

No. 770,281.

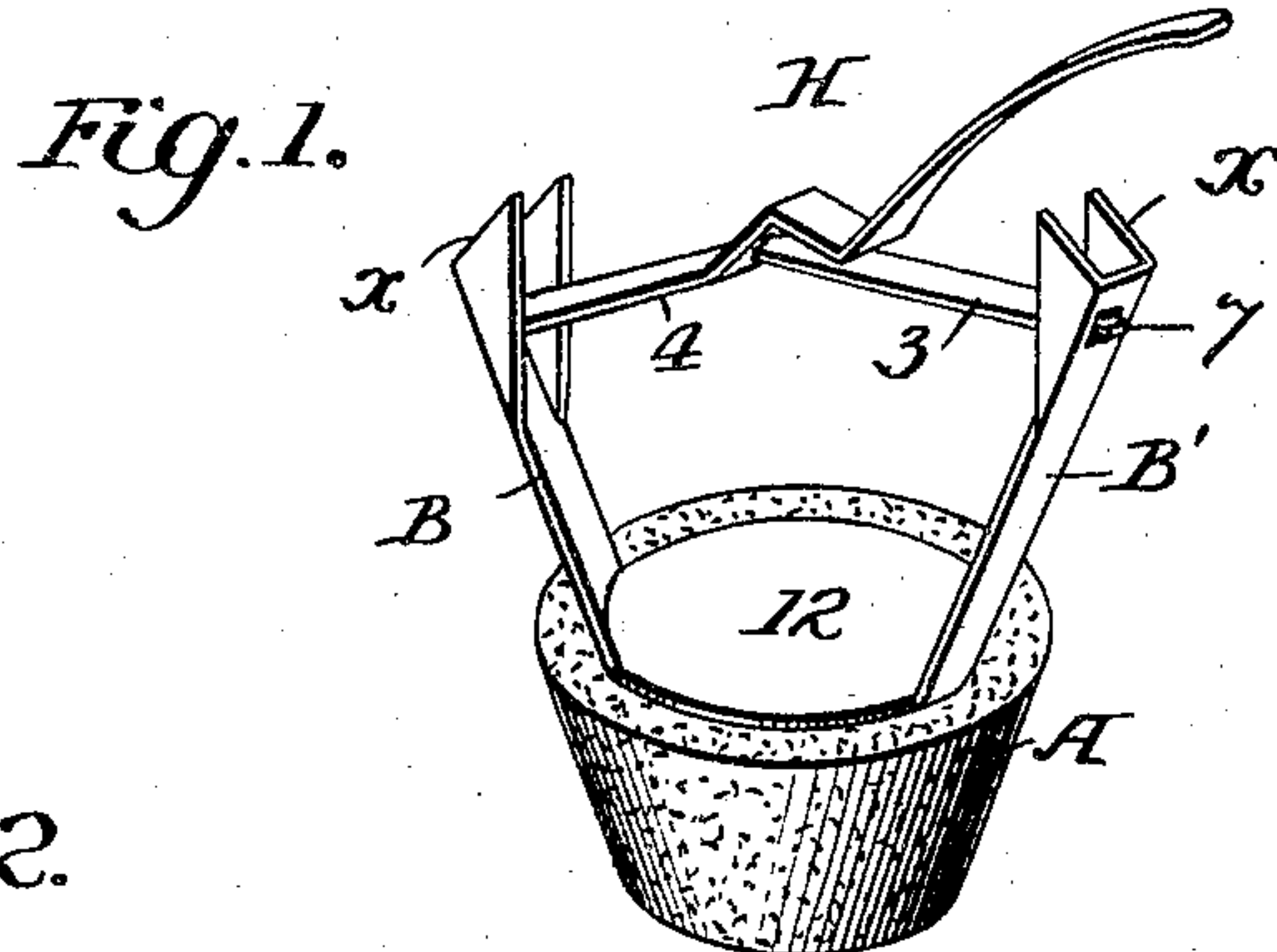
PATENTED SEPT. 20, 1904.

W. R. GREEN.  
STOPPERING DEVICE.

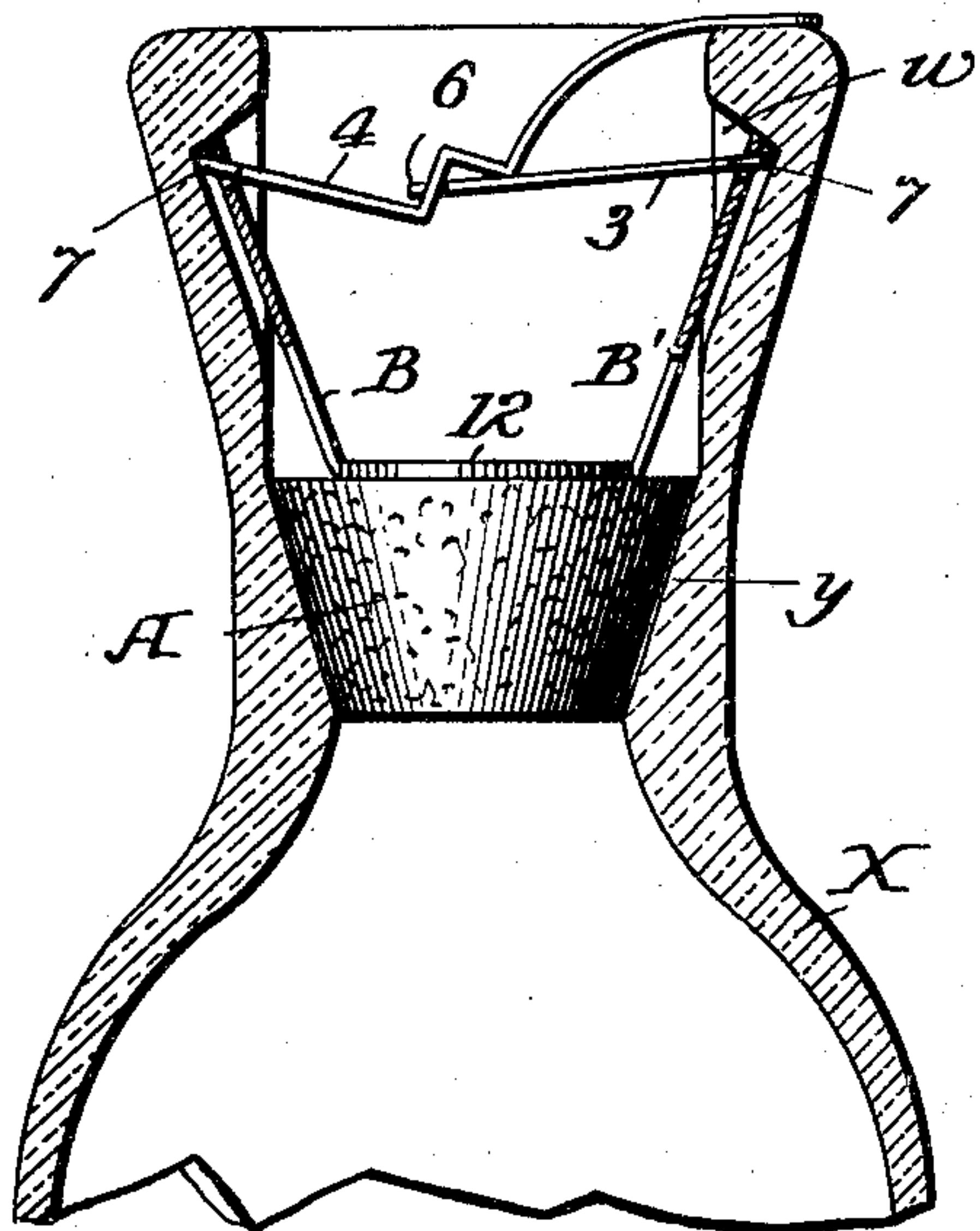
APPLICATION FILED FEB. 26, 1903.

NO MODEL.

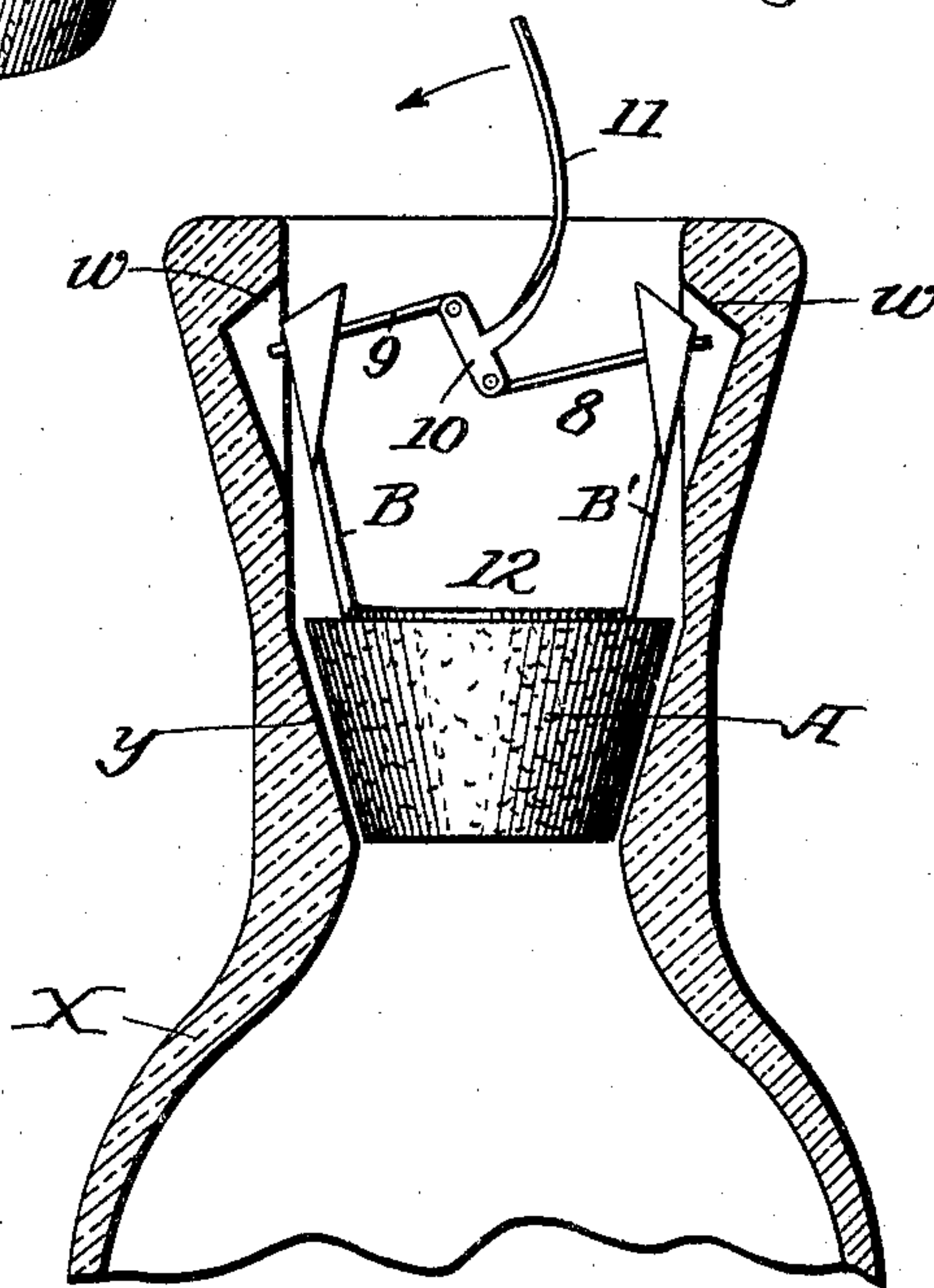
2 SHEETS—SHEET 1.



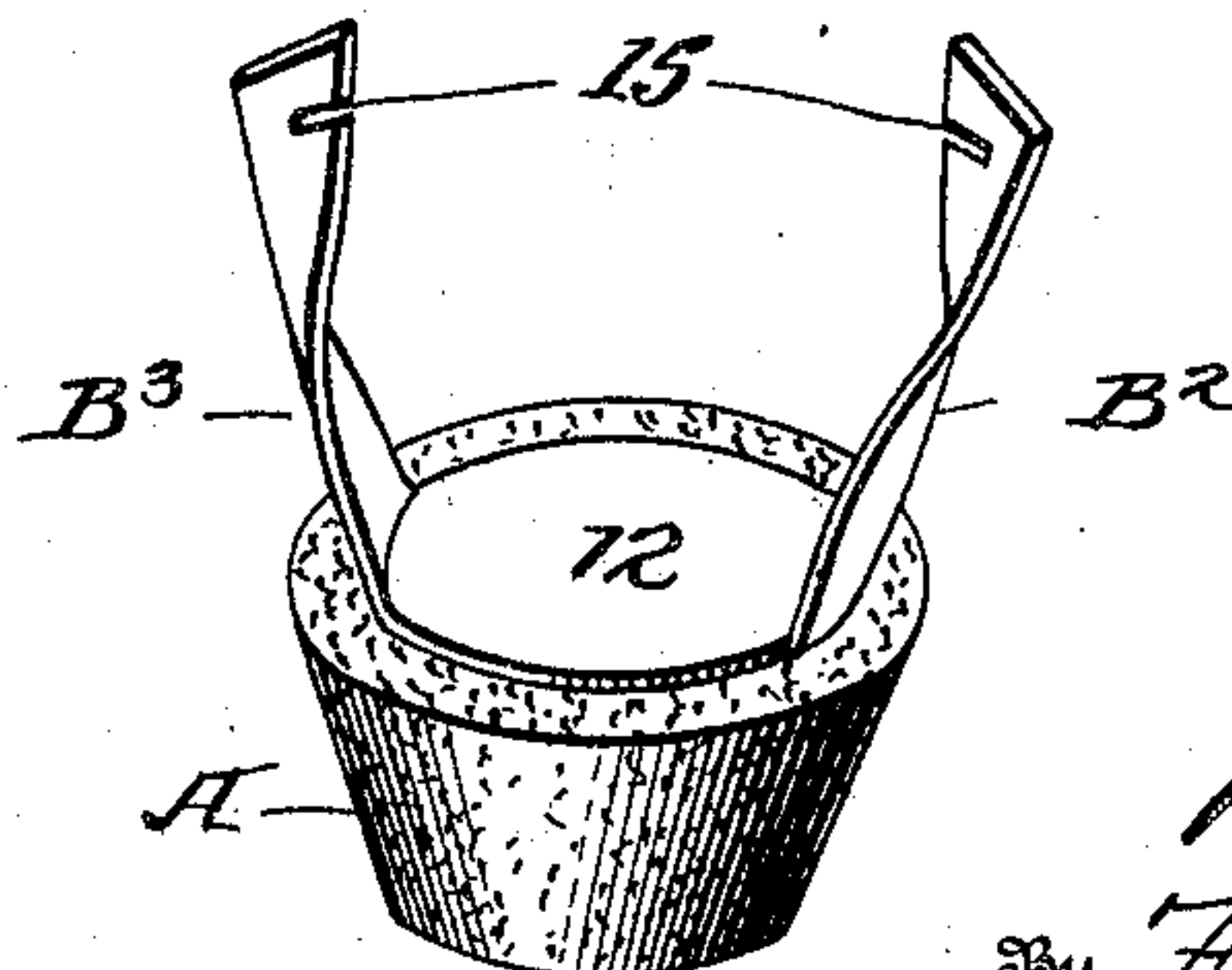
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



Witnesses

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2 SHEETS—SHEET 2.

Fig. 5.

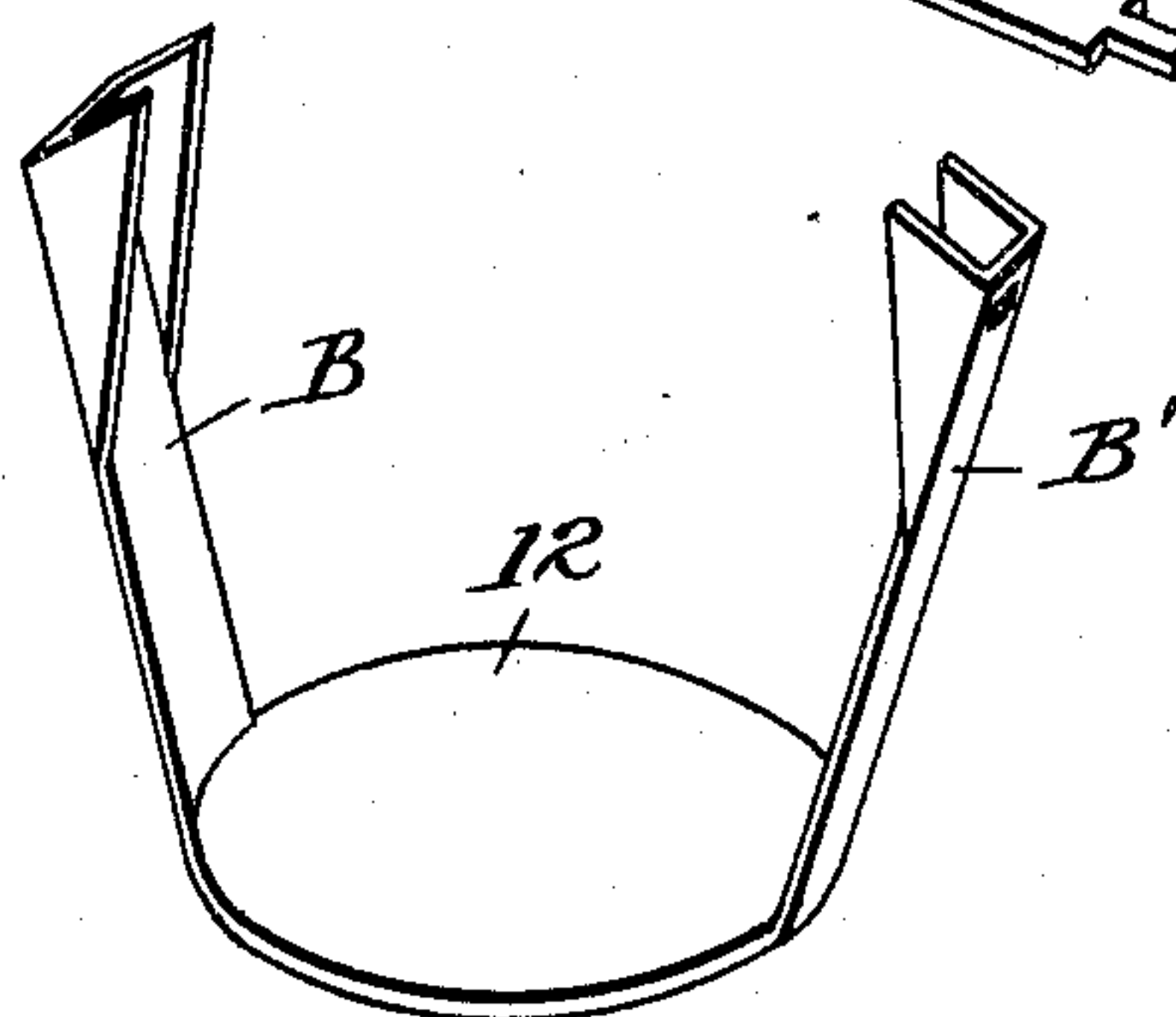
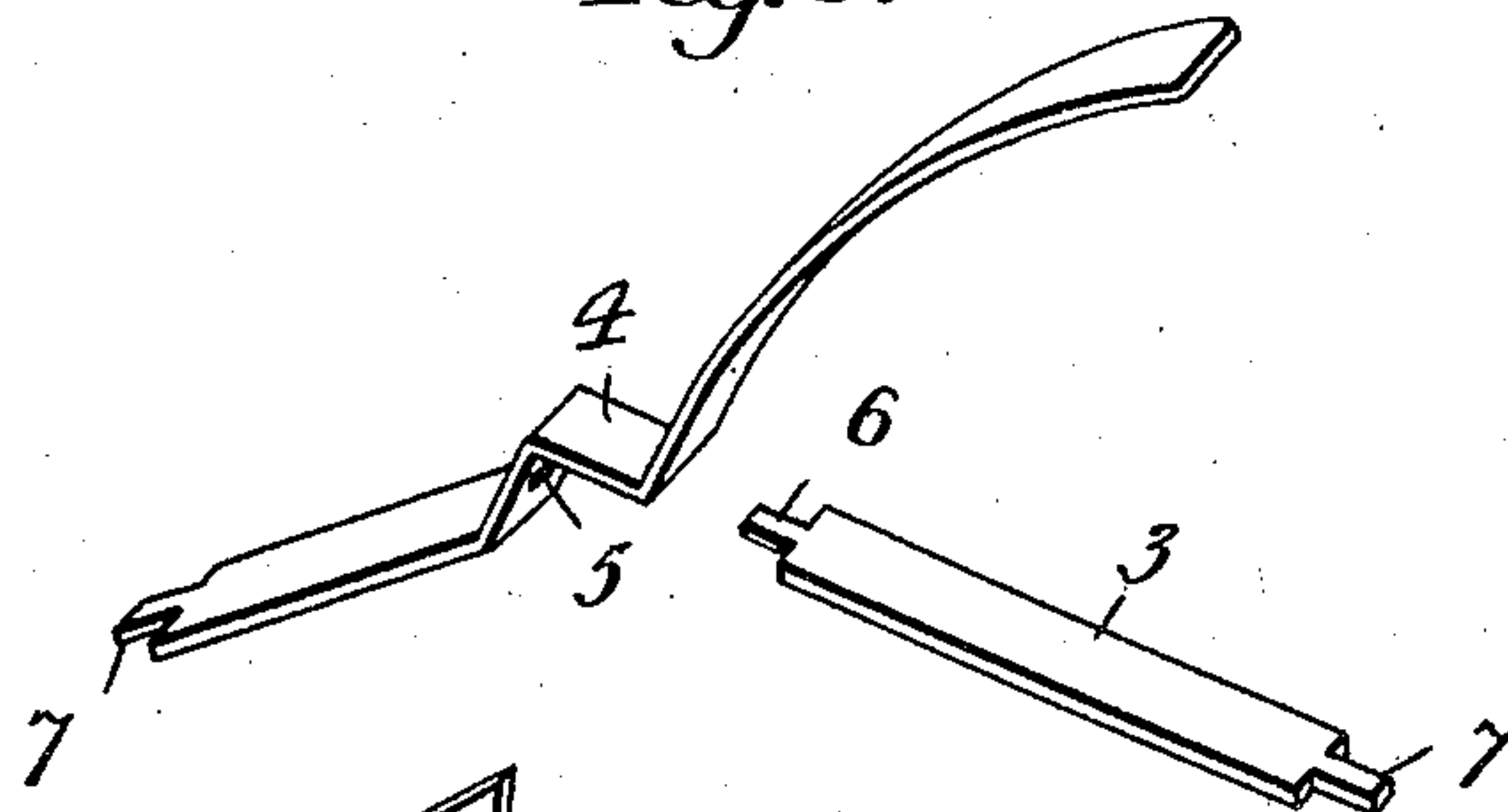


Fig. 6.

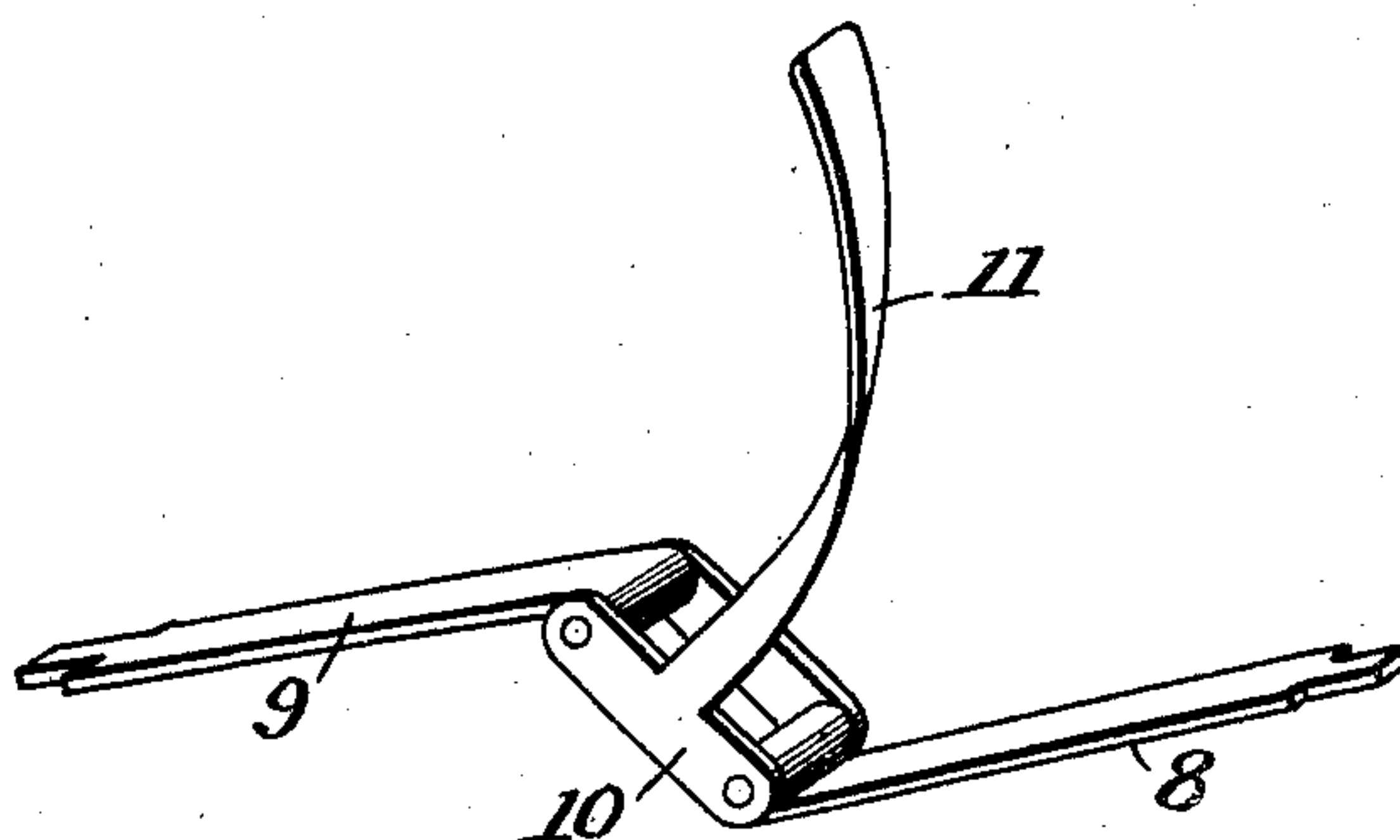
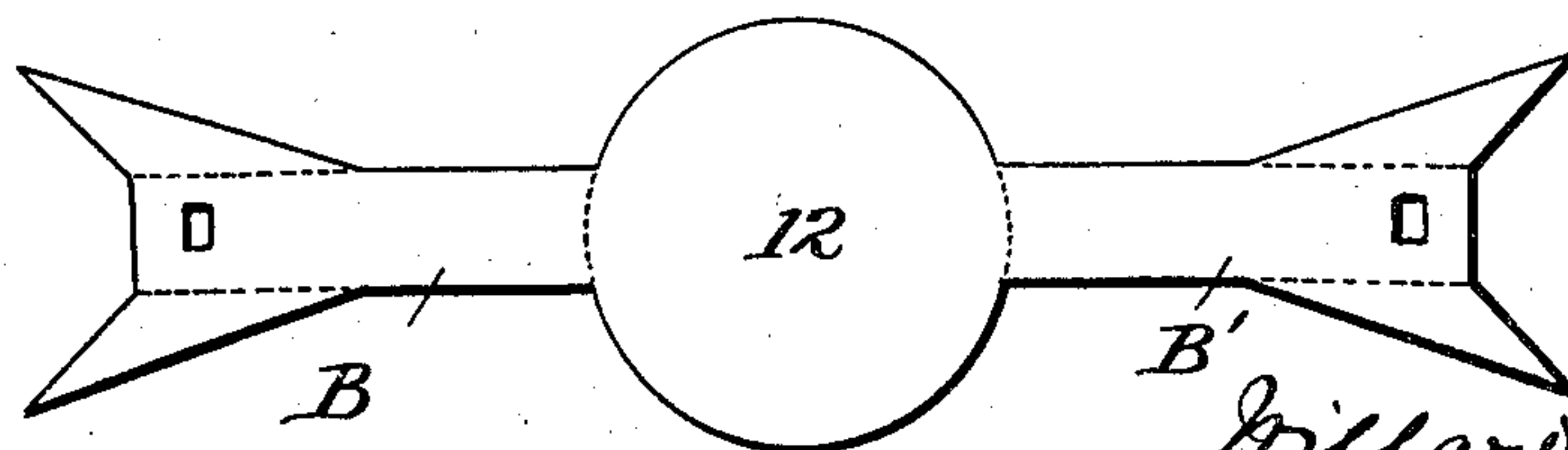


Fig. 7.



Witnesses

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## UNITED STATES PATENT OFFICE.

WILLARD R. GREEN, OF DENVER, COLORADO.

## STOPPERING DEVICE.

SPECIFICATION forming part of Letters Patent No. 770,281, dated September 20, 1904.

Application filed February 26, 1903. Serial No. 145,253. (No model.)

*To all whom it may concern:*

Be it known that I, WILLARD R. GREEN, a citizen of the United States, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Stoppering Devices, of which the following is a specification.

My invention relates to certain improvements in devices for sealing or stoppering bottles and other vessels; and among the objects to be attained thereby is the provision of an effective sealing device of cheap cost and simple construction and one that is complete within itself and positive through the action of its own parts and being adapted to be so located within the neck of the bottle as to be protected from outside interference or accidental dislodgment and at the same time to be readily accessible for easy removal.

My invention, broadly stated, consists in a sealing device that is complete within itself and comprises a sealing member—that is, a part which acts directly as the seal or closure—and a sealing and retaining member—that is, a member of the sealing device itself which acts to forcibly seat the sealing member and retain it in its seated condition under pressure—and a toggle for operating the sealing member.

Referring to the accompanying drawings, Figure 1 is a perspective view of a sealing device embodying my invention. Fig. 2 is a sectional representation of the neck of the bottle with my sealing device secured thereto. Fig. 3 is a similar view showing a modification. Fig. 4 is a perspective view showing a further modification. Fig. 5 is a view of the retaining devices shown in Figs. 1 and 2 separated from each other and on enlarged scale. Fig. 6 is an enlarged perspective view of the separator or toggle shown in Fig. 3. Fig. 7 is a plan view of the retaining device.

In the drawings, A represents what I have defined as the “sealing member” of a sealing device and which, as shown, consists of a portion of the sealing device in the general form of a disk 12 and which may be faced with cork or other suitable packing material which is preferably elastic in its nature and capable of compression and forming a tight joint with its support. It is, broadly speaking, a valve

which is adapted to fit closely upon its valve-seat, and its peculiar construction or shape will depend upon the opening to be sealed.

Connected to the sealing member is the retaining member, and this may be variously constructed under the terms of my broad invention, and it may be integral with the sealing member or formed with one or more segregated parts preferably connected together. Thus in Fig. 1 the seating and retaining member comprises the parts B B', which are shown as arms or extensions of the sealing member A. These arms are bent to form bearing portions with inclined end bearings  $\alpha$ , which when forcibly separated and retained in place may act as wedges in seating the sealing member and as bearing-points in retaining the sealing member in position. These arms are combined with a separator H, consisting of parts which form a sort of toggle-lever or toggle-joint connection, and in Fig. 1 there are two members, a straight member 3 and a bent member 4, with a recess to receive a lip 6 of the member 3 and a lip 7 at the end of each member entering a recess in the adjacent arm B or B'. The bent part of the member 4 serves as a stop to prevent further swing of that member when the toggle is extended.

In the form illustrated in Figs. 3 and 6 the toggle consists of three members 8, 9, and 10, the latter with a handle 11. The members 8 and 9 are hinged at their inner ends to the member 10.

In Figs. 2 and 3 I have shown how the sealing device can be applied to a bottle X, in the neck of which there is shown a seat  $\gamma$ , which is adapted to receive the sealing member of the sealing device, and of course the sealing member must be of a form to correspond to the opening in the neck which is to be closed by the sealing member. The other portion of the neck of the bottle is provided with a bearing-surface  $w$ , preferably annular, and this may be variously shaped and formed, but must furnish an inclined abutment or bearing-surface for the wedging action of the beveled retaining members B B', and of course these surfaces cooperate with this retaining member when the setting member is operated to seat or set the sealing device in position. It



is obvious that there must be an opening in the neck above the bearing-surfaces *y*, through which the sealing device can be introduced, and when introduced the toggle brings the sealing member into contact with the surface *y*, and the inclined bearings forced outward act as wedges to forcibly seat the sealing member under pressure, and when the toggle is in its final condition they act to retain the sealing member in its seat. This condition is illustrated in Fig. 2, and it will be seen that the extension or handle of the toggle can extend to the top of the bottle and rest flat on the edge of the opening therein; but preferably it is bent to rest on the member 3 and so as not to project beyond the bottle, thus preventing liability of displacement. It will be seen that by raising the handle of the toggle the sealing device is released, and it can be readily removed from the neck of the bottle and is then in condition to be applied to the same or another bottle.

In Fig. 4 the arms  $B^2$  and  $B^3$ , which extend upwardly from the disk 12, are twisted, and their opposing edges are each provided with a notch 15. In connection with this form either form of toggle-spreader may be used, and the outer ends of the members 3 and 4 or 8 and 9, as the case may be, will be engaged in the notches 15.

Without limiting myself to the precise construction shown, I claim—

1. A sealing device for bottles consisting of a sealing member, retaining members consisting of arms extending upward from the sealing member and comprising inclined end bearings and a toggle for forcibly separating and holding the retaining members in position, substantially as set forth.

2. A sealing device for bottles consisting of a sealing member comprising a disk 12 supporting a packing and arms with inclined end bearings connected with the disk, and a toggle for forcibly separating and retaining said arms in position, substantially as set forth.

3. A sealing device for bottles consisting of a sealing member, adapted to close the bottle, retaining members consisting of arms having inclined end bearings and a toggle consisting of members jointed at their inner ends and provided with a handle, and jointed at their outer ends to the retaining members, substantially as set forth.

4. The combination with a bottle having a seat and beveled faces above the seat, of a sealing device having a sealing member adapted to said seat, retaining members with inclined bearings adapted to said beveled faces, and a toggle for forcibly separating and holding said retaining member, substantially as set forth.

5. The combination with a bottle having a seat and beveled faces above the seat, of a sealing device having a sealing member adapted to said seat, retaining members with inclined end bearings adapted to said beveled faces, and a toggle for forcibly separating and holding said retaining member, the neck of the bottle extending above the beveled faces, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLARD R. GREEN.

Witnesses:

JOS. M. MALAMENT,  
M. BERLER.