

(No Model.)

T. J. BRADBERRY.
RETAINING BAR FOR MOLDING FLASKS.

No. 505,155.

Patented Sept. 19, 1893.

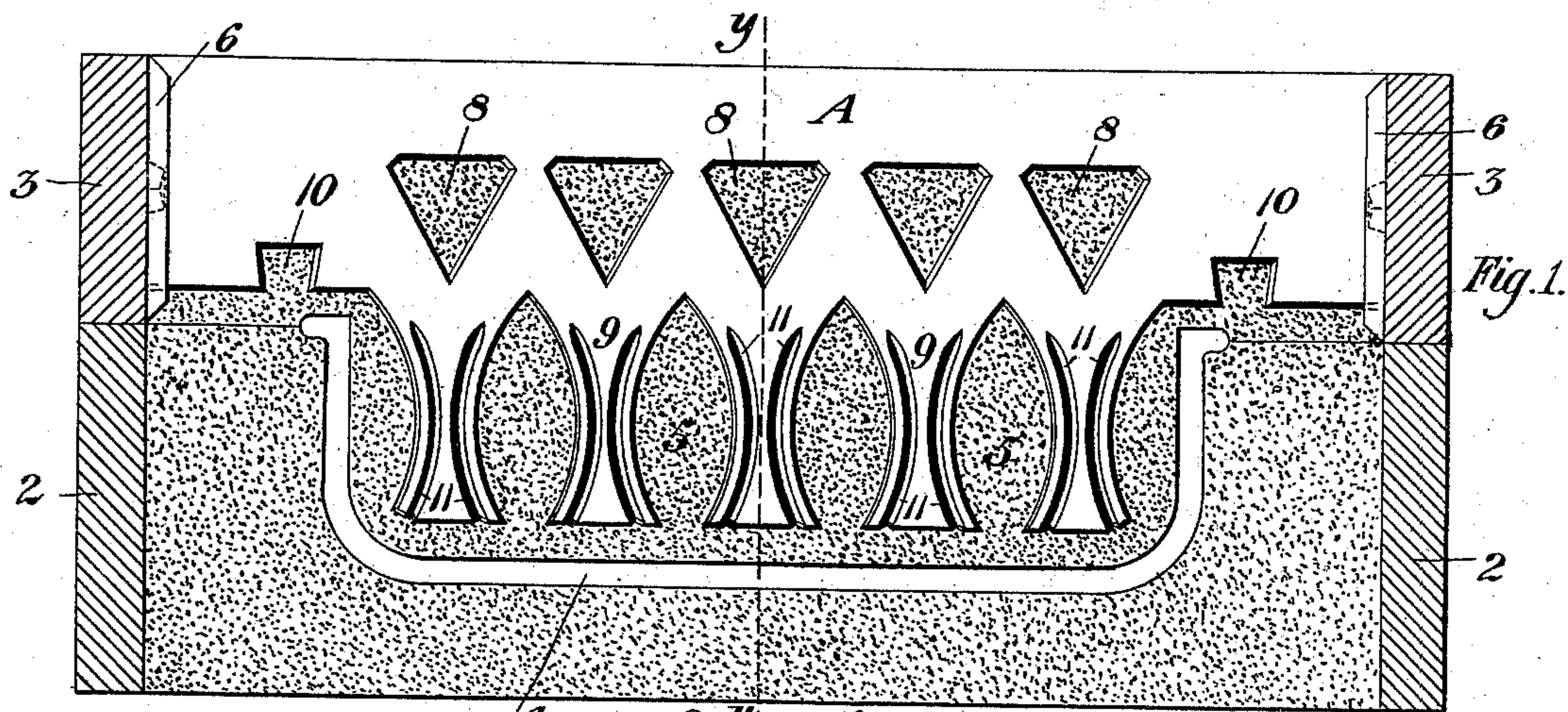


Fig. 1.

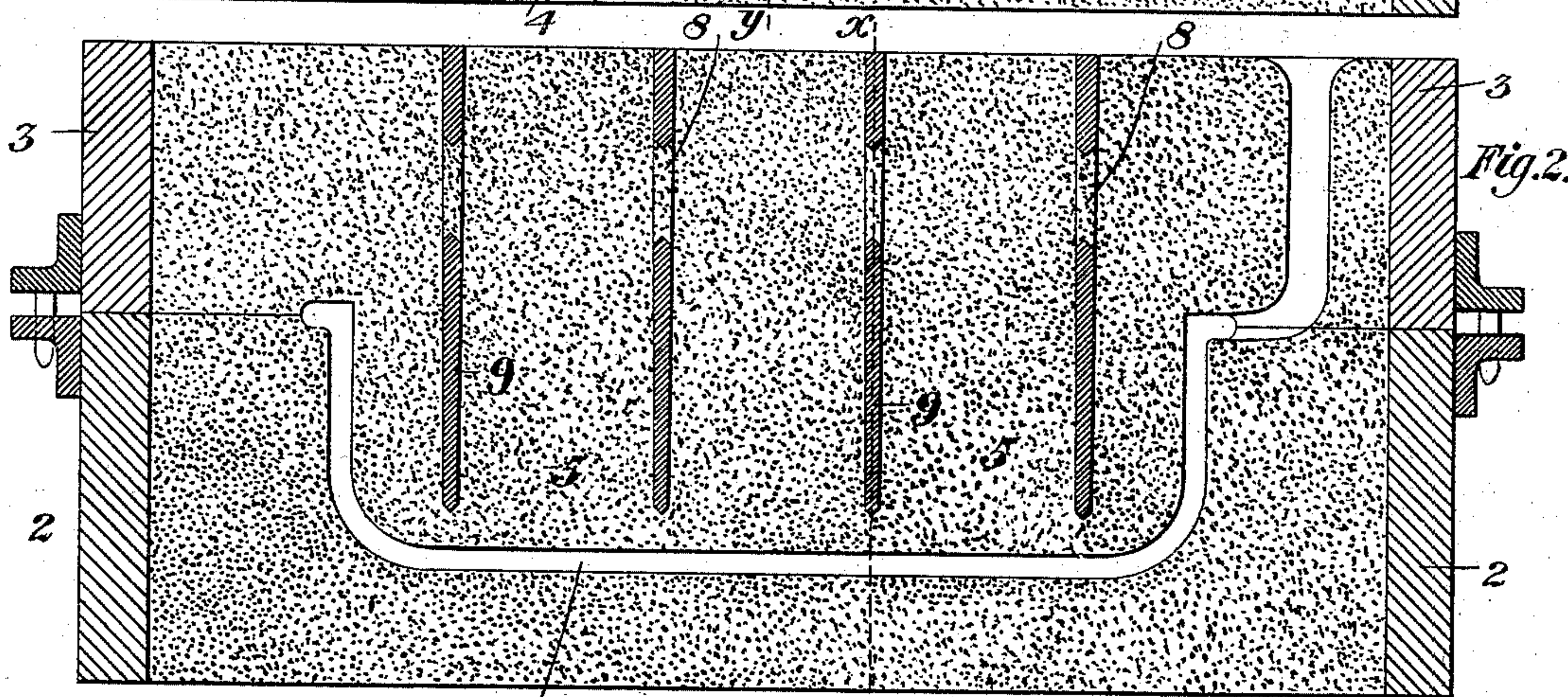


Fig. 2.

Fig. 4

Fig. 5. x

Fig. 3.

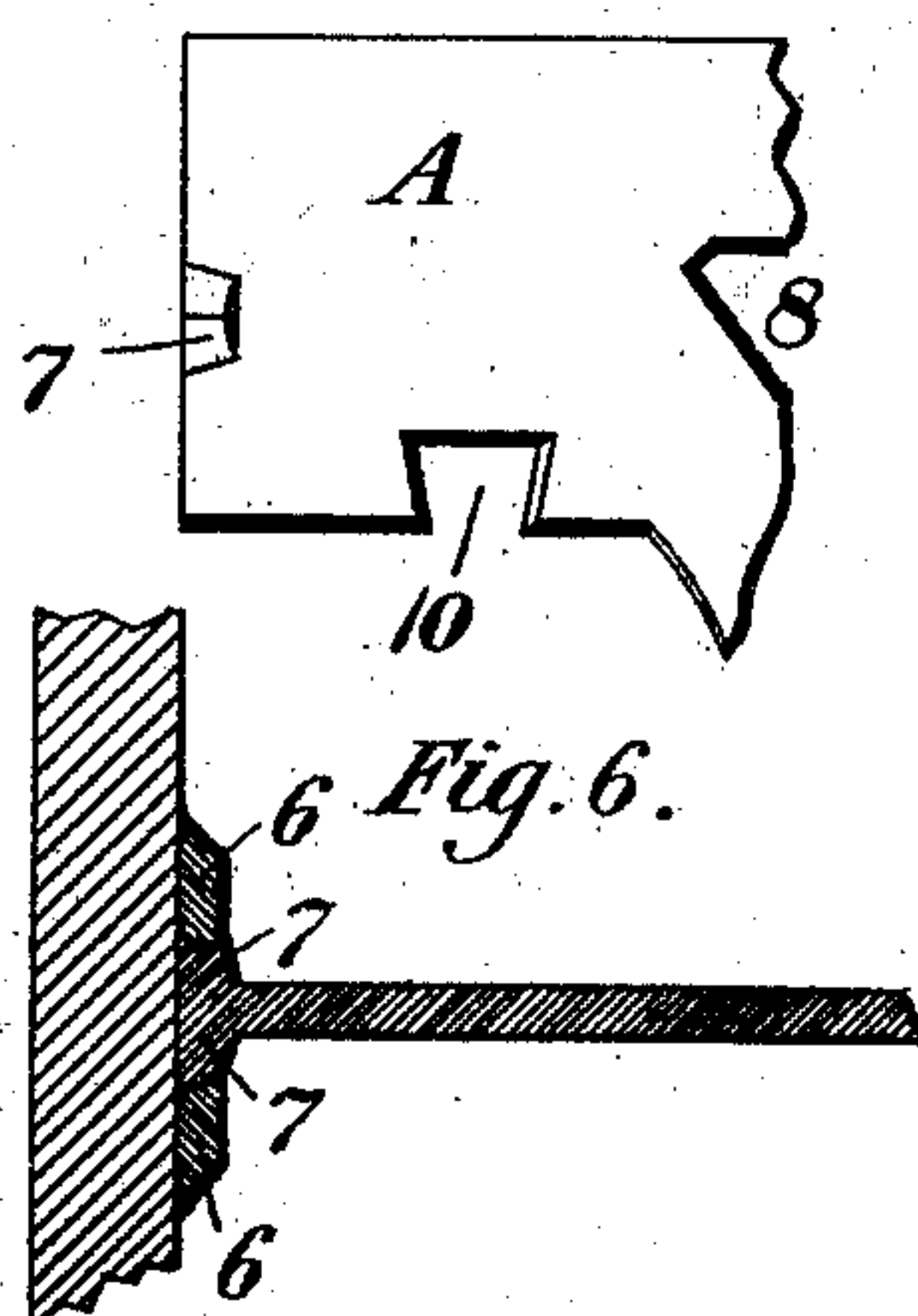
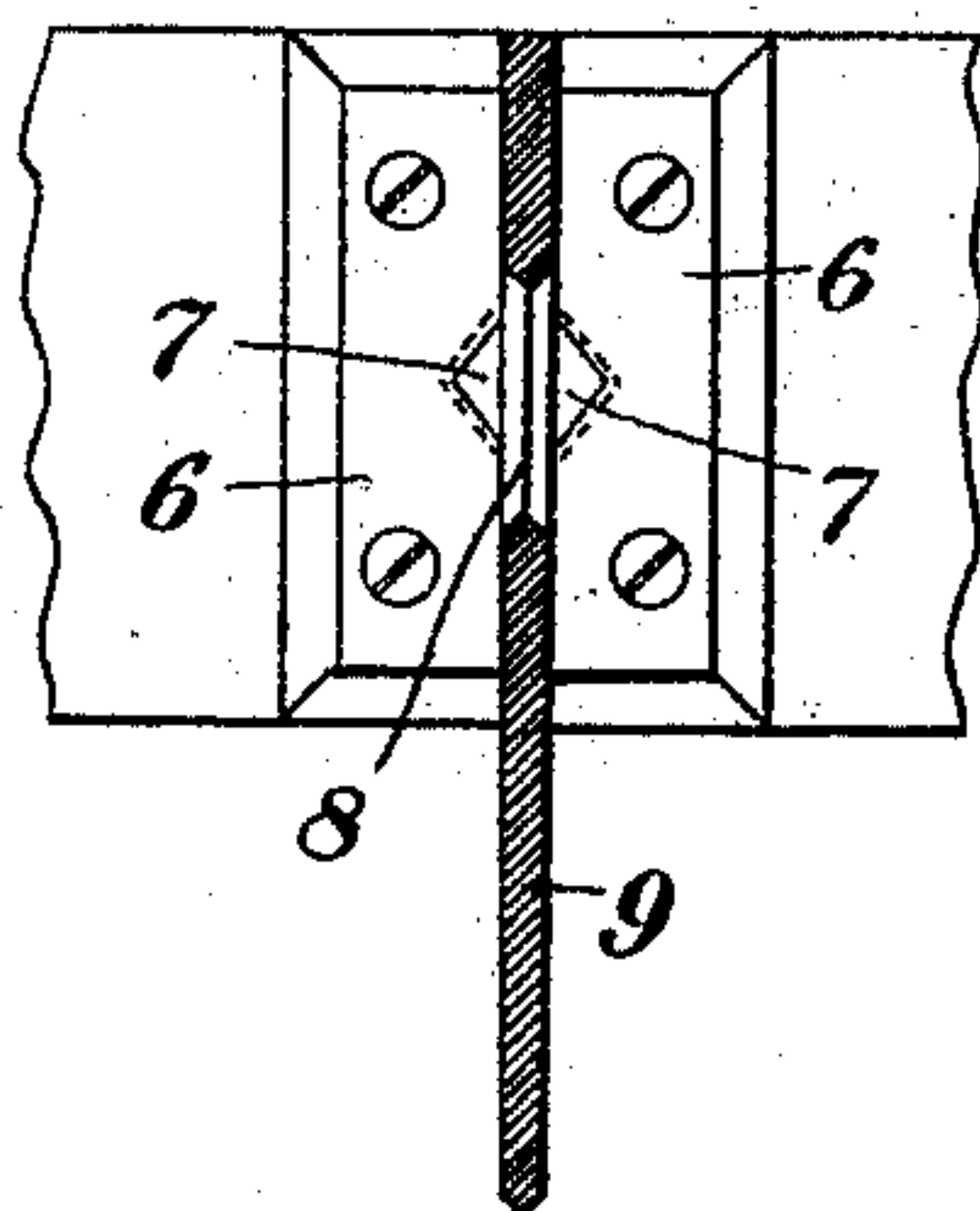
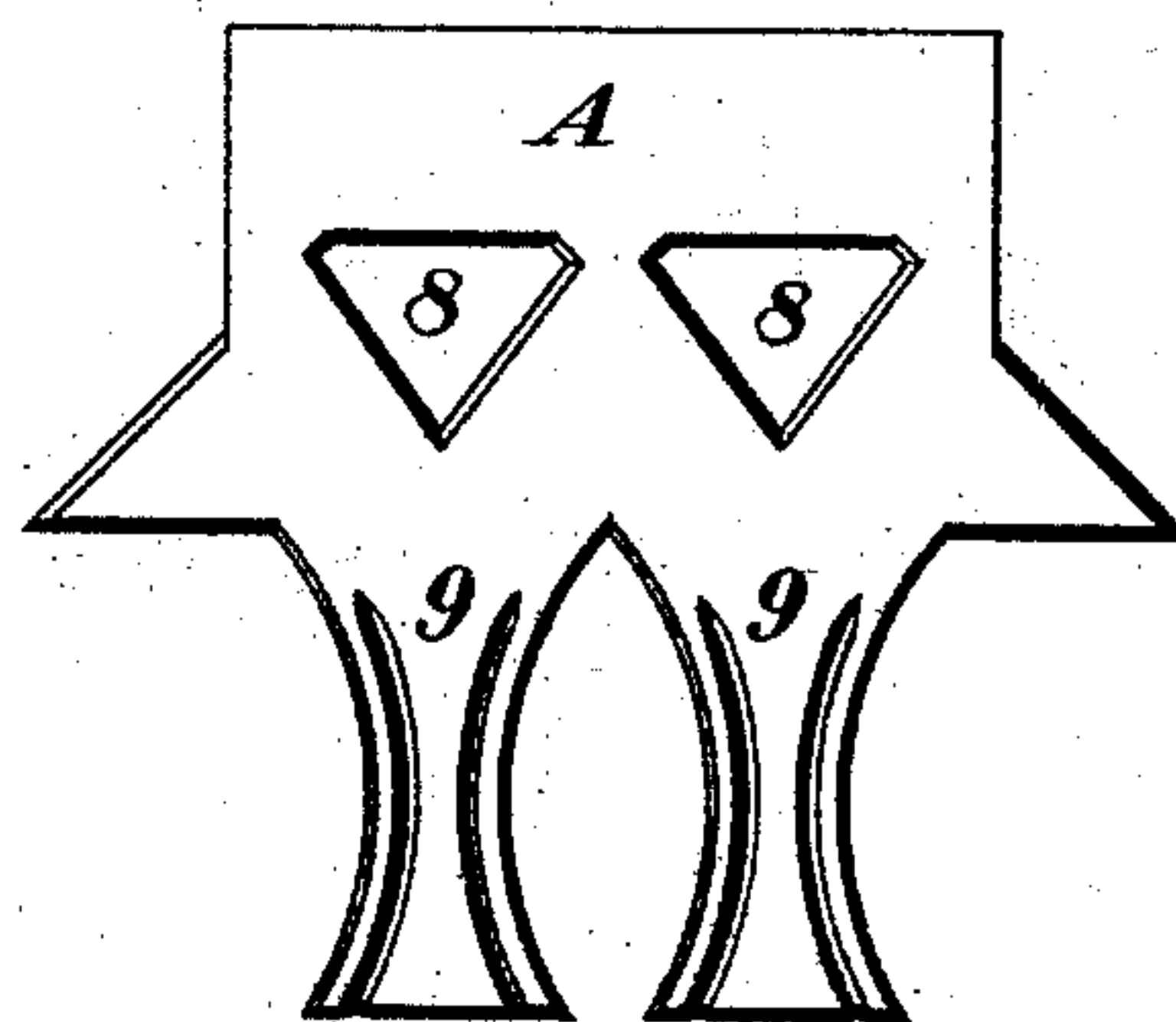


Fig. 6.



WITNESSES

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RETAINING-BAR FOR MOLDING-FLASKS.

SPECIFICATION forming part of Letters Patent No. 505,155, dated September 19, 1893.

Application filed June 5, 1893. Serial No. 476,554. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. BRADBERRY, a citizen of the United States, residing at Sharpsburg, in the county of Allegheny and State of Pennsylvania, have invented or discovered a new and useful Improvement in Retaining-Bars for Molding-Flasks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a longitudinal vertical section through a molding flask, illustrating my improved device in position, the section being on the line *x. x.* of Fig. 2. Fig. 2 is a similar view, at right angles to Fig. 1, the section being on the line *y. y.* thereof. Fig. 3 is a detail view illustrating a modified form of the retaining bar. Figs. 4, 5, and 6 are detail views showing the manner of attaching the bar to the flask.

Like numerals refer to like parts wherever used throughout this specification.

In the operation of molding in sand it is necessary to retain the sand in the cope part of the mold and heretofore this has been accomplished by the use of sticks of wood frequently studded with nails introduced throughout the sand, or L shaped bars of iron depending from the upper part of the flask, and by reason of their lack of rigidity, and general inconvenience such devices have been found to accomplish the desired result in an imperfect and unsatisfactory manner. The object of my invention is to overcome these difficulties, and it consists in an improved construction of retaining bar having the advantages of simplicity, economy, ease of handling and the highest efficiency for the purpose desired, presenting great frictional contact to the sand, and thus resulting in an increased retaining power. By reason of the edges of the bar being thin and tapering at all its parts, the ramming of the sand by the molder is greatly facilitated and the danger of air pockets or loose sand is entirely obviated.

Referring to the drawings 2 is the drag part of a mold and 3 is the cope. As shown, the form of casting to be made in the cavity

4 is one to which my improved bar is peculiarly applicable, as the large body of sand 5 projecting downwardly from the cope will require a very positive and rigid support, which must necessarily exist in its body, it being impossible to support it from the outside. The bar is rigidly and permanently secured to the flask by means of the plates 6 which are screwed or otherwise attached to the inner face of the flask embracing the wedge shaped lugs 7 formed integral with the bar, thereby effectually preventing its displacement. For the purposes of my invention it is preferable that the lower edge of the bar should conform as nearly as practicable to the lower face of the mold, and it will be understood that in the manufacture of large numbers of castings from the same pattern, special bars will be used. The bar consists of a thin plate of metal A having a series of openings 8 through its body portion, and provided with downwardly projecting arms 9 and recesses 10 the object of which is to present frictional faces to the sand, tending to retard its movement. The arms 9 are preferably made narrow at their central portion and at the bottom are flared out to give support to the sand, while the recesses 10 and the openings 8 are wider at the top than the bottom for the same purpose.

In order to further increase the holding power of the bar I prefer to form grooves 11 curved in conformity with the edges of the arms 9 and V shaped in cross section, thereby facilitating the packing of the sand by the molder, increasing its holding power, and permitting of easy cleaning of the flask after the operation of casting. When the sand is compressed around the bar by the fingers of the molder in the operation of filling and packing the mold, it is obvious that a V shaped groove will be more readily and easily filled than a groove of other shape in cross section, such as square or round, and I therefore prefer such form. It will be seen that all of the edges of any parts of the bar which are exposed to the sand are also V shaped, for a like reason, and this feature is an important one to the successful operation of my invention. It is not necessary that the bar shall be

secured to the flask and it may be simply inserted in the body of sand by the molder, retaining its position and serving to unite and withhold the sand after being fixed by the operation of ramming.

In Fig. 3 I have shown a modified form which may be used in this manner, and it is obvious that I may vary the size at pleasure to suit the requirements of the flask. Any number may also be used and their position in the flask be regulated by circumstances.

The operation of my device is obvious and its advantages will be appreciated by those skilled in the art to which it pertains.

I am aware that it is not new to insert retaining bars or other obstacles in the sand of a molding flask to sustain the sand, but my bar possesses advantages not heretofore obtained by any now in use, and such advantages I desire to protect by Letters Patent.

Having described my invention, what I claim is—

1. A retaining bar for a molding flask consisting of a metal plate provided with one or more downwardly projecting arms, narrow at

their middle portions and wider at their terminations, for the purposes described.

2. A retaining bar for a molding flask consisting of a metal plate provided with one or more downwardly projecting arms, narrow at their middle portions and wider at their terminations, and having in the body of the bar openings and recesses for the purposes described.

3. A retaining bar for a molding flask consisting of a metal plate provided with one or more downwardly projecting arms narrow at their middle portions and wider at their terminations, and having in the body of the bar openings and recesses, the edges of all such arms, openings and recesses being V shaped in cross section, and grooves preferably curved formed in the face of the arms, substantially as shown.

In testimony whereof I have hereunto set my hand this 25th day of May, 1893.

THOMAS J. BRADBERRY.

Witnesses:

F. K. MCCANCE,
C. M. CLARKE.