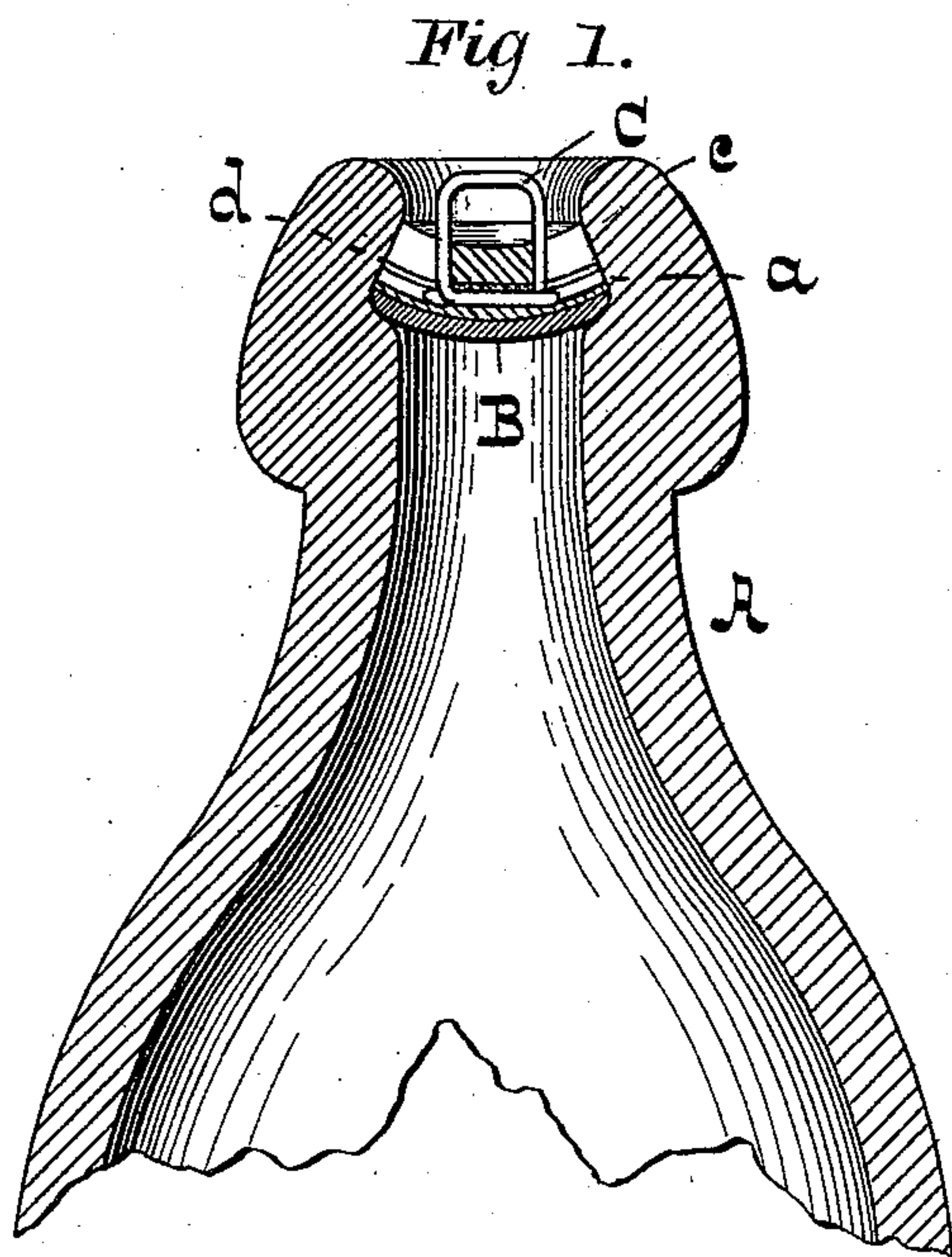


(No Model.)

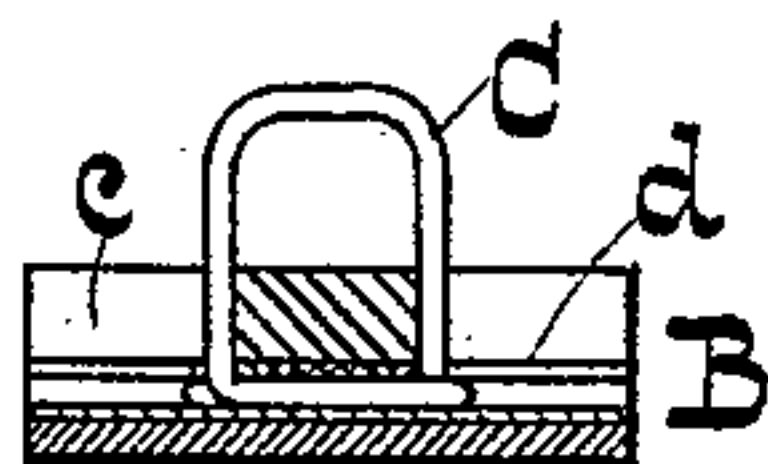
W. PAINTER.  
BOTTLE SEAL OR STOPPER.

No. 528,487.

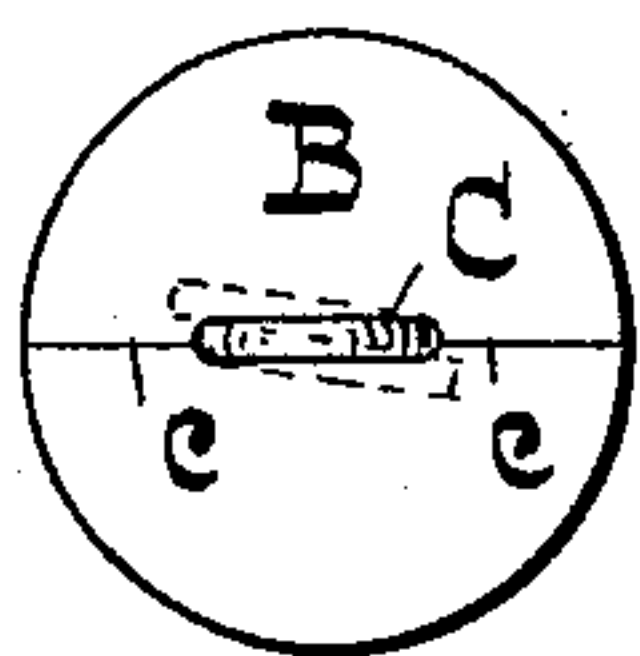
Patented Oct. 30, 1894.



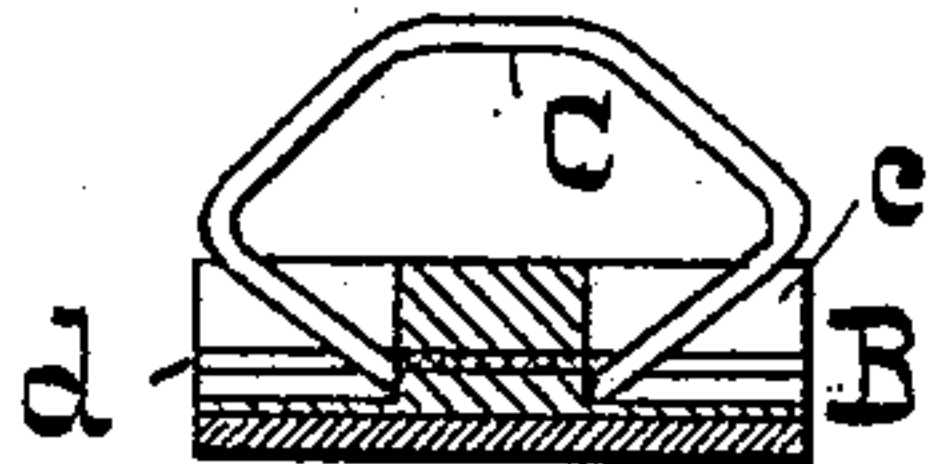
*Fig 2.*



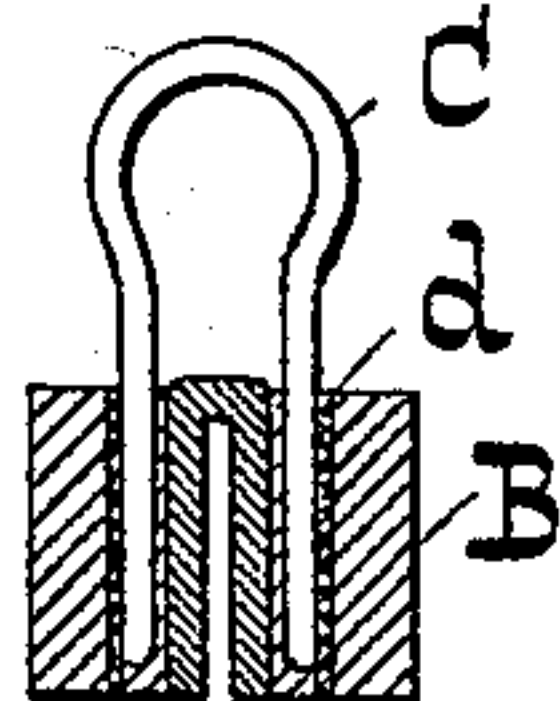
*Fig 3.*



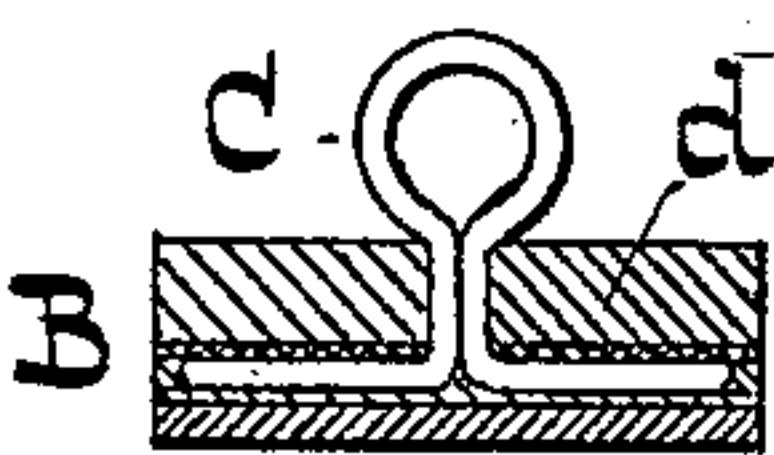
*Fig 4.*



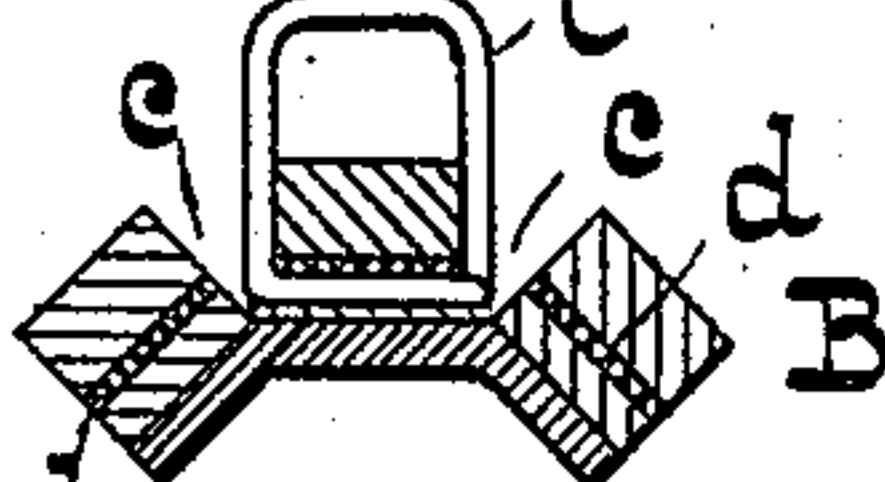
*Fig 8.*



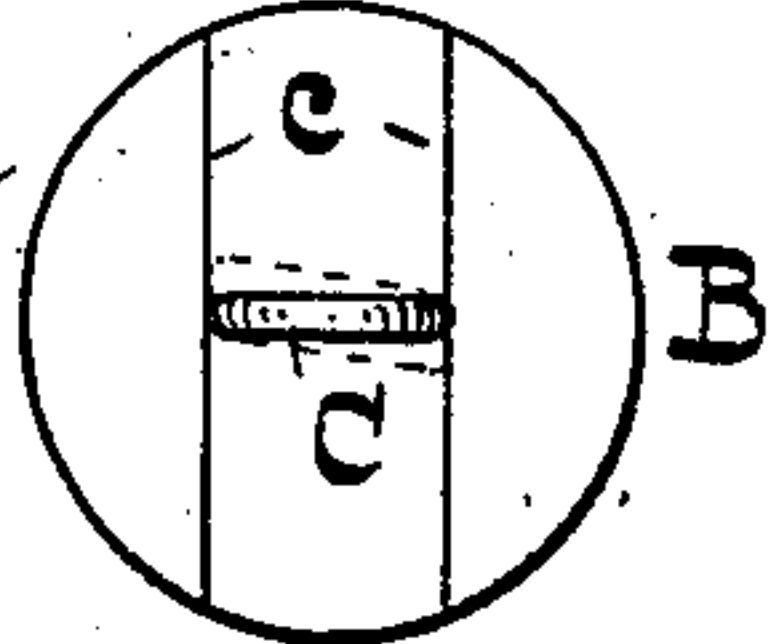
*Fig 9.*



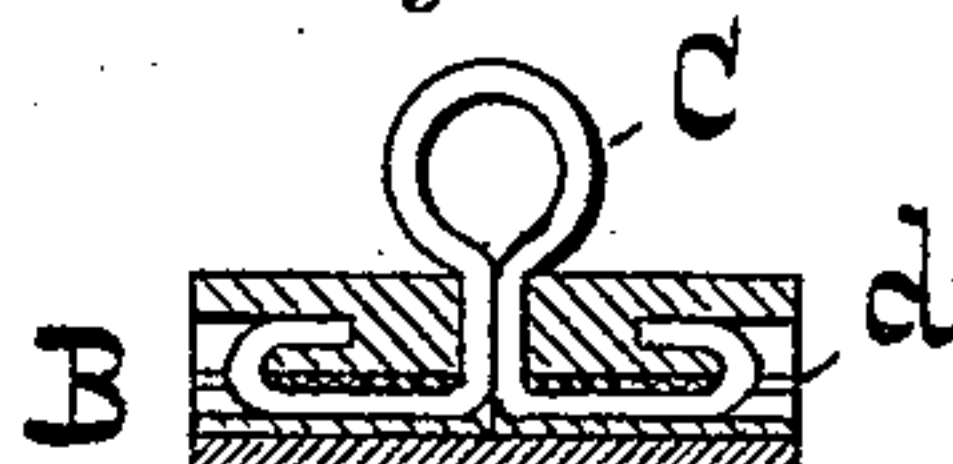
*Fig 10.*



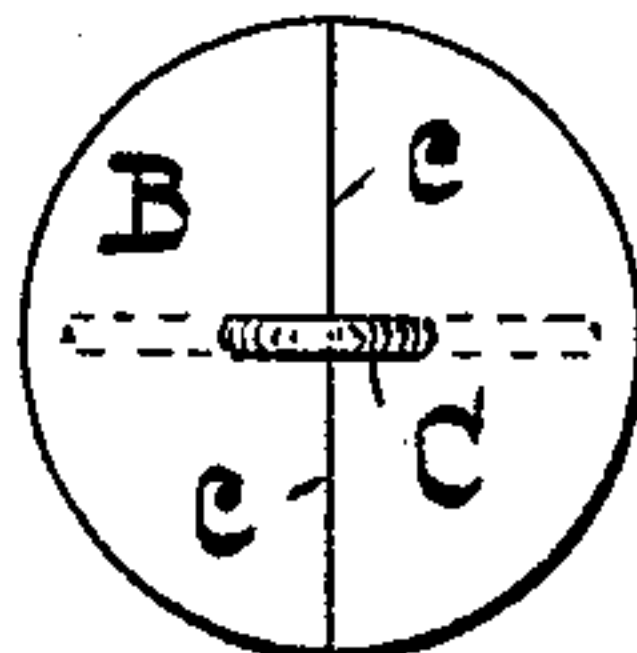
*Fig 11.*



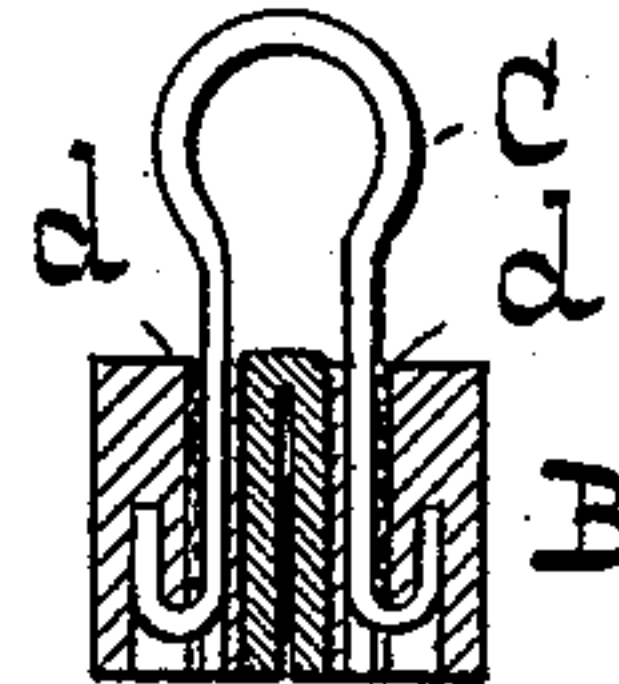
*Fig 5.*



*Fig 6.*



*Fig 7.*



—WITNESSES—

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—INVENTOR—

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by W. H. Howard  
att'y.



# UNITED STATES PATENT OFFICE.

WILLIAM PAINTER, OF BALTIMORE, MARYLAND, ASSIGNOR TO THE CROWN CORK AND SEAL COMPANY, OF SAME PLACE.

## BOTTLE SEAL OR STOPPER.

SPECIFICATION forming part of Letters Patent No. 528,487, dated October 30, 1894.

Application filed October 8, 1891. Renewed April 20, 1894. Serial No. 508,373. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM PAINTER, of Baltimore, Maryland, have invented certain Improvements in Bottle Seals or Stoppers, of which the following is a specification.

This invention relates to certain improvements in the invention in bottle seals or stoppers described and claimed in my application, Serial No. 408,103, of even date herewith, to which reference should be made. In the said application the extracting device does not pass entirely through the seal and is secured in the same by means of an independent anchor which co-operates with the extractor proper in holding the same in place.

In the present invention the extractor, like the one described in the said application, does not pass entirely through the seal, but it differs from the one shown in the application, in that it is self anchored, that is to say,—there is no independent anchoring device employed, in connection with it.

In the 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 central sectional view of the upper portion of a bottle provided with the improved seal. Fig. 2 is a sectional view of the seal before its insertion in the bottle mouth. Fig. 3 is a top view of Fig. 2. Fig. 4 is a view of the seal shown in Figs. 1, 2 and 3 illustrating the manner of attaching the extractor thereto. Figs. 5 to 11, inclusive, are views of seals somewhat modified in construction, and hereinafter described.

Referring to Figs. 1, 2, 3 and 4, A is the upper portion of a bottle having in its mouth a groove, *a*, which corresponds in all essential particulars with that shown in the said filed application.

B is the seal which consists of a disk cut from a sheet of some flexible material, such as rubber, and faced on the under side with a coating of some substance which is not affected by the contents of the bottle to which the seal is applied. The seal is cut somewhat larger in diameter than the bottle mouth, so that when it is applied to the bottle mouth, as shown in Fig. 1, it takes a concavo-convex form.

C is a wire loop with its ends bent toward each other and crossed or lapped within the material of the seal. To admit of the attachment of the wire loop, the seal is first cut so as to produce two slits, *c*, which extend diametrically from a point near the center, to the edge or circumference but not entirely through the material, as shown particularly in Figs. 3 and 4. The wire loop to be attached to the seal is first bent into the form shown in Fig. 4, and as its ends are inserted through the slits into the solid rubber between their approaching ends, the sides of the loop are closed until they are parallel with each other. In this change of shape the bent ends of the loop are crossed or lapped as shown in Figs. 1, 2 and 3.

In order that the anchored wire loop may be firmly secured in the seal, the seal is preferably provided with a layer of some textile fabric, *d*, formed in its substance and situated immediately above the lapped ends of the wire.

Referring to Figs. 5, 6 and 7, the seal is cut diametrically across but not entirely through the seal, as shown particularly in Fig. 7. The seal is then bent at the cut or incision and the lower faces of the two halves brought together, as shown in Fig. 7. While in this position the ends of the wire loop which are straight are forced through the seal and their ends then turned up, after which the wire loop is withdrawn until the bent ends are buried entirely within the substance of the seal, as shown in the same figure. The seal is then opened or straightened in which operation the side wires of the loop are brought together, as shown in Fig. 5.

In Figs. 8 and 9 the ends of the wire loop are not turned up and the seal is cut in the same manner as is that shown in Figs. 5, 6 and 7. Fig. 8 shows the seal as the wire loop is inserted, and Fig. 9 illustrates the same after the completion of the attaching operation.

In Figs. 10 and 11 the seal is provided with two cuts or incisions which are parallel with each other and separated by a portion of the material about equal in width to the distance between the side wires of the loop, and the wire loop is inserted in a similar manner to the one shown in Figs. 1, 2, 3 and 4.

In all the constructions shown, the wire loop is not brought into contact with the contents of the bottle.

I claim as my invention—

- 5 1. A bottle seal having one or more slits therein cut from the upper side and extending downward partially through the seal, combined with an exterior loop the ends of which are passed through the said slits and embedded in the material of the seal, substantially as, and for the purpose specified.
- 10

2. A bottle seal having one or more slits therein of uniform depth which extend to the circumference of the seal, combined with an extractor loop the ends of which are passed through the said slits and embedded in the material of the seal, substantially as, and for the purpose specified. 15

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Witnesses:

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