

(No Model.)

2 Sheets—Sheet 1.

J. S. DETRICK.
BOTTLE SEALING DEVICE.

No. 572,338.

Patented Dec. 1, 1896.

Fig 1.

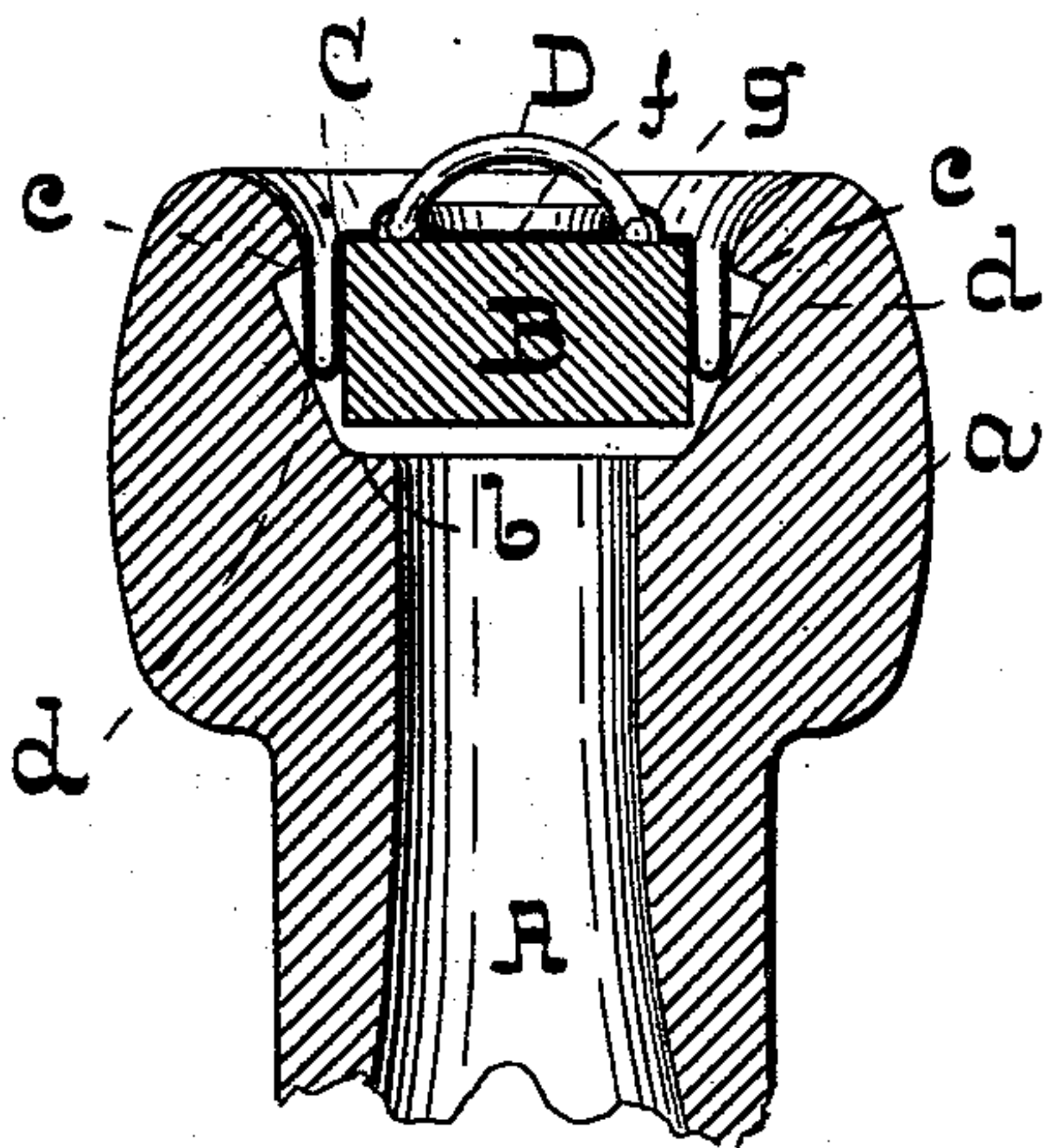


Fig 2.

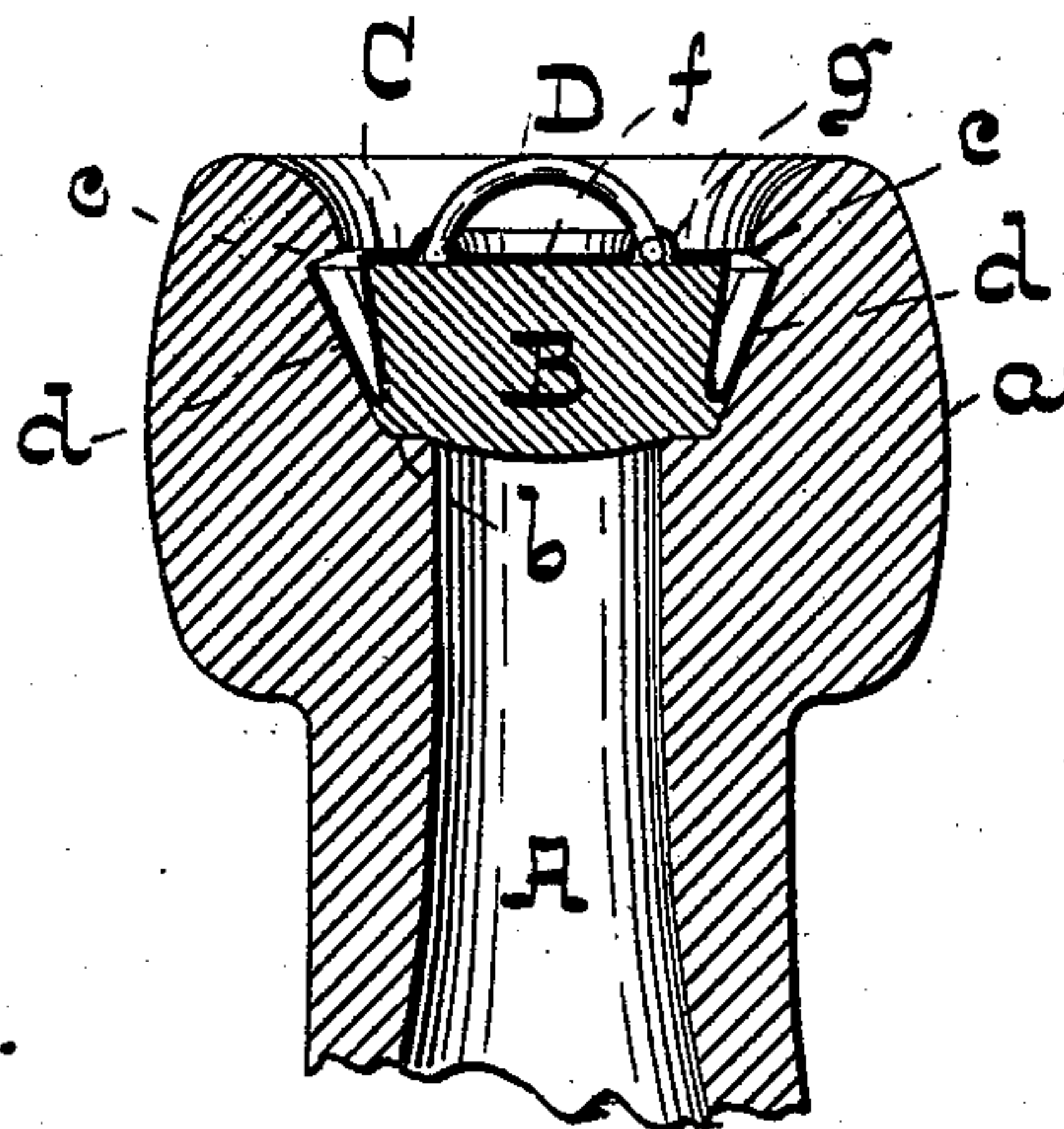


Fig 3.

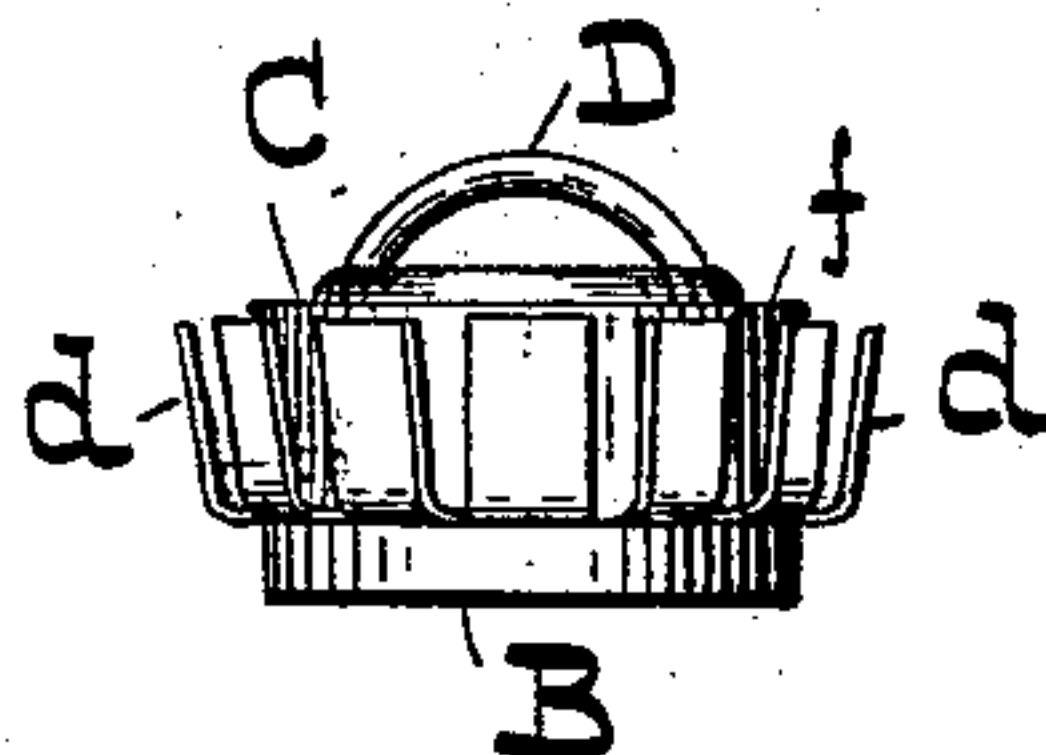


Fig 4.

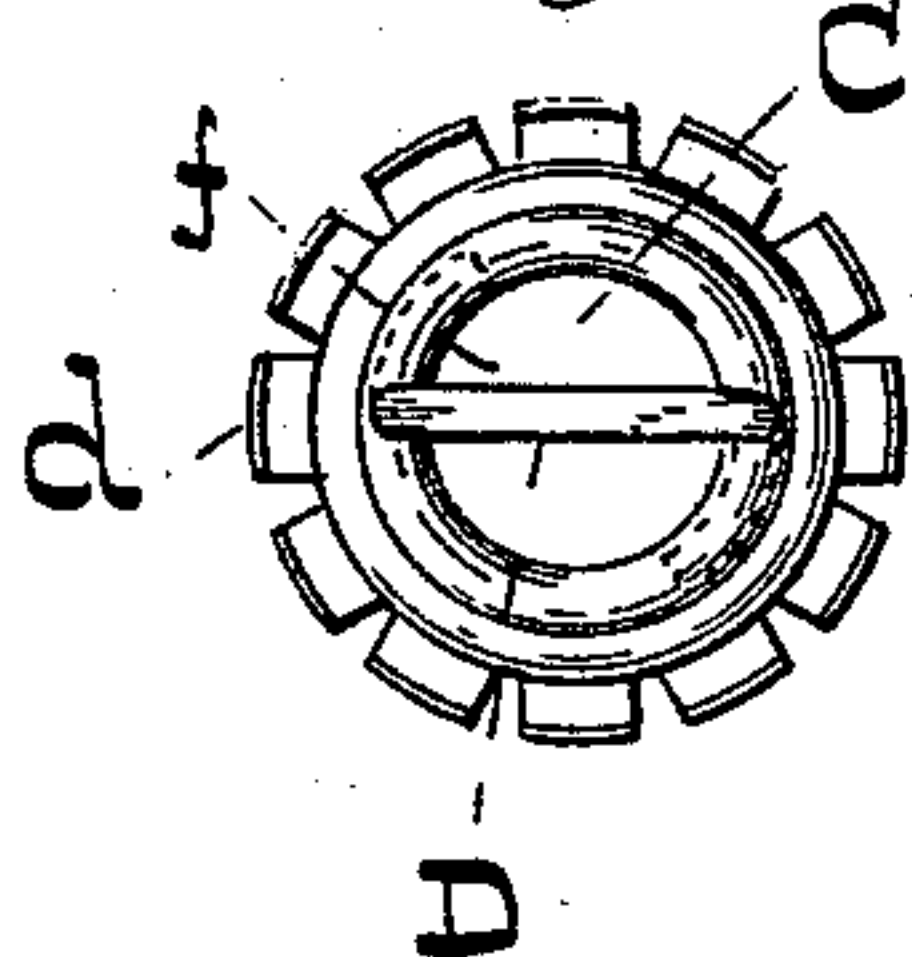


Fig 5.

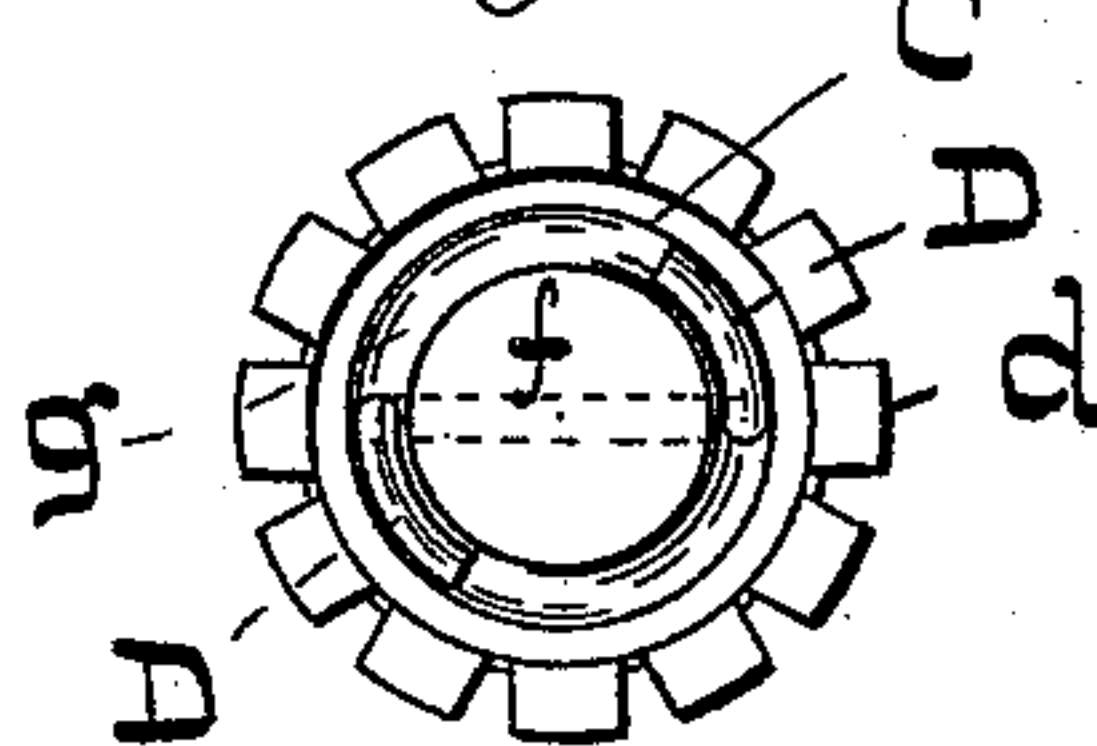
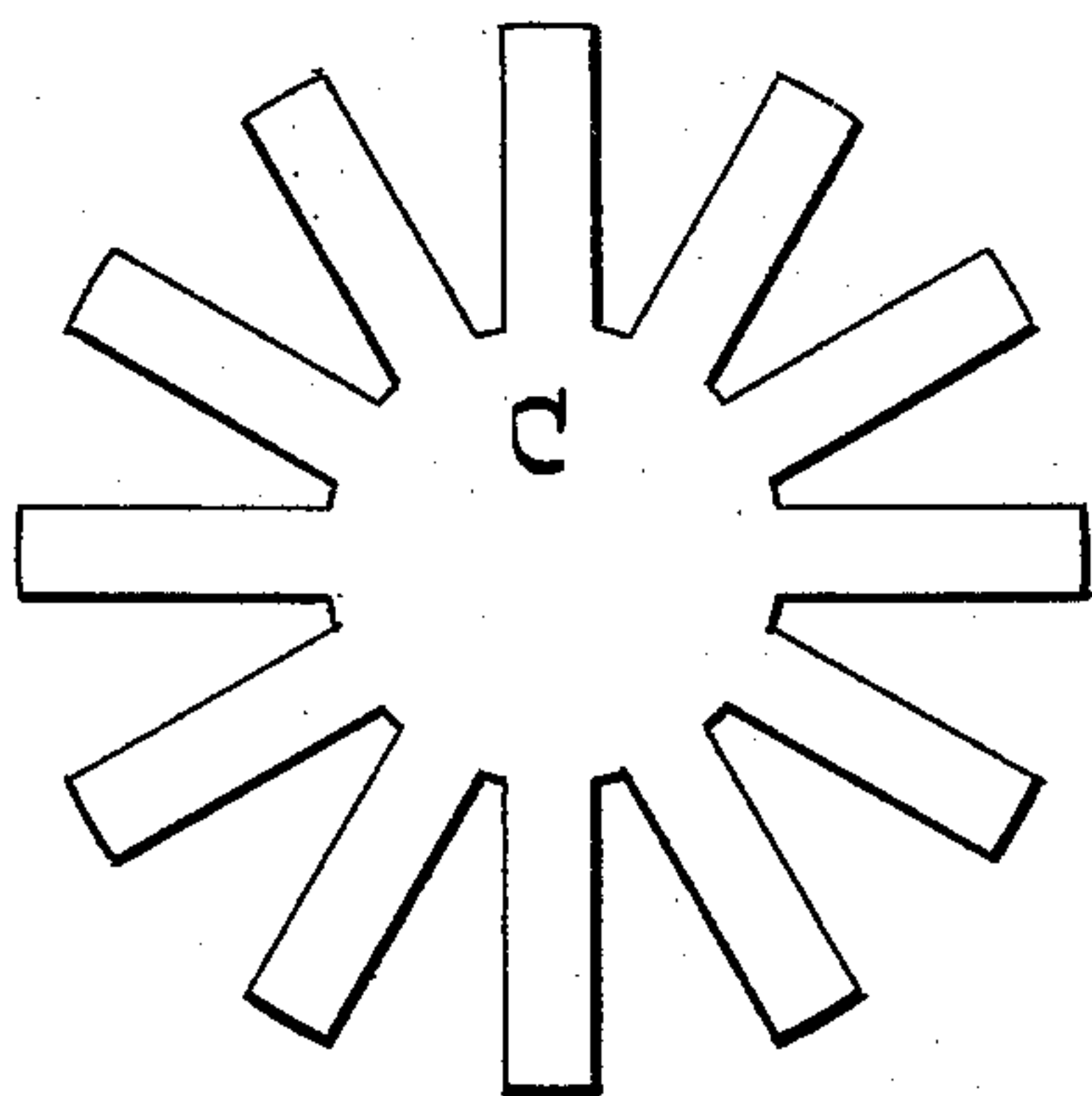


Fig 6.



-WITNESSES-

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Fig 7.

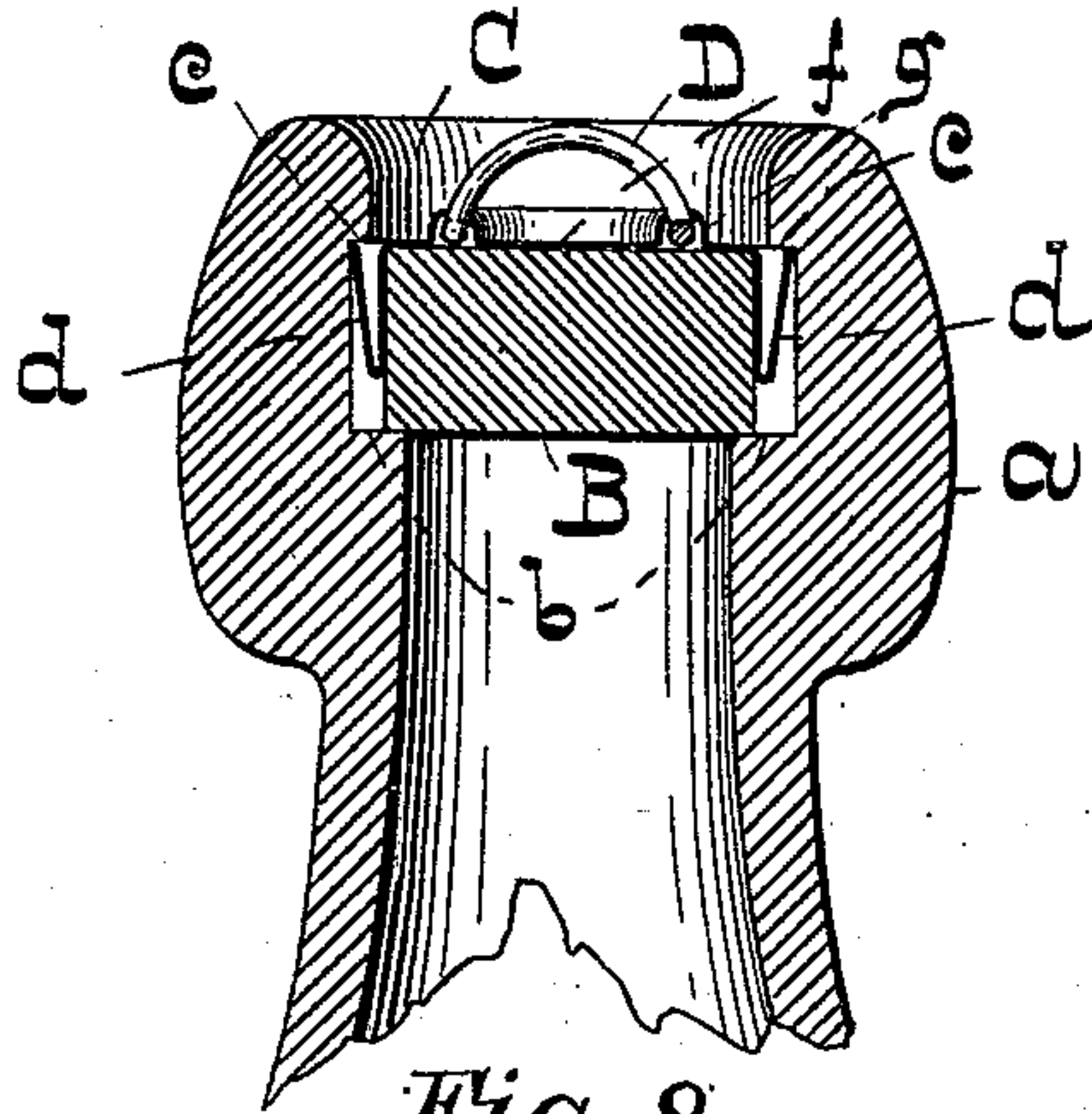


Fig 8.

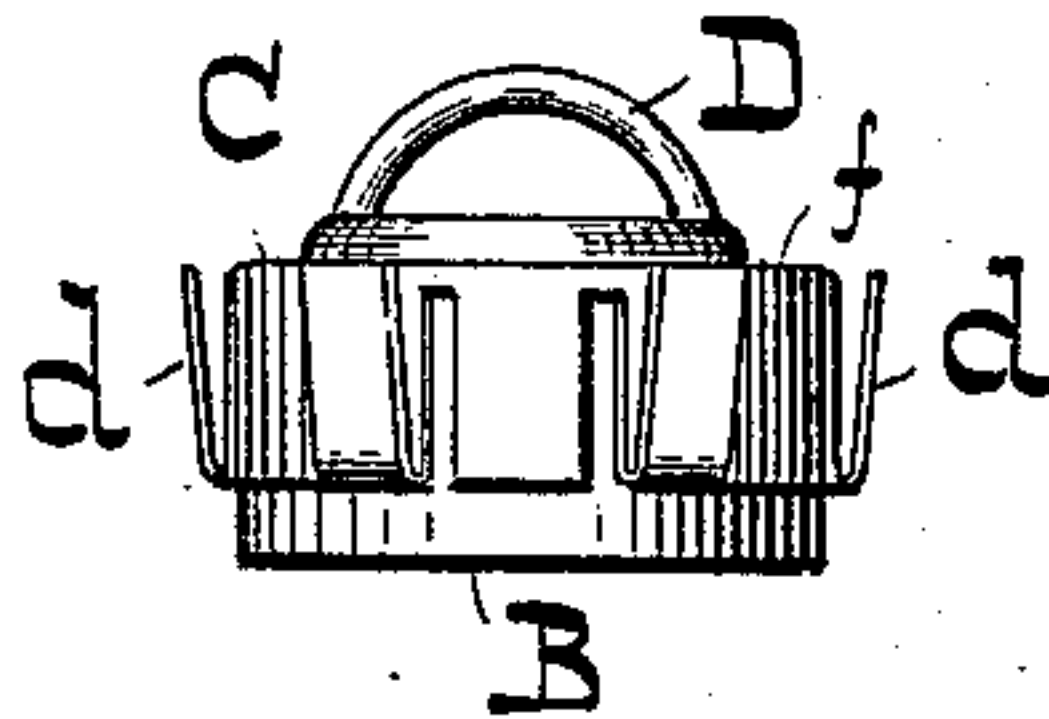


Fig 9.

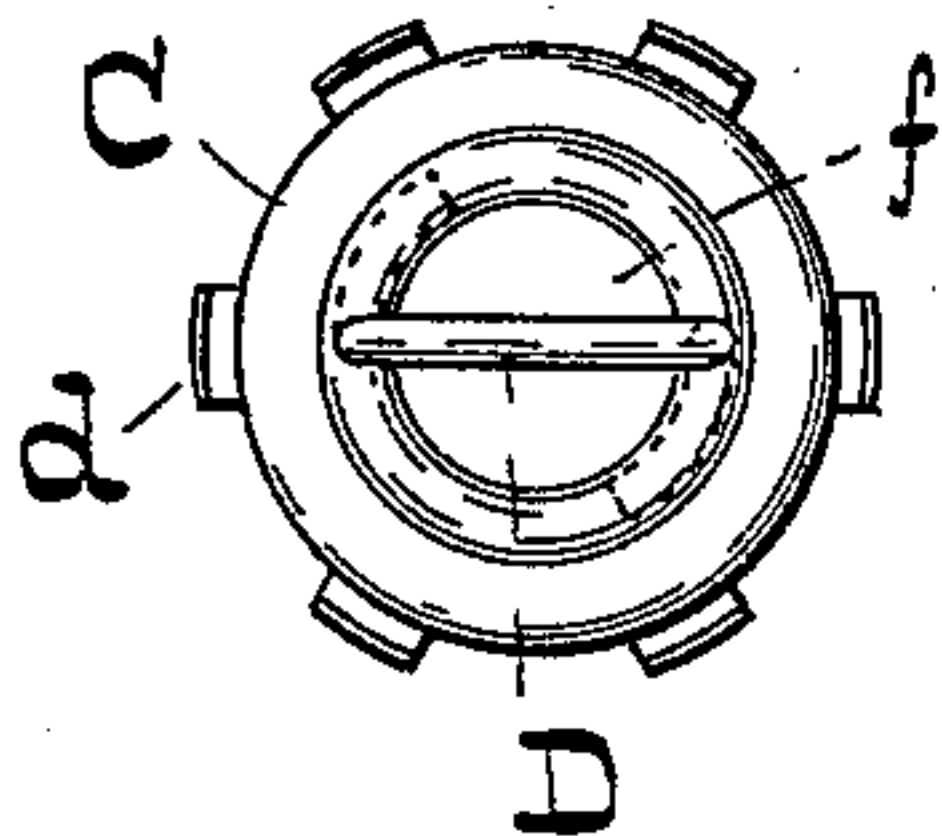


Fig 10.

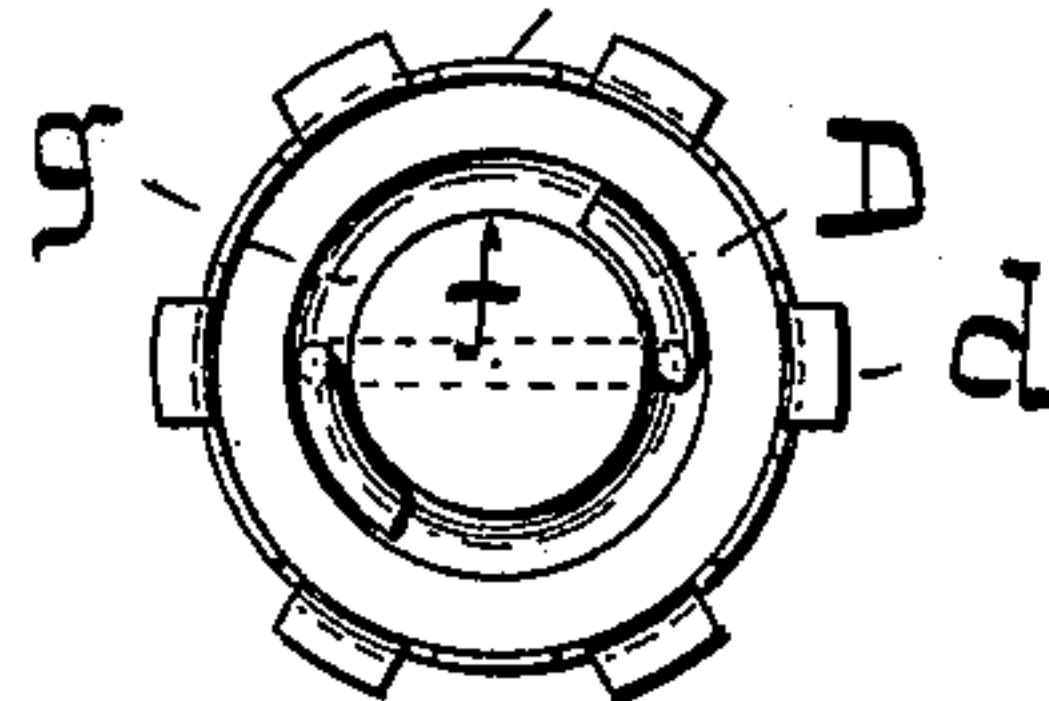
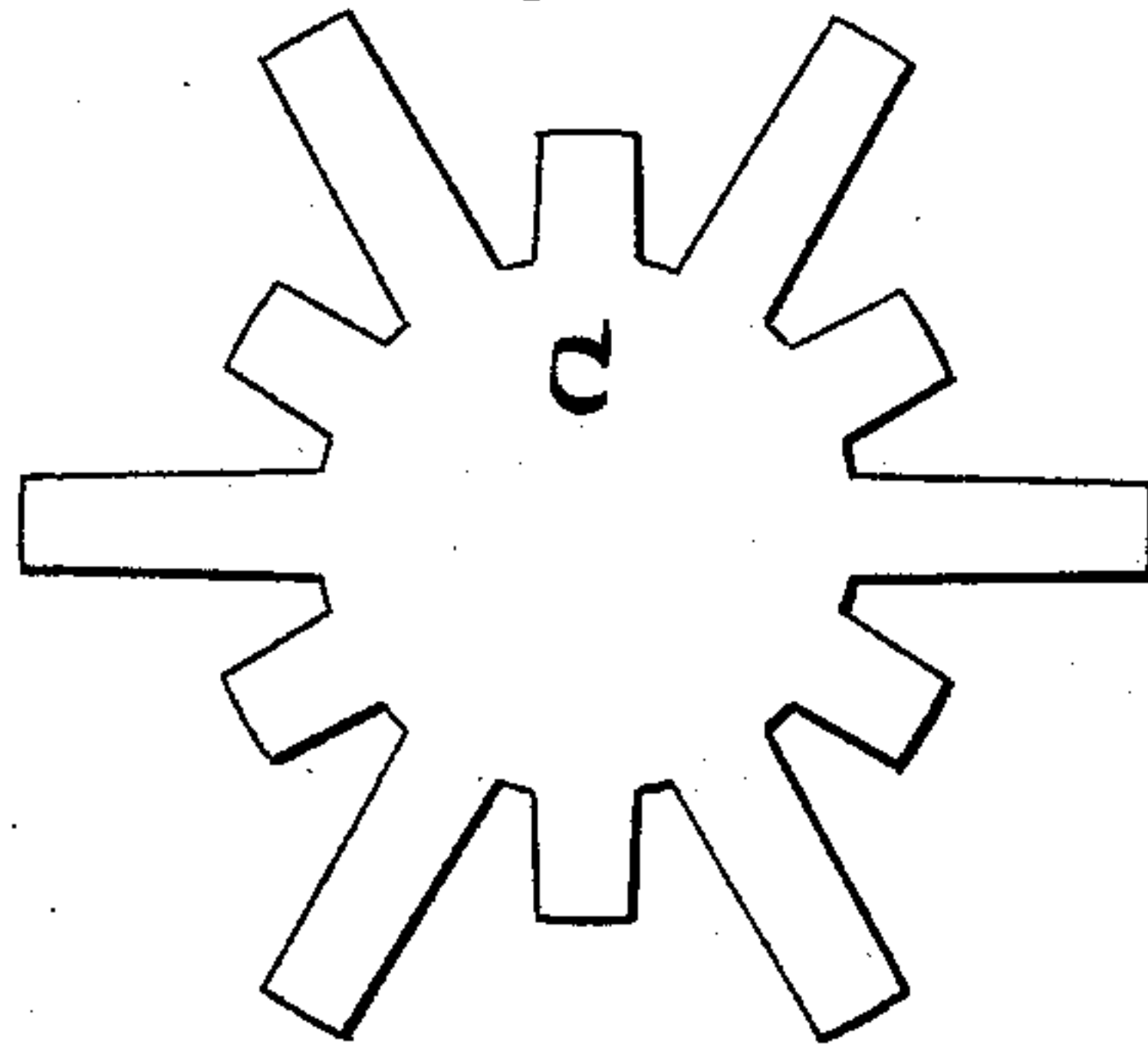


Fig 11.



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UNITED STATES PATENT OFFICE.

JACOB S. DETRICK, OF BALTIMORE, MARYLAND.

BOTTLE-SEALING DEVICE.

SPECIFICATION forming part of Letters Patent No. 572,338, dated December 1, 1896.

Application filed February 13, 1895. Serial No. 538,181. (No model.)

To all whom it may concern:

Be it known that I, JACOB S. DETRICK, of the city of Baltimore, and State of Maryland, have invented certain Improvements in Bottle-Sealing Devices, of which the following is a specification.

In Letters Patent No. 524,890, granted to me on the 21st day of August, 1894, for a bottle-sealing device, I combine with a bottle-head having in its mouth a seat, and a lip or projection situated above the seat, a compressible seal, and a holder for the seal, which is contracted in size as it is forced onto the mouth of the bottle and onto the seal to compress it, and which holder expands or is expanded, so as to bring a portion of its corrugated upper edge under the said lip or projection, and thereby hold the seal firmly in place, the remaining portion of the corrugated edge being within the circumference of the said lip, so as to provide spaces into which a device may be introduced to extract the holder. In the said patented invention the sealing operation is easily and satisfactorily performed, but some difficulty is experienced in dislodging the seal-holder by means of the instrument devised for the purpose and referred to in the said Letters Patent, and the seal is not carried with the holder, but has to depend for its ejection on the pressure of the liquid contents of the bottle.

In the present invention I obviate the difficulties above mentioned by a modified construction of the bottle-mouth and the seal-holder, whereby in the sealing operation the lower edge of the holder is automatically and mechanically contracted, and thereby forced into the body of the seal to such an extent as to enforce the extraction of the seal with the holder. In the closing in of the lower part of the seal-holder the upper edge is expanded and made to pass farther under the holding-lip than if the inherent elasticity of the sheet metal were alone depended upon. Further, I provide the holder with a wire staple whereby the withdrawal of the seal and the holder from the bottle is effected, and construct the holder in such manner that the ends of the wire staple are not embedded in the seal, but are situated entirely in the holder, the latter presenting a flat surface to the seal.

In the extraction of the holder and seal by

means of the staple and any suitable instrument which is inserted through the staple the holder is inverted or in a manner straightened, and the clasp of the seal by the holder, instead of being relaxed, is increased, so that there is no possibility of the holder leaving the seal in the bottle-mouth.

In the further description of the said invention which follows reference is made to the accompanying drawings, forming a part hereof, and in which—

Figure 1 is a vertical section of the upper part of a bottle, together with the sealing device, illustrating the relative positions of the seal and bottle after the seal is entered in the bottle-mouth and before it is forced to its seat. Fig. 2 is a view similar to Fig. 1, except that the sealing device is shown in place and the bottle sealed. Fig. 3 is an exterior side view of the sealing device as it appears before its insertion in the bottle-mouth, and Fig. 4 a top view of the same. Fig. 5 is an under side view of the sealing device. Fig. 6 is a view of the blank from which the seal-holder is formed. Figs. 7, 8, 9, 10, and 11 are views similar to Figs. 2, 3, 4, 5, and 6, except that the construction of the bottle-mouth and the sealing-cap is somewhat modified, as will hereinafter fully appear.

Referring now to Figs. 1 to 6, inclusive, A is the bottle, and *a* the head of the same.

The seal-seat is denoted by *b*, and the projecting lip, which is situated over the seat, by *c*.

B is the compressible seal, formed of any suitable material, preferably cork, which rests on the flat annular surface of seat *b*.

C is the spring seal-holder, which consists of a metallic inverted cup having prongs *d*, which are bent upward and flared outwardly from the lower end of the cup proper. The construction of this pronged cup is best shown in Fig. 3, which is an exterior view of the device with the contained compressible seal, and it will be seen that the upper ends of the prongs are nearly in alignment with the crown *f* of the cup. The relative positions of the ends of the prongs *d* and the crown *f* are arbitrary and may be considerably changed without affecting the character of the holder.

D is a staple for extracting purposes, the ends of which enter the crown and are turned

around to lock it in place. In order that the ends of the staple will not interfere with the compressible seal and prevent its coming in contact with the bottom or crown of the cup, I form in the said crown an annular groove *g* of a depth slightly greater than the diameter of the wire used in the staple.

By referring to Figs. 1 and 2 it will be seen that the mouth of the bottle between the seat *b* and the lip or projection *c* is flared outwardly, and its diameter is such that upon inserting the sealing device in the mouth, as shown in Fig. 1, the folded portion of the cup, or that portion whereat the prongs are bent, comes into contact with the conical inner surface of the mouth. In continuing the downward movement of the sealing device in the sealing operation the portions of the prongs which clasp the seal are forced inward into and clasp tightly the material of the seal, and in this change in shape of the holder the extremities of the prongs are thrown out or given a tendency to flare out, if they are held as shown in Fig. 1. The prongs when held by the lip, as shown in Fig. 1, are therefore in a condition which will admit of their expanding as soon as they pass under the lip, and the sealing device finally assumes the position shown in Fig. 2, wherein the prongs are shown as in contact with the conical surface of the mouth of the bottle.

The degree of indentation of the cork seal by the holder, and consequently the flare of the prongs, depends to some extent on the depth to which the prongs are cut into the disk from which the blank is formed. For instance, if the inner portion of the prongs extends entirely to the crown of the cup or seal-holder the indentation will begin at the crown and increase in depth toward the point where the prongs are turned outward, but if they extend only, say, one-half the thickness of the seal the part of the cup above the prongs will be of uniform diameter and the indentation will begin from that point; but these are matters of detail and do not affect the

character of the invention, which aims to construct a cup or holder with prongs which project in an upward direction and are flared at their extremities as the lower portions are forced inward by contact with the conical surface of the bottle-mouth.

Referring now to Figs. 7, 8, 9, 10, and 11, it will be seen that the bottle-mouth is cylindrical, as shown in the said Letters Patent, and not flared, and that each alternate prong is not turned upward, but serves the purpose only of holding the seal in the cup. In this construction the expansion of the prongs is due only to the inherent elasticity of the metal and the degree of flare given to the prongs, and there is no indentation of the seal until some stress is placed on the staple with the view of extracting the seal.

I claim as my invention—

1. In combination with a bottle having a mouth in which is a seat and a projecting lip situated over the seat, a compressible seal, a cup in which the compressible seal is placed having an annular groove in its crown, and a staple-extractor with its ends entering the said annular groove and bent around so as to fit in the groove, substantially as specified.

2. In combination with a bottle having a mouth provided with a seat and a projecting lip over the seat and an inclined or conical surface between the seat and the lip, a sealing device which consists of a compressible seal having a holder formed of a cup with upwardly-turned prongs of a diameter at the point at which they are bent or folded, greater than that of the portion of the bottle-mouth which receives them when the compressible seal is on the seat, whereby in the seating of the seal the lower end of the holder is forced into or made to grip the material of the seal, substantially as specified.

JACOB S. DETRICK.

Witnesses:

P. B. HOGE,

EDWARD R. FOSTER.