

No. 721,494.

PATENTED FEB. 24, 1903.

H. W. AVERY.
NON-REFILLABLE RECEPTACLE.

APPLICATION FILED MAR. 6, 1901.

NO MODEL.

Fig. 1,

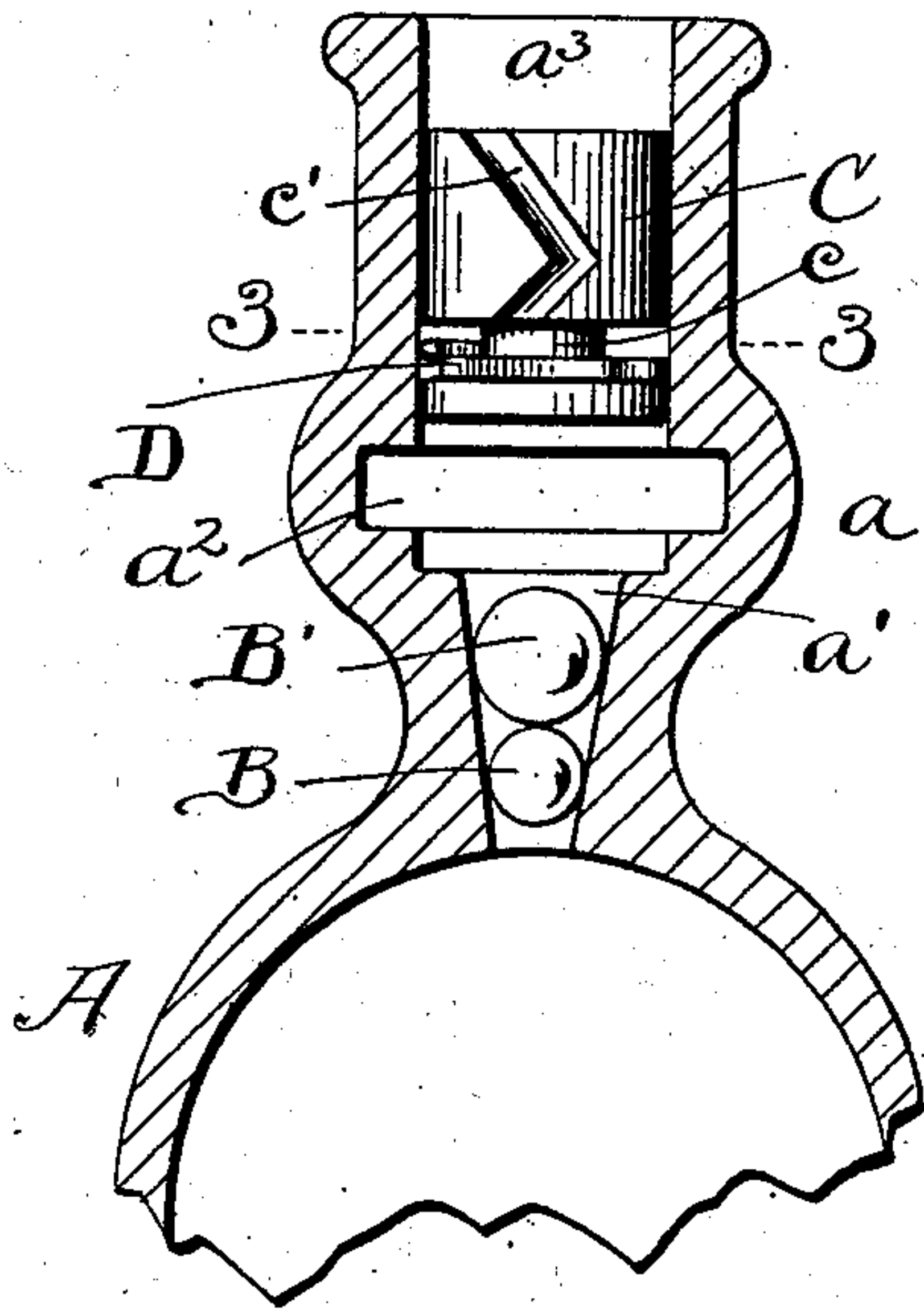


Fig. 2,

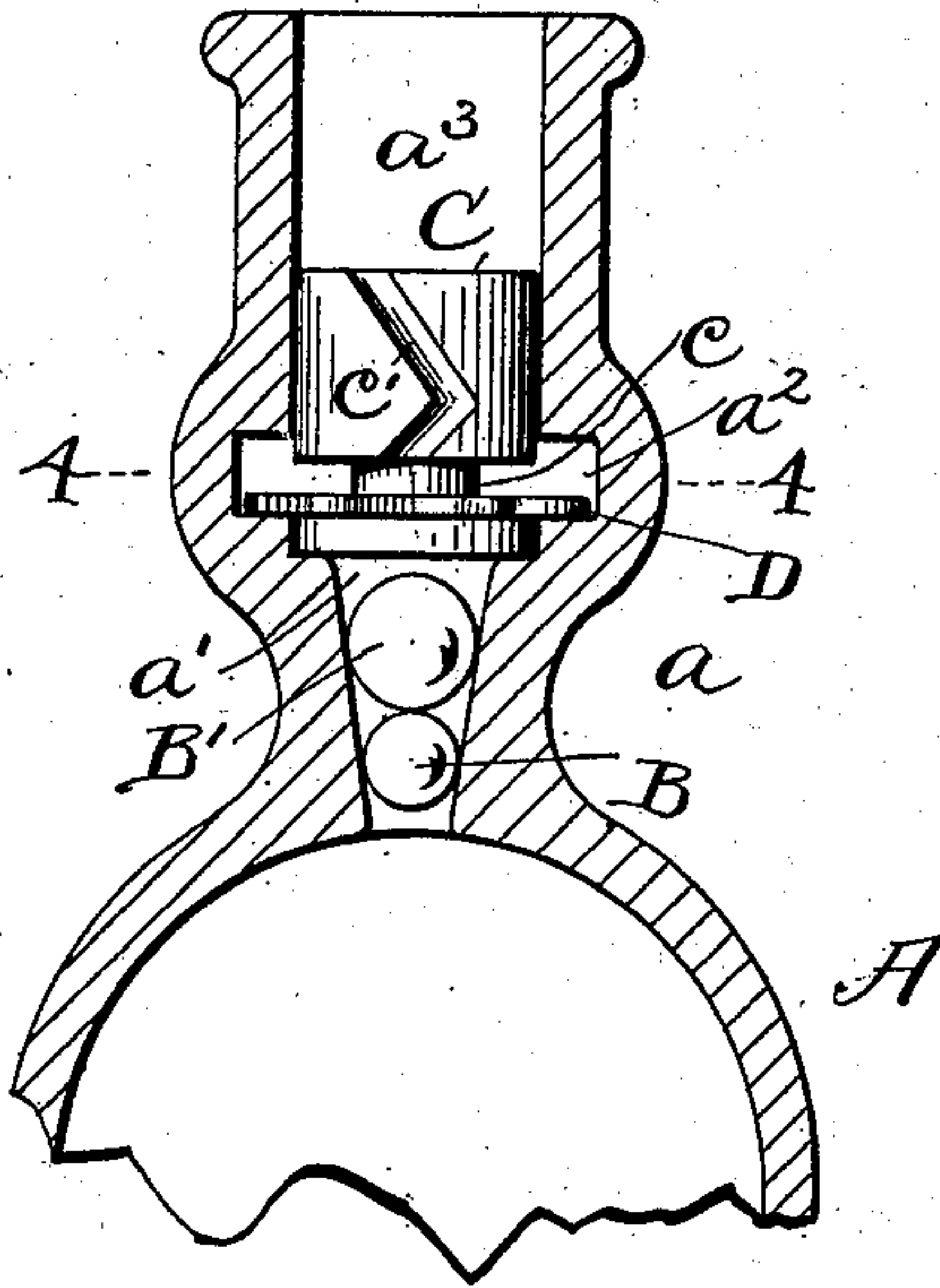


Fig. 3,

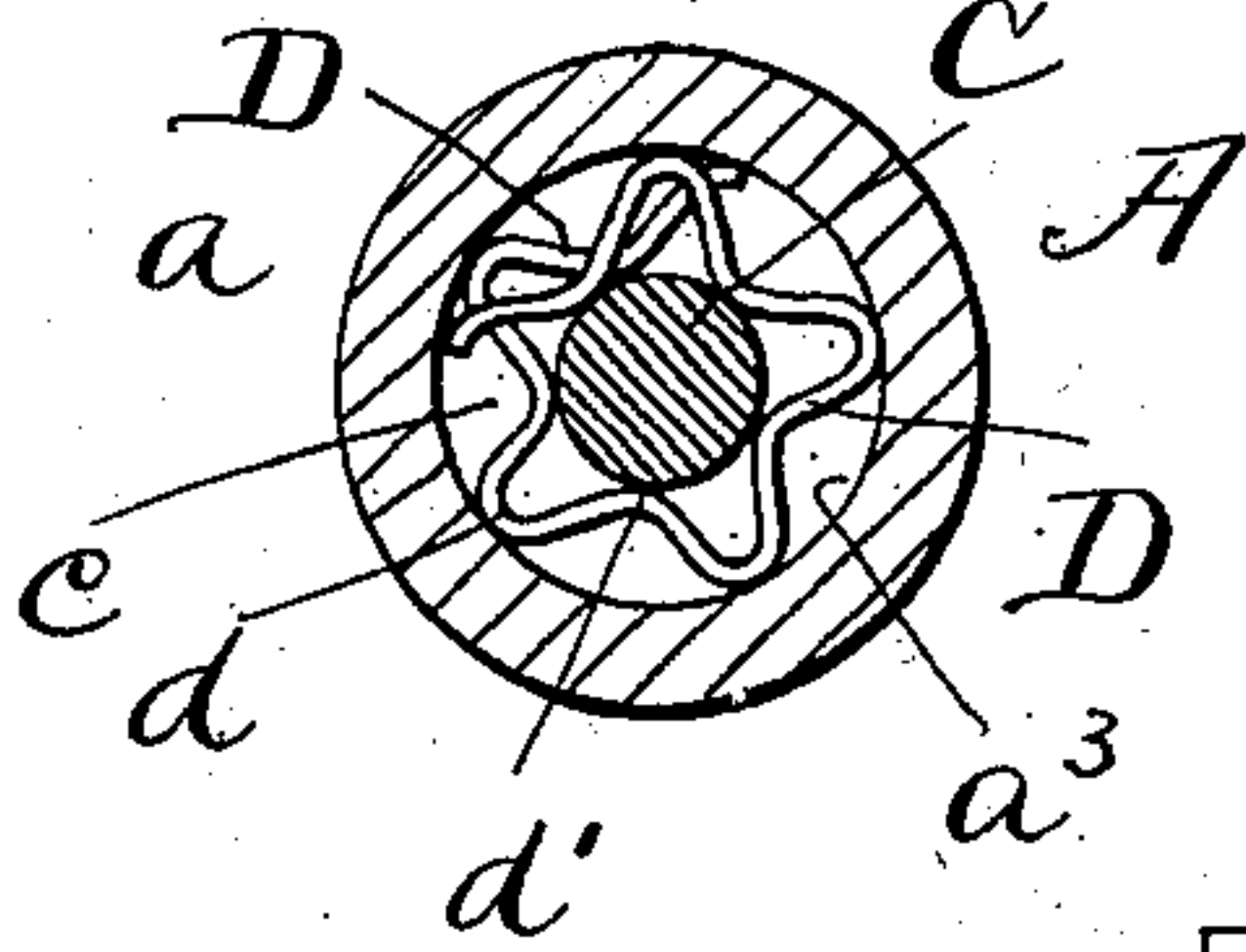


Fig. 4,

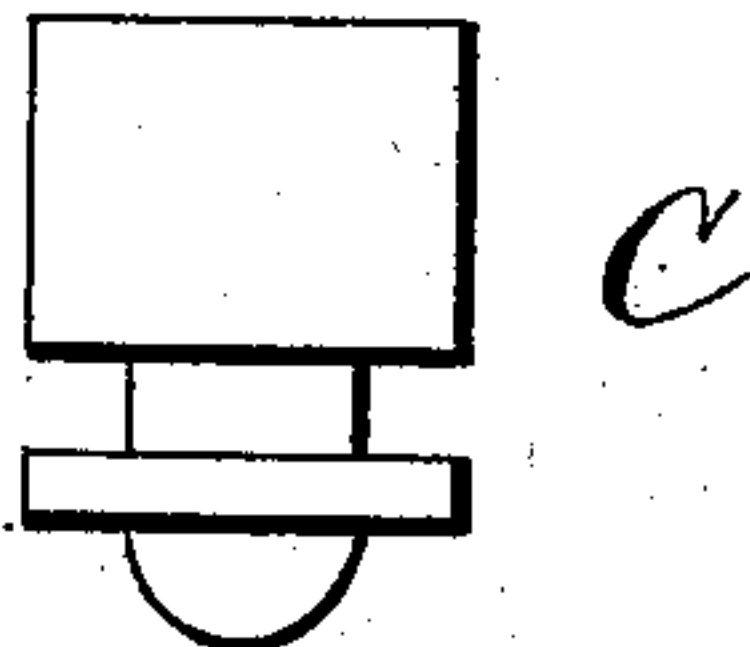
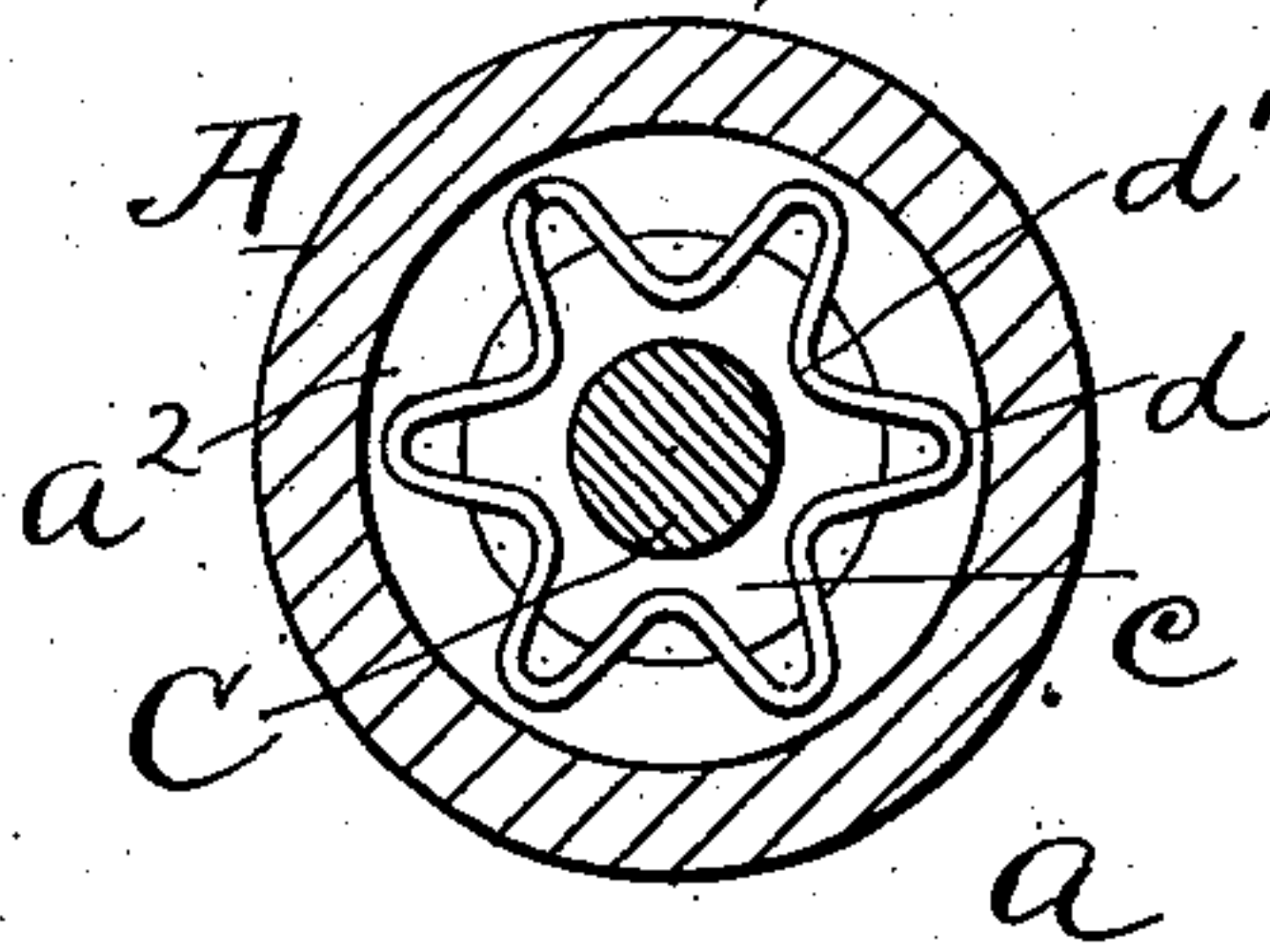


Fig. 5,

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UNITED STATES PATENT OFFICE.

HENRY W. AVERY, OF CLEVELAND, OHIO.

NON-REFILLABLE RECEPTACLE.

SPECIFICATION forming part of Letters Patent No. 721,494, dated February 24, 1903.

Application filed March 6, 1901. Serial No. 50,007. (No model.)

To all whom it may concern:

Be it known that I, HENRY W. AVERY, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Non-Refillable Receptacles, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

This invention relates to improvements in so-called "non-refillable bottles"—that is to say, bottles or analogous receptacles which after having once been emptied cannot be refilled. Such devices as heretofore constructed have frequently inclosed suitable valves or analogous devices which permit the contents to be emptied from said receptacle, but will not permit other liquid to be put into it. Various forms of baffles have also been employed to hold these valves in operative position.

The present invention has for its object to provide a baffle and means which prevent its removal after once inserted into the bottle.

The invention consists of a baffle-plug having an external circumferential groove combined with a compressible spring-ring which when in its normal condition lies partly within and partly outside of said groove, but which is capable of being compressed, so as to lie wholly within said groove; and it also consists in the combination of said baffle-plug and ring with a receptacle in whose neck is an annular enlargement into which said retaining-ring is adapted to project when the ring is in its normal condition.

In the drawings, Figure 1 is central vertical section through the neck of a bottle, showing the baffle-plug therein, but before it reaches the part wherein it will be held. Fig. 2 is a similar view showing the baffle-plug in place. Fig. 3 is a horizontal sectional view on line 3 3 of Fig. 1, and Fig. 4 is a horizontal sectional view on line 4 4 of Fig. 2. Fig. 5 is a side elevation of a modified form of baffle-plug.

Referring to the parts by letters, A represents any receptacle, here shown in the form of a bottle. The neck a of this bottle has in its lower end a seat a' for the valve. Its upper end forms a cork-receiving portion a^s , and between these two parts there is an annular

enlargement or recess a^2 , into which the baffling may project. The valve-seat a' , as shown, is a conical recess which contains a light ball B and above it a heavy ball B'. The upper end of this conical recess is of smaller area than the cork-opening a^s . Therefore the baffle-plug C may be inserted through the cork-opening, but may not pass into said conical hole, but will seat itself over the same.

The baffle-plug C may be made of porcelain, glass, or any desired material. Its exterior is slightly smaller than the interior of the cork-opening a^s , wherefore it may be easily passed through this part of the neck. This plug is provided near its lower end with an external circumferential groove c . It is also provided with openings c' , leading from its top down to said groove, which openings are preferably crooked. These openings may pass through the plug or may be in the form of grooves in its sides.

D represents the retaining-ring. It is preferably a split ring with overlapping ends and made of spring-wire bent into approximately star shape. When in its normal condition, the points d of said ring extend beyond the periphery of the plug, while the inner parts d' thereof lie in said groove c . It is possible, however, to contract or compress this ring so that its external diameter shall be no greater than the external diameter of the plug, wherefore said ring may lie wholly in the groove in the plug. This condition of the ring is shown in Fig. 4. This specific construction of the ring is not essential to the generic invention and any other form of spring-ring which normally is of such shape and size that it will lie partly within and partly outside of said groove, but which may be compressed so as to lie wholly in the groove, may be substituted for the ring shown.

In assembling the parts the valve-balls are first inserted. Then the ring D is placed in the groove c in the baffle-plug and compressed, as shown in Fig. 3, and then the plug carrying the ring, as shown, is inserted into the neck of the bottle and pressed downward. When said groove c comes into the plane of the enlargement or recess a^2 in the neck of the bottle, said ring expands to its normal condition and thereafter prevents the removal

of the baffle-plug, although it permits a slight longitudinal movement of the plug, which is limited by the engagement of the ring with the upper end of the recess in the neck and
5 by the engagement of said ring with the lower edge of said recess or by the engagement of the lower end of the plug with the part of the neck immediately below it.

In Fig. 5 a plug C is shown in which the
10 lower end of the plug is made in the form approximately of a hemisphere and is adapted to fit the upper end of the hole a^3 of the neck of the bottle and to serve as a valve, which will prevent any fluid from being introduced
15 through the neck into the bottle when the bottle is upright. This last construction while cheaper than the ball-valves shown in Figs. 1 and 2 is not believed to be as efficient.

Having described my invention, I claim—
20 1. In a non-refillable receptacle, a neck having an enlarged portion and an internal annular recess and a contracted valve portion leaving an annular seat between its upper end and the annular recess, combined with a
25 plug adapted to rest on said seat and having

an external groove opposite said internal annular recess in this position of the plug, an offset groove on the outside of the plug leading from the upper end to its annular groove, a spring located in the annular groove of the
30 plug and adapted to engage in the annular recess in the neck of the bottle, and a suitable valve occupying the contracted valve portion of the neck, substantially as described.

2. In a non-refillable bottle, the combination with a neck having an internal annular
35 recess, and another internal annular recess adjacent thereto, a plug for the mouth of said bottle having an annular groove, and a zigzag groove on the outside thereof, a spring in
40 said annular groove adapted to operate in said recess, a tapering valve-seat, and a suitable valve, substantially as described.

In testimony whereof I hereunto affix my
signature in the presence of two witnesses. 45

HENRY W. AVERY.

Witnesses:

E. L. THURSTON,
E. B. GILCHRIST.