

(No Model.)

3 Sheets—Sheet 1.

R. D. HAINES
GLASS MOLD.

No. 417,176.

Patented Dec. 10, 1889.

Fig. 2.

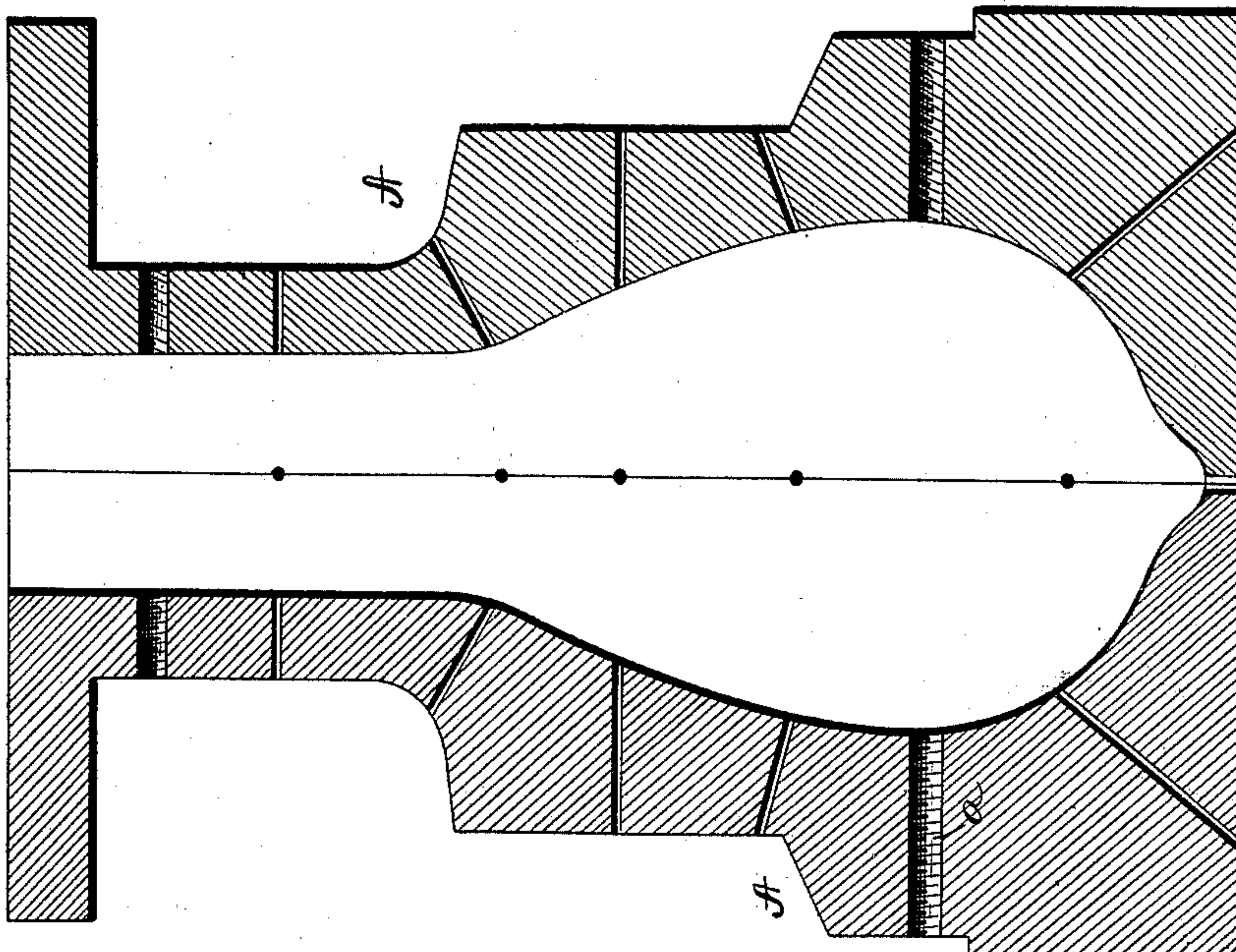
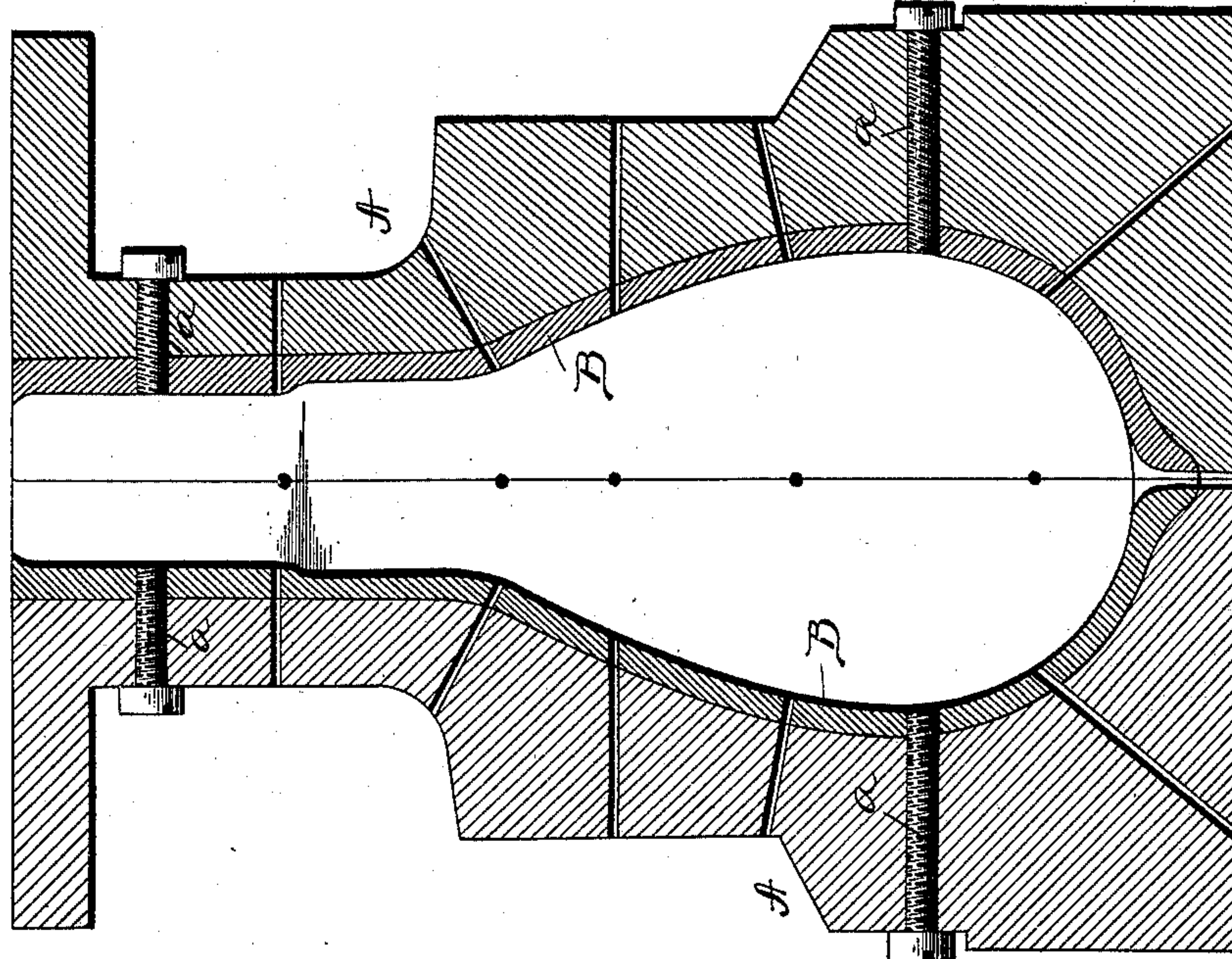


Fig. 1.



WITNESSES

J. L. Ourand
A. A. Smith

INVENTOR

Robt. D. Haines
by *C. H. Watson & Co.*

Attorney

(No Model.)

3 Sheets—Sheet 2.

R. D. HAINES.
GLASS MOLD.

No. 417,176.

Patented Dec. 10, 1889.

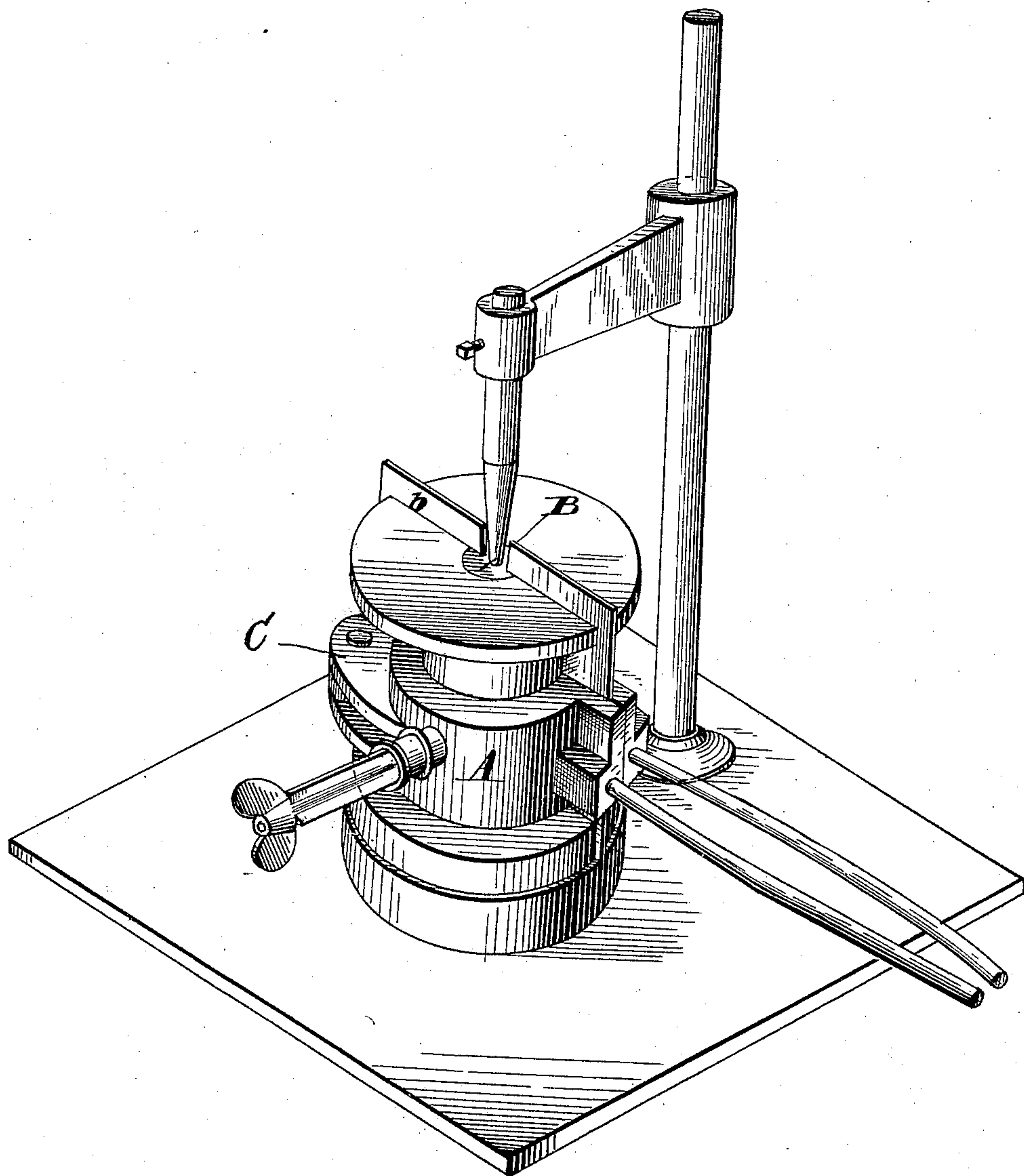


Fig. 3.

WITNESSES

F. L. Ourand.
Wm F. Folks.

INVENTOR

R. D. Haines
by C. H. Watson & Co
Attorneys

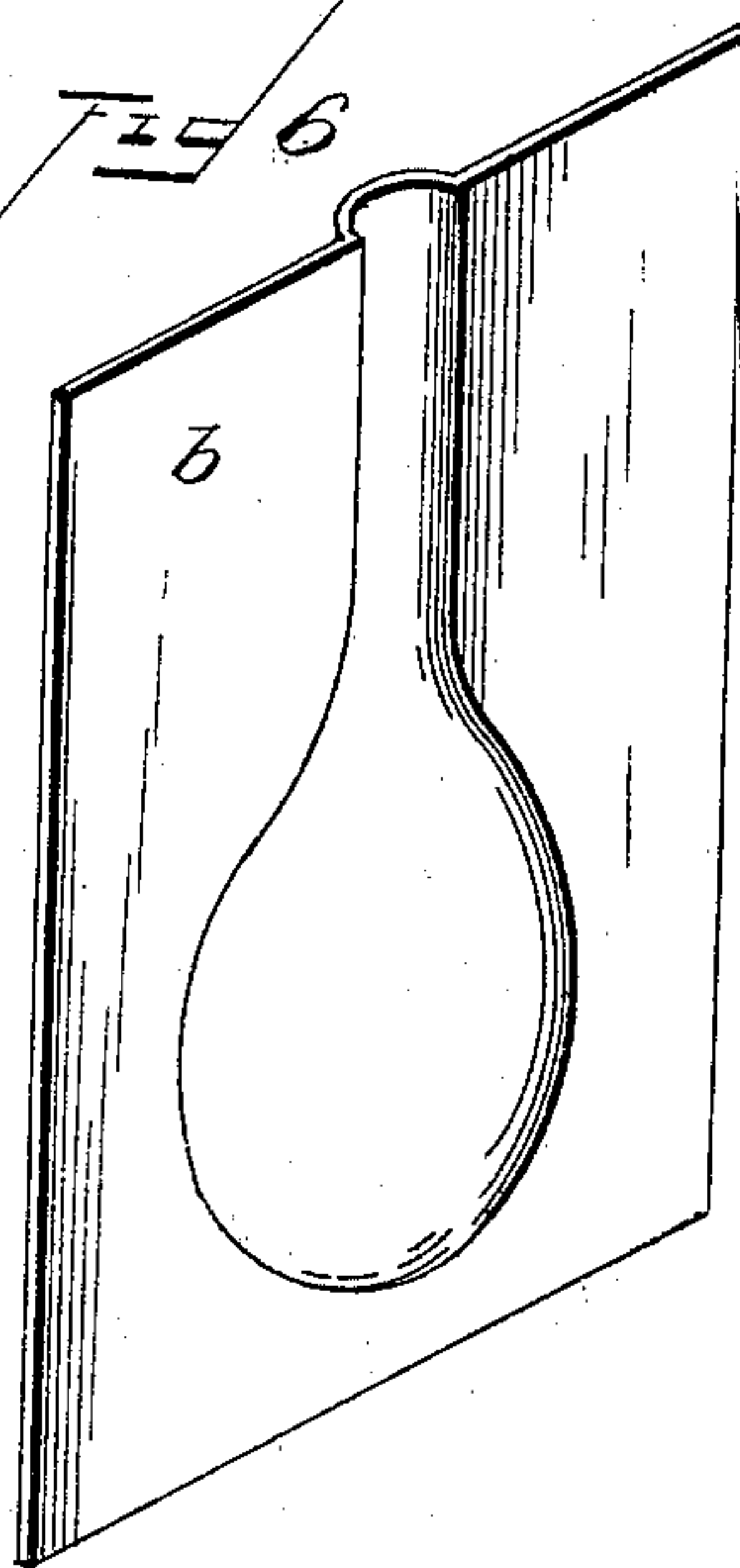
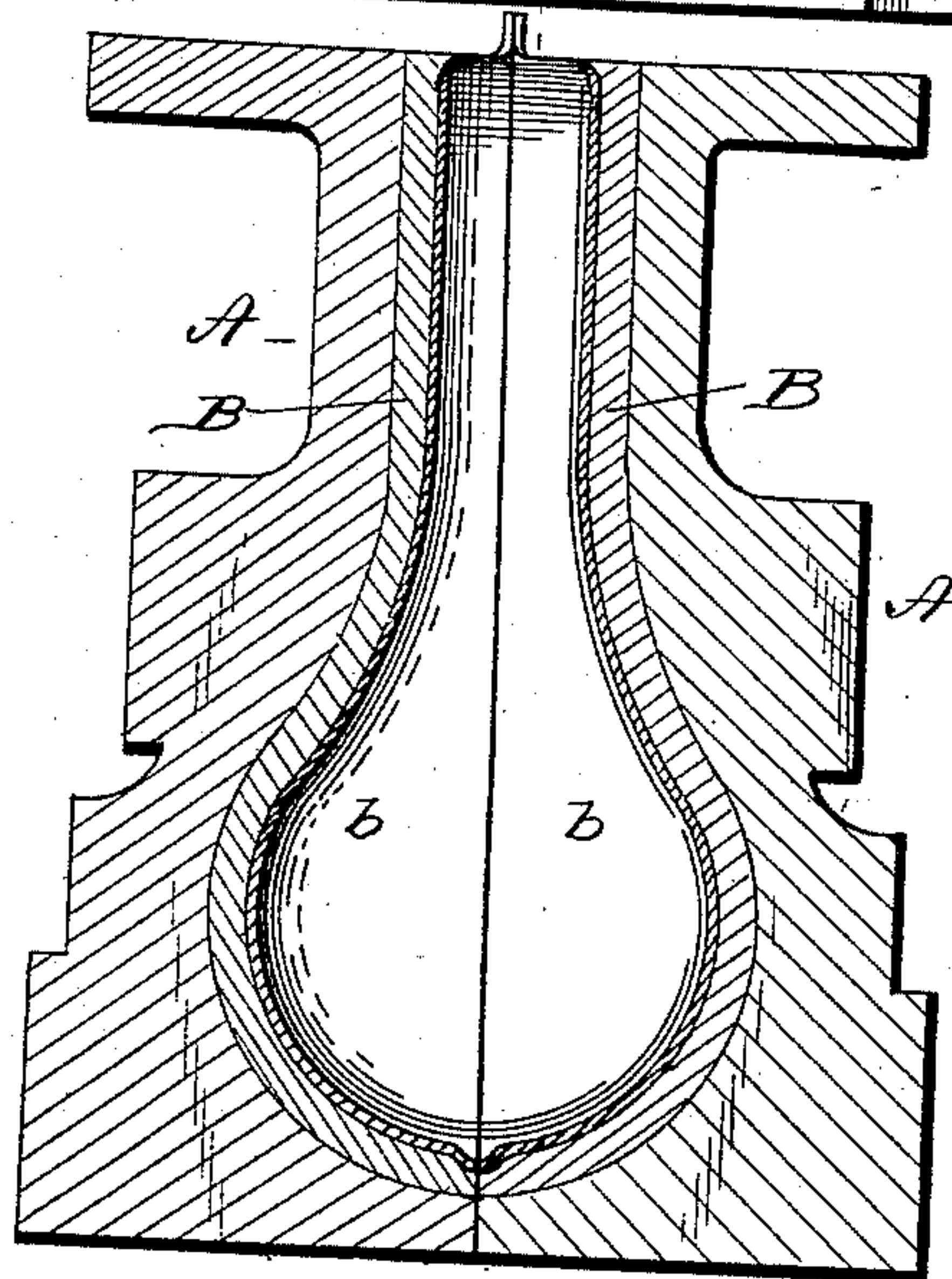
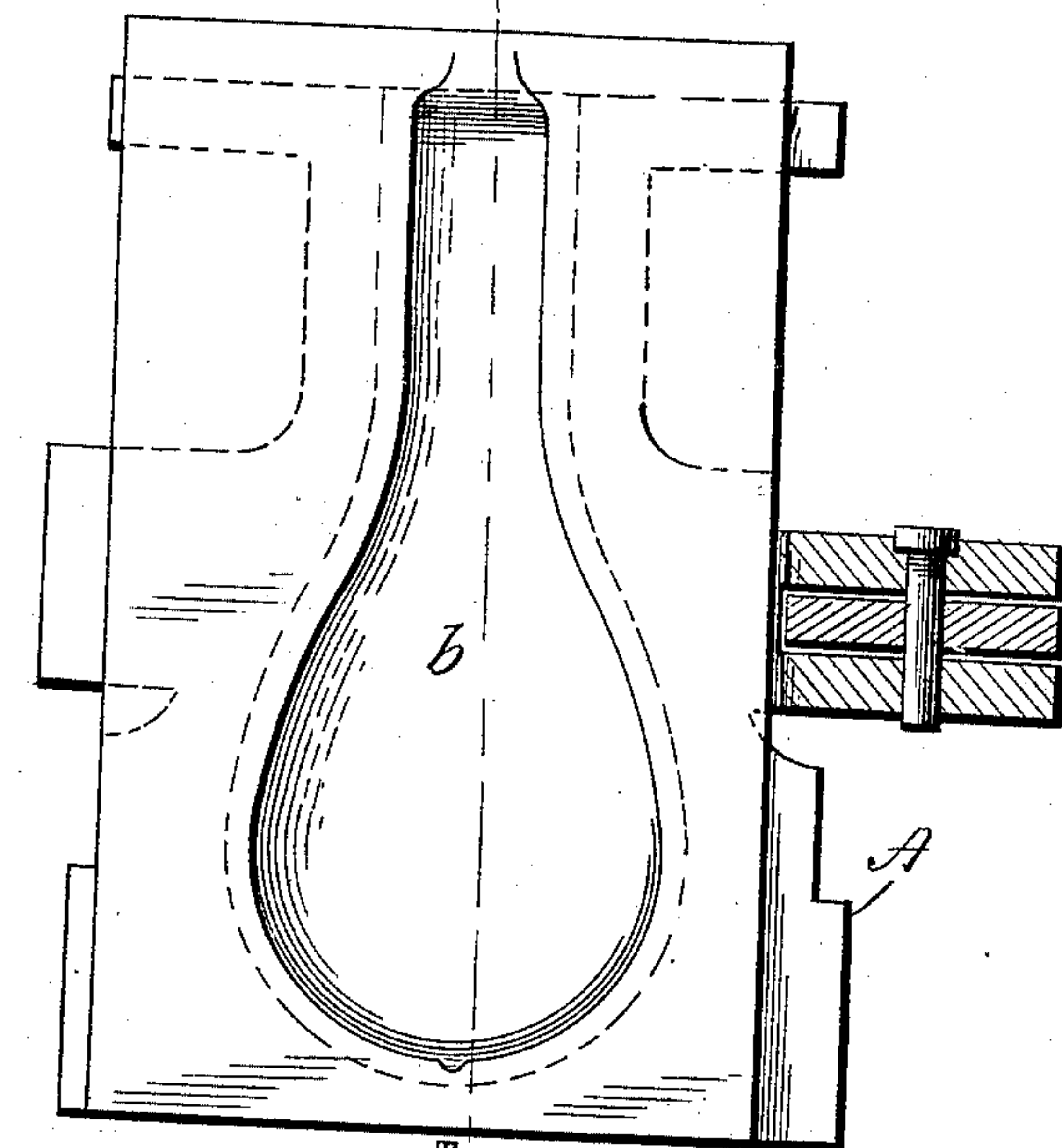
(No Model.)

3 Sheets—Sheet 3.

R. D. HAINES.
GLASS MOLD.

No. 417,176.

Patented Dec. 10, 1889.



WITNESSES

F. L. Curran
W. A. Smith

INVENTOR

Robert D. Haines

By Chas. H. Watson & Co.
Attorneys

UNITED STATES PATENT OFFICE.

ROBERT D. HAINES, OF CORNING, NEW YORK.

GLASS-MOLD.

SPECIFICATION forming part of Letters Patent No. 417,176, dated December 10, 1889.

Application filed May 11, 1889. Serial No. 310,373. (No model.)

To all whom it may concern:

Be it known that I, ROBERT D. HAINES, a citizen of the United States, residing at Corning, in the county of Steuben and State of New York, have invented certain new and useful Improvements in Glass-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.

My invention relates to improvements in glass-molds; and the object of my improvement is to provide a glass-mold having the outside shell made of any suitable material, and a removable lining for the cavity of same of a different and finer material. I attain this object by a certain combination and arrangement, fully described in this specification, and illustrated in the accompanying drawings, in which—

Figure 1 is a sectional view of the mold with the lining. Fig. 2 is a similar view without the lining. Fig. 3 is a view of the mold in an upright centering-machine, clamped, showing how the templets are placed in the outer shell with a view of casting the lining. Fig. 4 is a sectional view showing the templets in the outer half of the mold. Fig. 5 is a transverse sectional view of same. Fig. 6 is a perspective of one of the templets.

A designates the body of the mold, which is made of any suitable material. In each half of the body A there are two screws *a*, for the purpose of securing the inside lining B in its normal position. This is accomplished simply by tightening said screws, as shown in Fig. 1. When it is necessary to remove the lining B, the screws *a* are loosened until their inner ends cease to press against said lining. I attach special importance to this feature of my invention, for the reasons hereinafter set forth.

After the outside shell of my mold is constructed I place the same in an upright centering-machine, as shown in Fig. 3. Two (2)

templets, of the size, shape, and style of the mold desired to be manufactured, are then taken and thoroughly smoked, after which they are inserted in the cavity of the mold, which is firmly clamped together by means of said machine. The metal that forms the removable lining B is then prepared and cast into the space between the templets *b* and the inner cavity of the mold. The mold is then unclamped and the templets quickly removed, leaving a smooth and removable lining. Said lining may be run of Babbitt metal, or any other metal that is fusible at a low temperature and less of a conductor than iron, which will act in harmony with the glass while being blown and make a clear seamless article.

It will be observed that my mold may be made of any desired shape or pattern to manufacture tumblers, bottles, lamp-chimneys, &c.

I attach special importance to this invention for the following reasons, namely:

First, the inside lining can be removed at any time and other shapes run into the cavity of the mold. This is easily accomplished and enables a different mold to be made in an hour or so, whereas two or three days would be required by the ordinary method.

Second, by the aid of my invention old molds can be utilized simply by running in a new lining of the shape and style desired. This is a great convenience and saving.

What I claim is—

In a glass-mold, the outside shell having the screws *a* located near the top and bottom of said shell and extending through the same, in combination with a removable lining of finer and different material cast in said shell and removably secured by means of said screws, substantially as described.

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

ROBERT D. HAINES.

Witnesses:

E. D. MILLS,

C. F. HOUGHTON.