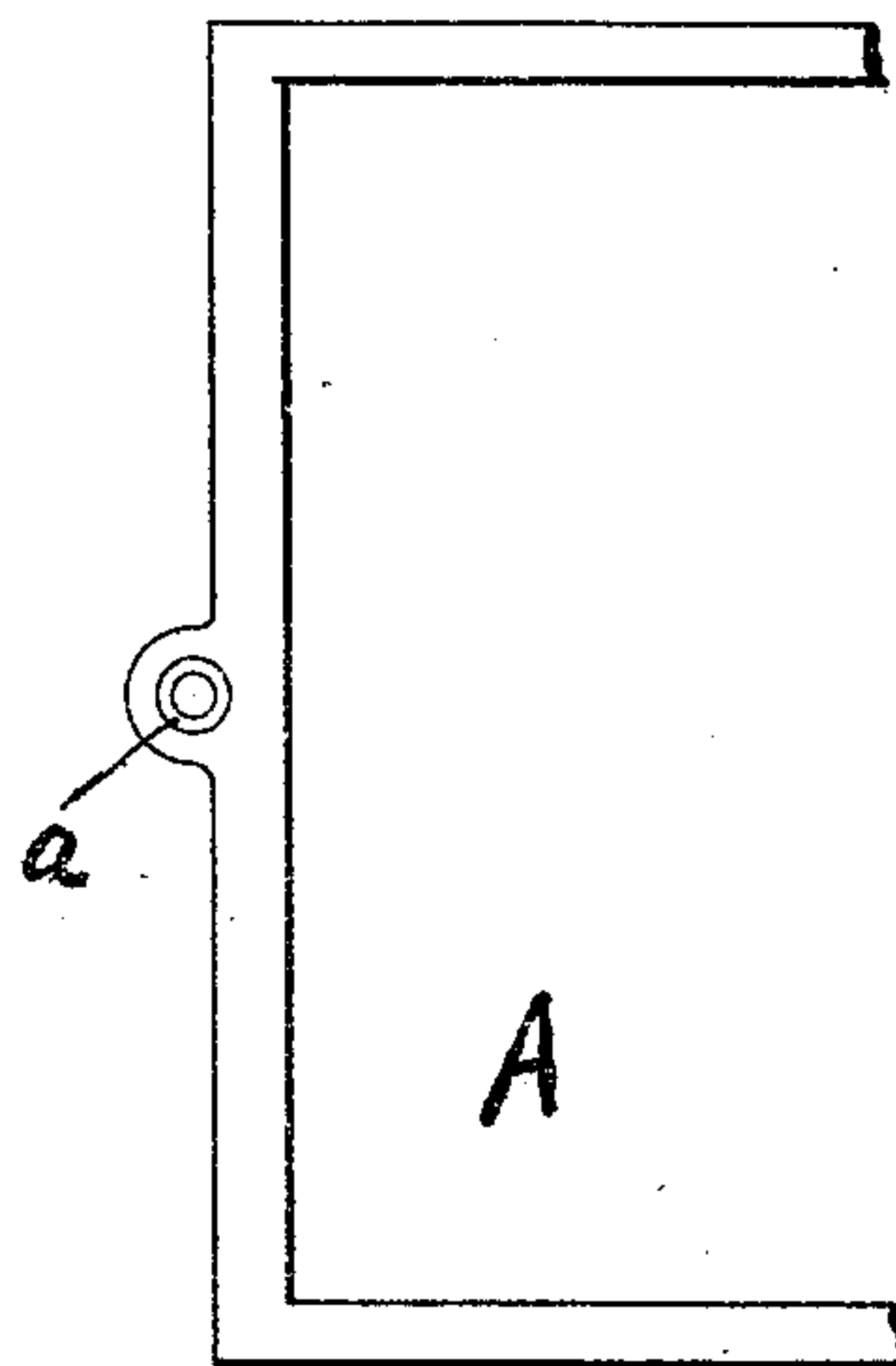


Fig. 4.

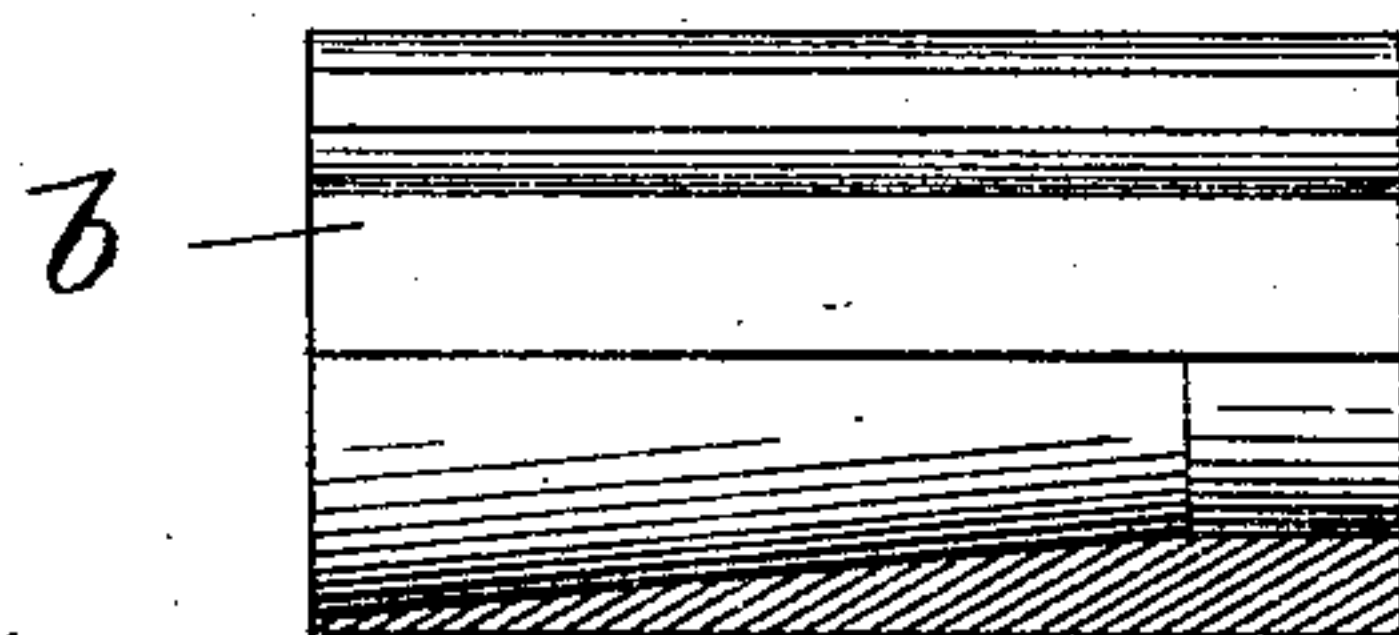


Fig. 5.

Witnesses
L. F. Hayden.
H. L. Keith

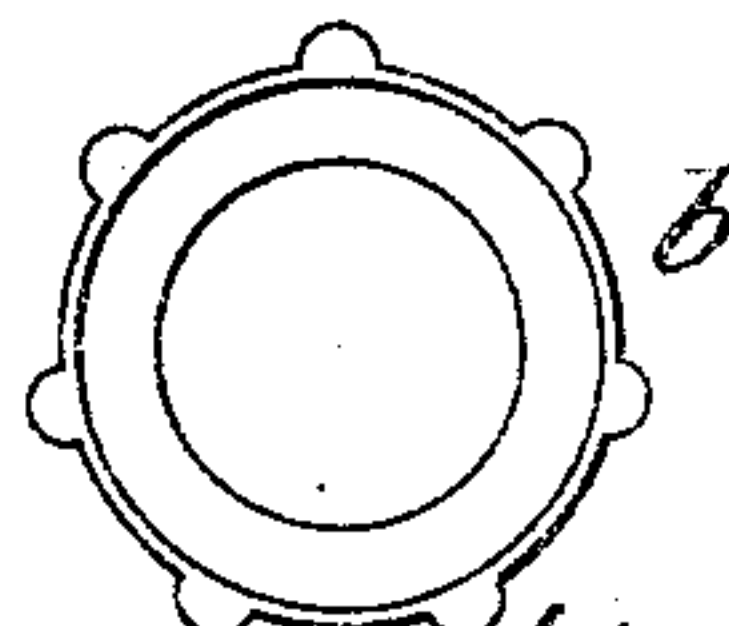


Fig. 6.

Inventor
Walter S. Withers
By Attorneys *Palmer & Fox*

UNITED STATES PATENT OFFICE.

WALTER S. WITHERS, OF ATLANTA, GEORGIA.

FOUNDRIY-FLASK.

SPECIFICATION forming part of Letters Patent No. 561,190, dated June 2, 1896.

Application filed June 24, 1895. Serial No. 553,911. (No model.)

To all whom it may concern:

Be it known that I, WALTER S. WITHERS, a citizen of the United States of America, and a resident of the city of Atlanta, in the county of Fulton and State of Georgia, have invented certain new and useful Improvements in Foundry-Flasks; 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to apparatus wherein the sand is held forming the molds for making metallic castings, the object of the invention being to obviate overlap in the casting by making uniform the rapping of the pattern, its withdrawal from the sand, and the placing together of the drag and cope, whereby the castings are not only superior in finish but the labor required is much less.

The invention consists of the novel elements of the device hereinafter set forth.

In the accompanying drawings, Figure 1 is a section of the flask on the line of the guide-pins, showing a plate therein and carrying a pattern and the sand-mold formed around same. Fig. 2 is a section through one end of the plate, showing the elastic bearing of same on the guide-pin. Fig. 3 is a plan thereof with the covering-plate removed. Fig. 4 is a plan of a portion of the flask, showing the guide-pin set therein. Fig. 5 shows the guide-socket, said figure being partly in section, showing the interior conformation thereof. Fig. 6 is an end view of said socket.

In the figures like reference-characters are uniformly employed in the designation of corresponding elements of construction.

A is the drag, and B the cope, while C is a plate carrying a pattern. The drag and cope are of the ordinary form, with the exception that their ends are provided with an enlarged portion, as shown in Fig. 4, wherein a hole is cast considerably larger than the guide-pin *a*, and, said pin being held in the desired position by suitable means, soft metal is cast in said hole around the pin and the same thereby secured in position. The guide-sockets *b* are set in the cope B in substantially

the same manner, said sockets being suitably roughened on their outer sides in order that the soft metal will hold them in place, and the chamber therein is made tapering, larger at its inner end, its outer end being of a size just sufficiently large to fit the guide-pin *a*. This reducing of the mouth of the opening in said guide-socket obviates the danger of sand which might be contained therein dropping out onto the face of the drag as the cope is inverted over it. As heretofore constructed the guide-sockets and pins of flasks must, when worn, be enlarged, the sockets being drilled larger and new pins larger in diameter inserted, which can only be done a limited number of times, after which the flask must be thrown away, while with this device the renewal of the parts is very simply and quickly accomplished.

The plate C is flat and conforms in shape to that of the flask, having above and below it, respectively, and secured thereto the cope and drag parts of the pattern to be cast. This plate is interposed between the cope and the drag, and for this purpose should have holes for the guide-pins *a*. These holes *c* for the guide-pins are made larger than same and are counterbored from one side of the plate to admit a metallic ring *c'* and a rubber ring *c''*, said rubber ring fitting peripherally the said counterbore, and the hole in the metallic ring *c'* being a fit for the guide-pins *a*. Over these rings and flush with the surface of the plate is a perforated securing-plate *c'''*, which is held in place by screws or otherwise. As soon as the rings *c'* become worn they may be easily and quickly replaced by new ones; but if made of steel and working with a cold-rolled iron guide-pin repairs would be very seldom required.

The operation of this device is as follows: The parts are assembled, as shown in Fig. 1, and the cope and drag portions of the mold are made, as usual, after which the plate is rapped on each of its four edges by one or more blows, the elastic bearing of the rings *c'* on the pins allowing the movement of the plate in proportion to the force of the blow, the rubber rings causing the said plate to fly back to its original position and preventing it from moving from beyond said original position in returning. With this device thick

edges are an impossibility. If the operations of making the cope and drag are made separately, a great advantage is obtained, and in any case a perfect parting is made.

5 Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a foundry-flask, the cope and drag sections thereof having holes cast in them
10 registering in both, pins secured in the said holes in the drag by casting in metal and chilled-iron sockets secured in the holes in the cope in the same manner, the aperture in said socket tapering smaller to its opening,
15 substantially as and for the purpose specified.

2. In a foundry-flask, the cope and drag, and a plate having apertures for the guide-pins of the latter reduced in size by collars fitting the guide-pins, and means for elastic-
20 ally holding said collars as regards edgewise

movement thereof, substantially as and for the purpose specified.

3. In a foundry-flask, the cope and drag and a plate having apertures for the guide-pins of the latter, said holes being counter- 25 bored, a rubber ring fitting each of said counterbores, and having a hole in its middle, a collar fitting said hole and being perforated centrally to receive the guide-pin and means for holding said rings in place, consisting of 30 a plate adapted to lie over said ring and collar having a hole therein, concentric with, and larger than the hole in said collar substantially as and for the purpose specified.

In testimony whereof I hereunto affix my 35 signature in presence of two witnesses.

WALTER S. WITHERS.

Witnesses:

ALBERT P. WOOD,

H. L. KEITH.