

No. 691,382.

Patented Jan. 21, 1902.

H. A. HUGHES, JR.
JAR OR BOTTLE CLOSURE.

(Application filed Jan. 17, 1901.)

(No Model.)

Fig. 1.

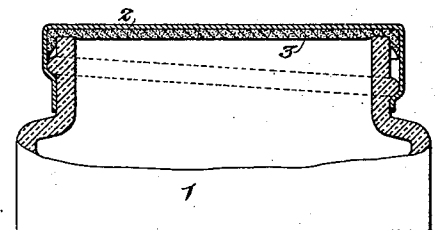


Fig. 2.

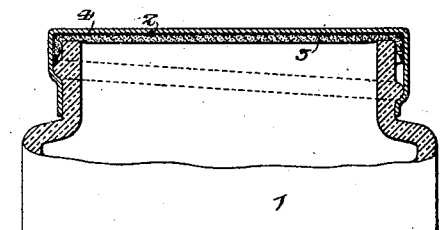


Fig. 3.

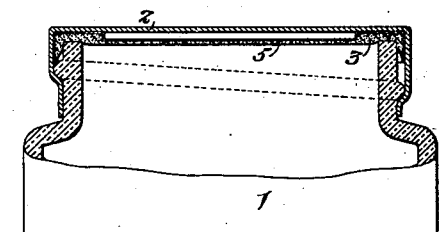
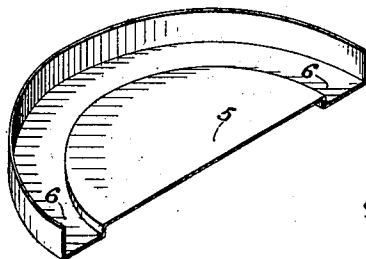


Fig. 4.



Witnesses:-

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by his Attorneys:-
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UNITED STATES PATENT OFFICE.

HENRY A. HUGHES, JR., OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
PERFECTION JAR CLOSURE COMPANY, OF PHILADELPHIA, PENNSYLVANIA,
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JAR OR BOTTLE CLOSURE.

SPECIFICATION forming part of Letters Patent No. 691,382, dated January 21, 1902.

Application filed January 17, 1901. Serial No. 43,639. (No model.)

To all whom it may concern:

Be it known that I, HENRY A. HUGHES, JR., a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain
5 Improvements in Jar or Bottle Closures, of which the following is a specification.

My invention relates to certain improvements in that class of closures for jars or bottles which are adapted to hermetically seal
10 the contents of such jars or bottles.

The improved closure forming the subject of my invention is preferably combined with an ordinary cap, top, or stopper, though for certain purposes it may be used alone.

15 The compound of which my improved closure is made is described and claimed in a companion application, filed of even date herewith. This compound possesses the property of swelling and becoming resilient or
20 rubber-like in the presence of moisture, and this quality serves to effect a sealing joint between the jar or bottle and its closure.

My invention is fully illustrated in the accompanying drawings, in which—

25 Figure 1 is a sectional view of a jar and its cap, showing the ordinary method of applying a closing medium. Fig. 2 illustrates a closure of the character shown in Fig. 1, combined with a paper lining arranged within the
30 cap. Fig. 3 illustrates my improved form of closure and the special form of paper lining employed therewith, and Fig. 4 is a sectional perspective view of the form of paper lining shown in Fig. 3.

35 In an application filed of even date herewith, Serial No. 43,640, I have described and claimed a new composition of matter which is insoluble in all ordinary liquids, but possesses the property of swelling and becoming
40 resilient or rubber-like when exposed to the action of such liquids, and when in such condition it is adapted to form a sealing joint. Such composition of matter I employ with the improved form of closure shown and de-
45 scribed herewith.

In Fig. 1 of the drawings herewith, 1 represents an ordinary jar for containing syrups, fruit-juices, and other food products, having a cap or cover 2. Carried by this cap and
50 adapted to contact with the mouth of the jar

is a layer 3 of the composition of matter described and claimed in the application before referred to.

In Fig. 2, in addition to the layer of the composition of matter, I employ a pressed-up disk or cap of paper 4, which is laid in the main cap or cover 2 before the sealing compound is poured or spread therein.

In Fig. 3 I have shown a form of the closure in which a pressed-up disk or cap 5, having an annular recess 6, is employed, and in Fig. 4 I have shown a sectional perspective view of the pressed-up disk or cap 5. By the use of a disk or cap of this character a thick layer of the sealing compound is disposed at
60 the joint where the cap contacts with the jar when screwed into place, and a fluid-tight joint is thereby effected. The central portion of the disk or cap 5 may be coated with a comparatively thin layer of sealing com-
70 pound.

The caps or stoppers are prepared by pouring into or coating the same with the mixture when the latter is in a plastic or semifluid condition, and the articles thus prepared are
75 allowed to dry. When such prepared caps, covers, or stoppers are to be employed, they are wet prior to being set in place, or they may be wet by the contents of the jar or bottle, when they will immediately swell, and if
80 the caps or covers have been screwed down comparatively close to the mouth of the jar such swelling will effect a fluid-tight joint between the cap or cover and the jar.

I prefer to use as a lining for the cover the
85 special pressed-up cap or disk 5, having the annular groove 6. (Shown in Figs 3 and 4.) These paper caps or disks are placed in the cover before the sealing mixture is poured or spread therein, and I prefer to use when
90 preparing the covers a forming device, such device to fit the cover and spread the mixture over the interior of the same evenly. The mixture is thereby caused to entirely in-
95 close the paper cap or disks, and the edge of the mixture will be brought into contact with the side of the cap.

The use of a disk or cap of paper decreases the amount of the sealing mixture required and serves also to strengthen the closure 100

when the latter is under vacuum or pressure tests. In place of the paper caps or disks I may use a fabric disk—such, for instance, as that shown and described in the patent of

5 Henry Albert Hughes, No. 656,548, dated August 21, 1900.

Another method of employing the compound in making a closure for the purpose just described would be to coat large sheets of paper, fabric, or other suitable material with the mixture, allow the same to dry, and when thoroughly dried cut such sheets into suitable shapes to be combined with jar-covers and serve as a closure. When used in

15 this manner, the compound is preferably treated with glycerin or other similar substance for the purpose of rendering it resilient without the addition or contact of moisture when the closure is to be used.

20 The mixture with which I prepare my improved closure is fully described in the companion application, and consists, essentially, of a glutinous and mucilaginous substance combined with a filling material and a toughening agent, the whole formed into a plastic or semifluid mass with the addition of an acid solution and water. To render this mixture insoluble, a coagulant is added, preferably formaldehyde, and during coagulation the closures forming the subject of this present invention are prepared. The mixture having dried, it becomes insoluble, but may be rendered resilient and rubber-like, as before described, by the addition of water. I have

also discovered that I may use the above-described mixture before the coagulant is added and prepare the fabric closures by coating both sides of the same with the soluble compound, which is allowed to dry. When it is desired to use this form of closure, I wet it in formaldehyde, and the action of the latter renders the compound insoluble, and the water of the formaldehyde renders the said compound resilient.

Having thus described my invention, I claim and desire to secure by Letters Patent—

As a new article of manufacture, a closure for jars or bottles comprising a covering or closing member, a shaped lining for said member, and an insoluble coating compound for the lining, said lining being provided with an annular groove whereby a thicker layer of the coating may be disposed adjacent to the edge of the jar or bottle than is spread over the main surface of the lining, said coating possessing the property of becoming resilient in the presence of moisture and forming a fluid-tight joint between the jar or bottle and the covering or closing member.

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

HENRY A. HUGHES, JR.

Witnesses:

MURRAY C. BOYER,
JOS. H. KLEIN.