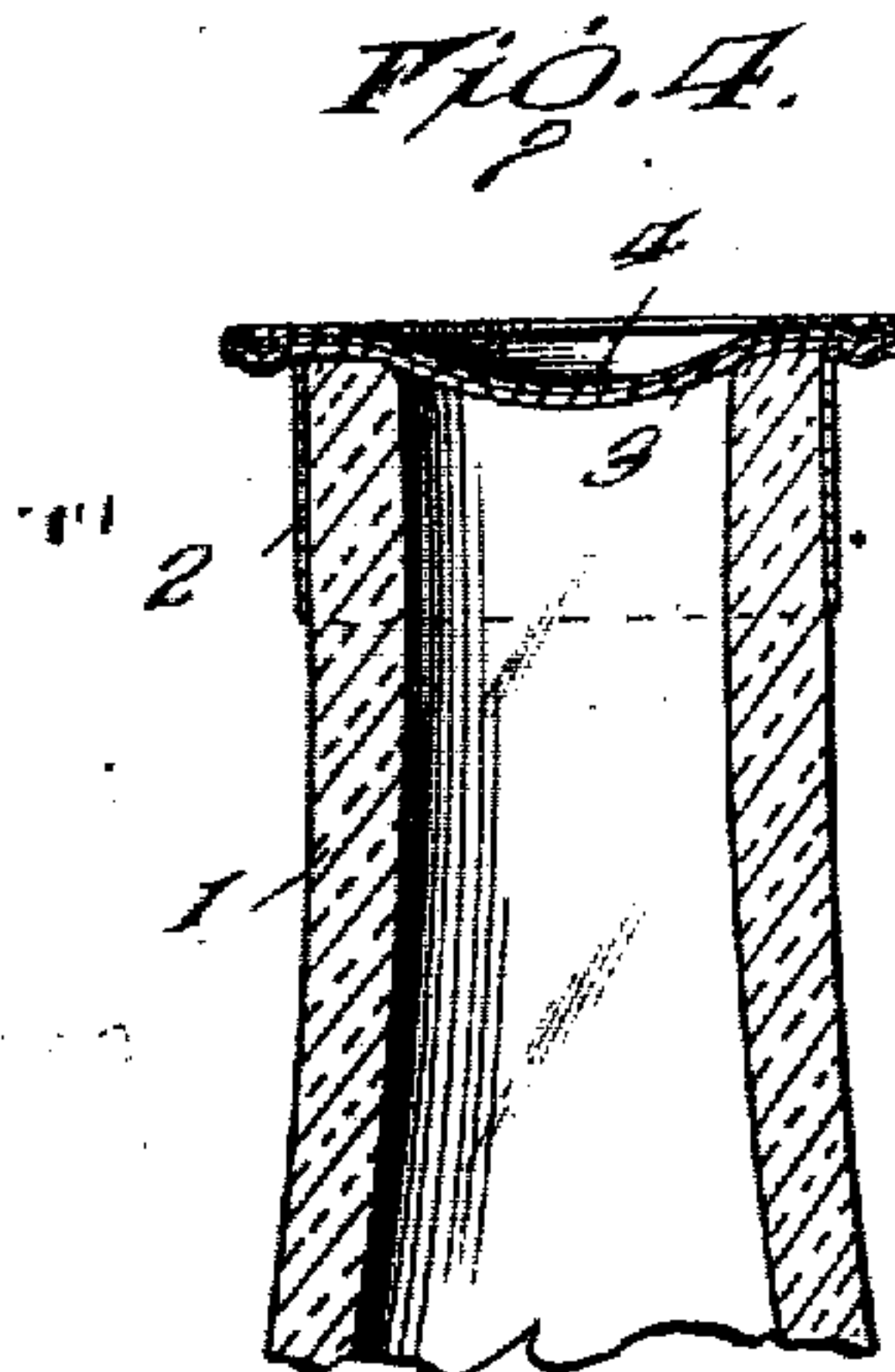
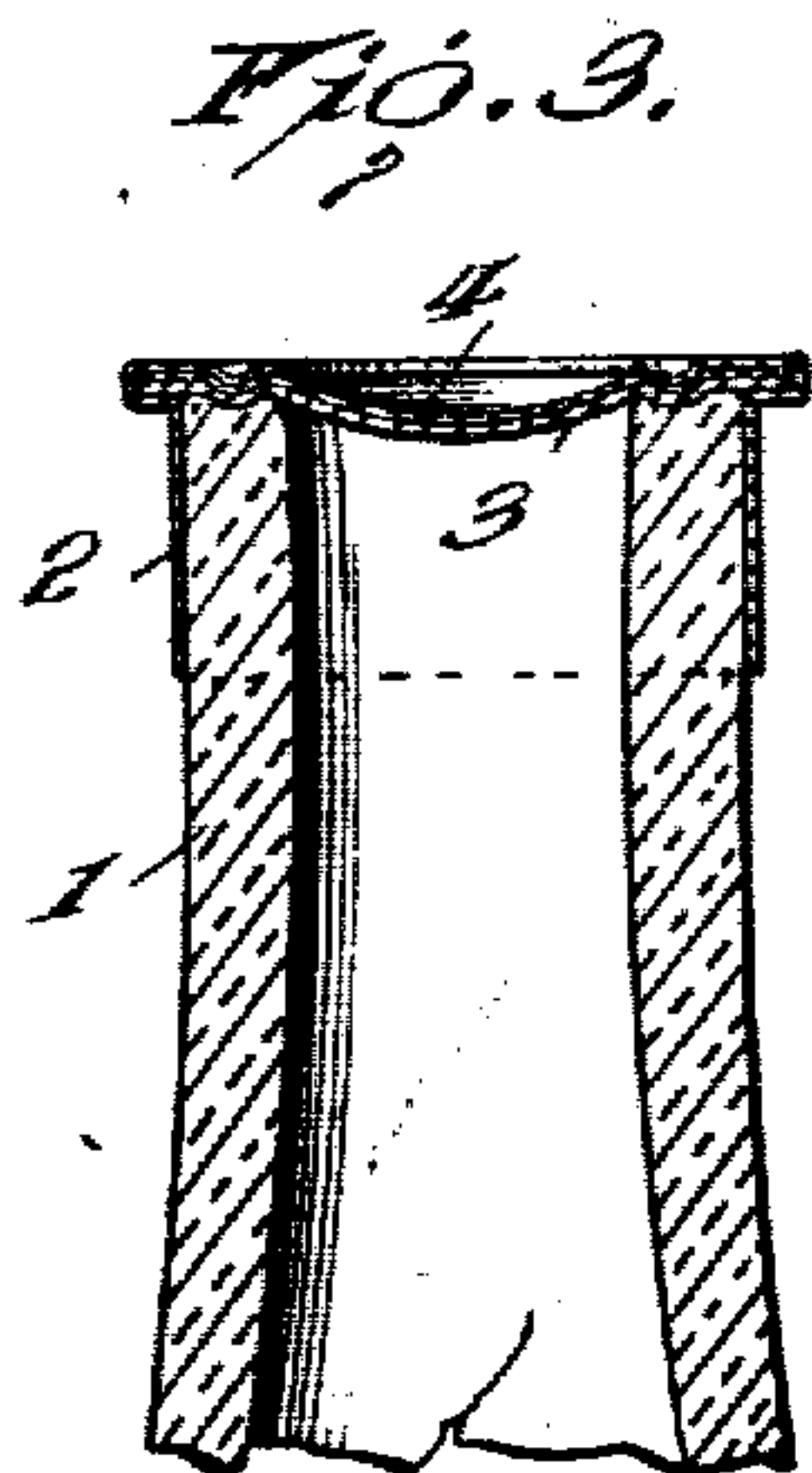
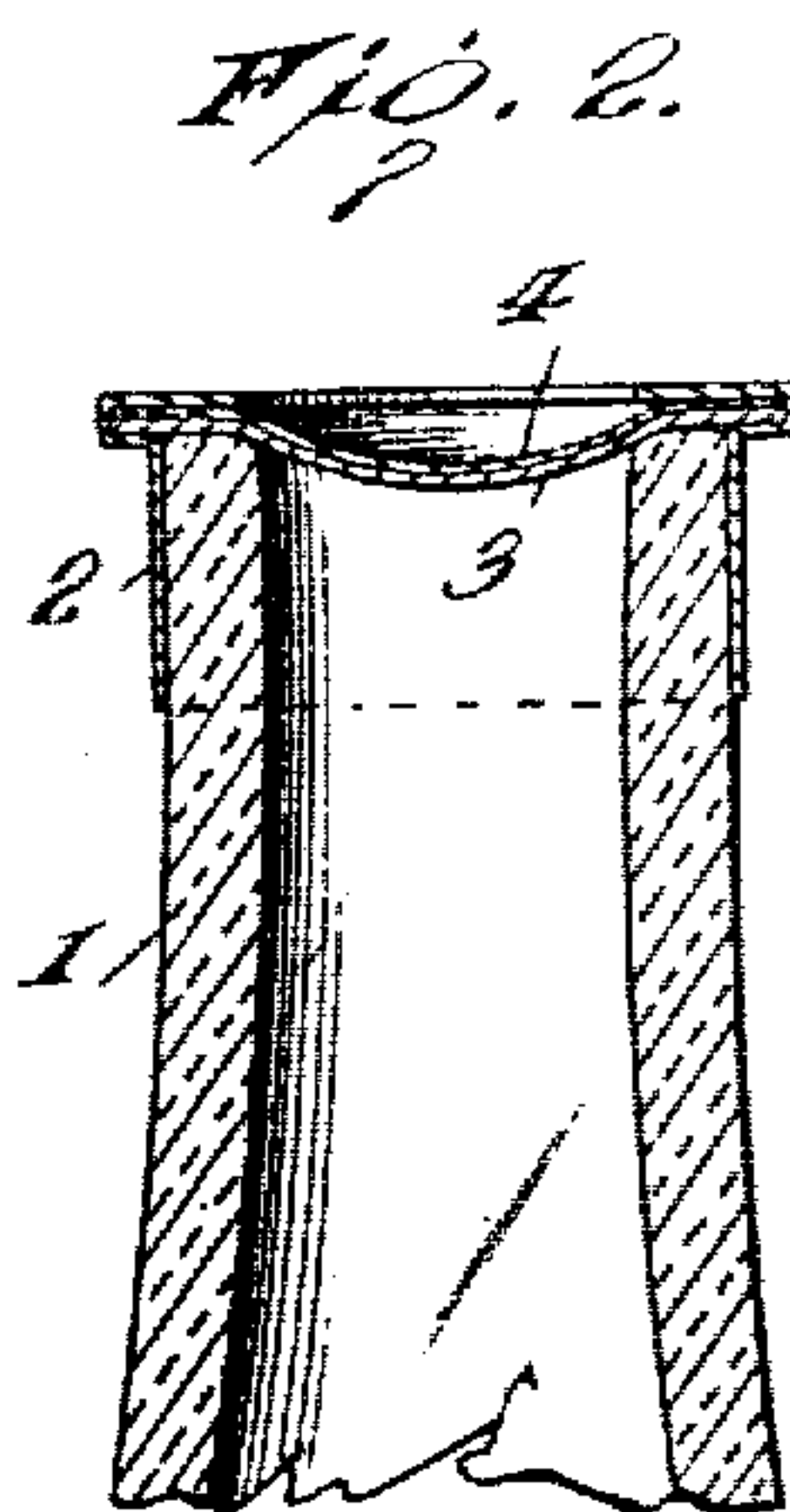
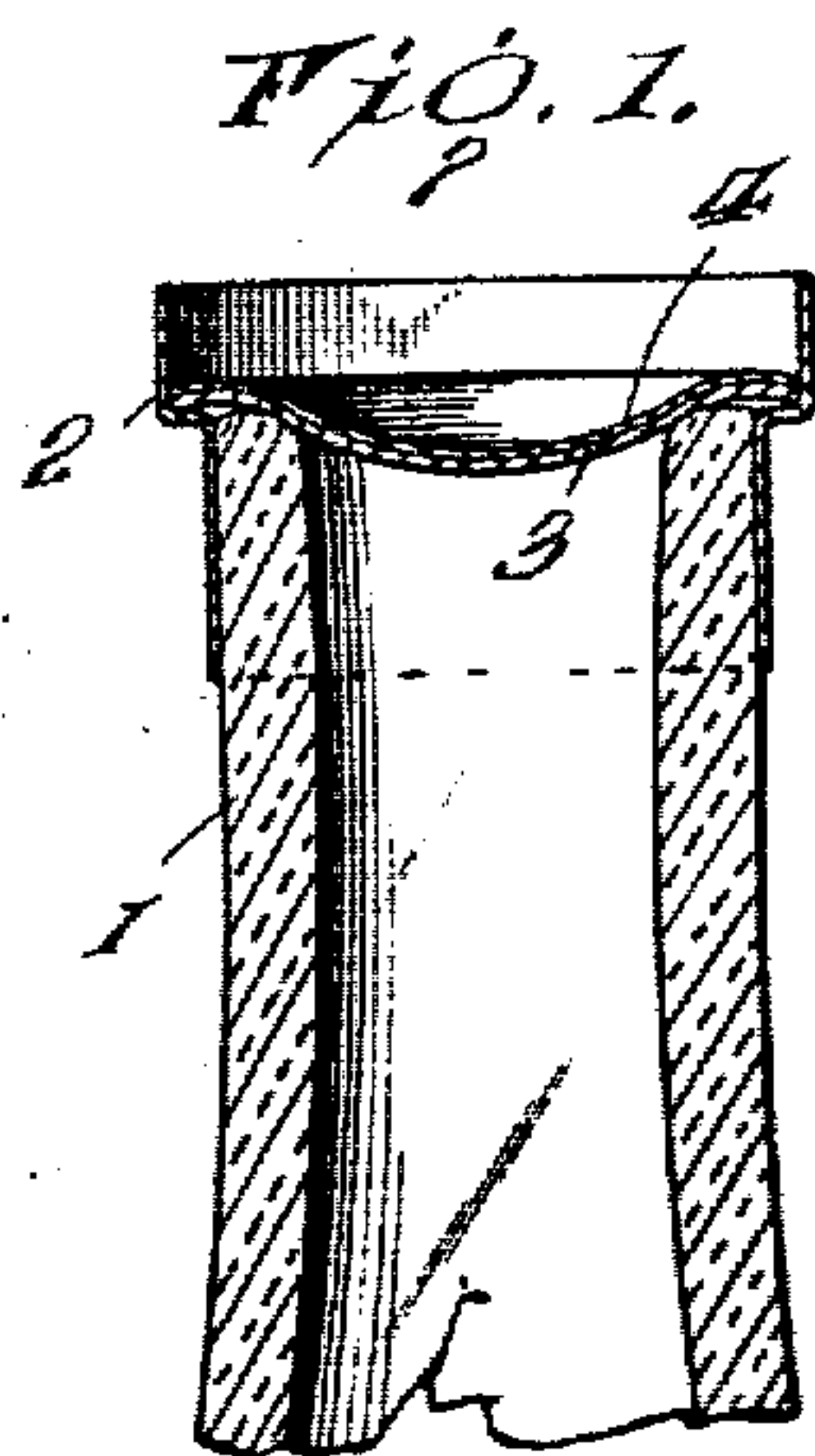


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PATENTED MAR. 27, 1906.

J. C. ANDERSON.
BOTTLE.

APPLICATION FILED MAR. 28, 1905. RENEWED FEB. 15, 1906.



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UNITED STATES PATENT OFFICE.

JAMES C. ANDERSON, OF HIGHLAND PARK, ILLINOIS.

BOTTLE.

No. 816,419.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JAMES C. ANDERSON, a citizen of the United States, residing at Highland Park, in the county of Lake and State of Illinois, have invented certain new and useful Improvements in Bottles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in glass vessels of all kinds, and has for its principal objects to prevent the reuse of such vessels, to fraudulently indicate that the contents of such refilled vessels are the same as originally contained therein, and also to prevent the deterioration of the contents of the vessel.

My invention is based upon a discovery that steel and other metals having substantially the same characteristics and properties may be successfully welded with glass, as fully described and illustrated in Letters Patent granted to me on the 7th day of July, 1903, No. 732,812, for improvement in "sparking plugs." With the knowledge of this fact and that in the art to which my present invention relates little or no advancement has been made in the manner of sealing glass vessels containing wines and other alcoholic liquors in a manner to protect the contents against leakage and the escape of any contained gaseous bodies or to prevent the sealing devices from being attacked by germs which not only by their boring action augment the leaky conditions of the sealing devices, but likewise by reason of their entry into the contents of the bottle induce to what is commonly designated a "corky" taste, but which to a great extent is due to the contamination of the liquor by the dead bodies of the germs which have found access thereto, lead to my present invention.

In order that the full advantages of my invention may be understood and appreciated, I deem it expedient to state that the usual sealing device of ordinary bottles generally consists of cork which is made of the bark of the oak tree, and it is a fact demonstrated by scientific investigation that this particular tree is subjected to attack by a germ known as a "borer," which generally traverses the body and locates itself therein, and hence it is that the corks made from the bark are to a greater or less extent infested with these particular germs, and consequently it has been

found from experience that their boring action operates to not only create channels through which liquors may leak or seep, but that when the germ or borer enters the bottle it imparts to such contents a taste which, as before stated, is commonly designated as "corky." In the use, therefore, of the ordinary cork as a sealing device for bottles containing wines and liquors of all kinds it has been the common experience of those engaged in the business that a large percentage becomes valueless, particularly in the case of liquors containing gases and which are subjected to much agitation in sea voyage or long railroad transportation, so that it is impossible to prevent the escape of the gases and the consequent deterioration of the liquors. It has also been found that when from any cause the sealing device of cork permits the leakage or seepage of the contents of the bottle the presence of such seepage attracts warehouse or storage germs, which attack and destroy the cork in the manner hereinbefore explained, thus augmenting the seepage and destructively affecting the contents of the bottle or other vessel.

With a knowledge of all these disadvantages in the use of the ordinary cork as a sealing device my invention has for its object to dispense with the use of this material and to provide a closure for vessels which will not only absolutely prevent any attack upon such sealing devices by germs of any kind, but will at the same time produce a perfect hermetical seal, and thus prevent the escape of the contents or any gases contained therein.

My invention has also for its object to provide a glass bottle or other containing vessel with means designed to prevent the fraudulent refilling of said vessel and disposing of the same as an original package.

With these objects in view my invention consists in providing a glass bottle or other vessel with a metallic body welded to the vessel and surrounding the exit-opening therein and adapted to be compressed upon or otherwise securely attached to a seal or stopper in such manner as to produce an air, gas, and liquid tight joint and so that when the contents of such vessel has been removed such vessel cannot be again filled and sold as an original package.

My invention also consists in the details of construction hereinafter described which I have found advantageous in carrying out the genus of my invention.

In order that those skilled in the art to which my invention appertains may know how to make and use my invention and to fully appreciate all of its advantages, I will proceed to describe in detail the peculiarities of construction and the method employed by me in its production, referring by numerals to the accompanying drawings, in which—

Figure 1 is a central vertical section of the neck of a bottle involving my invention and showing the position and condition of the parts before permanently closing the bottle. Fig. 2 is a similar view showing the position and condition of the parts after the bottle has been closed. Fig. 3 is a similar view, but showing a slight modification. Fig. 4 is a similar view showing another modification.

Similar reference-numerals represent like parts in the several figures of the drawings.

1 is the neck of an ordinary glass bottle, and 2 is a thin steel ring or tube of hat shape, as clearly shown at Fig. 1.

3 is an air, gas, and liquid tight disk composed of any suitable flexible material, and 4 is a disk of aluminium.

In constructing my improved bottle and to secure a permanent and perfect weld between the steel ring and the neck of the bottle I apply the ring to the neck of the bottle while the latter is in a viscid and heated condition, (in which condition a suitable welding heat exists,) taking care that a close fit exists between the ring and the neck of the bottle in order to prevent the presence of air between said surfaces, thus preventing the formation of any oxid at such locality. I so locate the ring with reference to the neck of the bottle that the upper end of the ring shall project above the upper extremity of the neck of the bottle, as clearly shown at Fig. 1. When the ring has been thus located under the conditions stated, pressure is exerted and a perfect weld ensues, and it thus becomes impossible to separate the metal ring from the glass.

The hat-shaped rings or tubes 2 are punched out from sheet-steel of suitable thickness in the usual manner of forming such a device, and when made of such material the heat contained in the semiplastic glass is sufficient to thoroughly heat the metal ring or tube without producing ferrous oxid, and consequently a perfect welded union is made between the glass and the ring or tube.

It will of course be understood that while I have shown the hat-shaped ring or tube 2 as being welded to the outside of the neck 1 of the bottle its diameter may be reduced proportionately and the portion of smaller diameter welded to the inside surface of the neck of the bottle, and it will likewise be obvious that while in the case where it is welded to the outside surface of the bottle it may, if so desired, be of uniform diameter through-

out its entire extent, in which case the sealing devices will be confined between the upper extremity of the neck of the bottle and the inwardly and downwardly turned projecting portion of the ring or tube.

When the sealing-disk 3 is constructed as described, it not only serves to make a tight joint when subjected to the pressure exerted by the crimped or clamped portion of the metal ring or tube 2, but it likewise serves to strengthen the aluminium disk 4, and being constituted of paper and paraffin it also acts as a repellant to the attack of any and all germ life and prevents the possibility of any oxidizing effect the contained liquor might otherwise have upon the aluminium disk 4 at the locality indicated at 5, Fig. 3.

While it is believed that from the construction shown and described a sufficiently air, gas, and liquid tight sealing-joint will be effected, I may nevertheless and as an extra precaution solder the intumed edge of the ring or tube 2 to the upper surface of the aluminium disk 4. When the ring or tube has been thus permanently attached to the neck of the bottle, the upper portion of the ring or tube 2, extending above the terminus of the bottle-neck, constitutes a continuous circumferential flange rising from a horizontal shoulder, as clearly shown in Figs. 1 to 4 of the drawings.

The aluminium disk 4 is preferably of dish shape, and the disk 3 is preferably of similar shape and is placed with the latter on the under side upon the terminus of the neck of the bottle and with their outer portion resting upon the same and the horizontal shoulder between the two different diameters of the hat-shaped ring or tube 2.

After a bottle has been filled and the aluminium and paraffined-paper disks have been placed in the position described by means of a suitable tool or press the circumferential flange or upwardly-projecting portion of the ring or tube is forced inward and downward, as shown in Fig. 2, tightly confining the aluminium and paper disks in air, gas, and liquid tight contact with the end of the neck of the bottle. The closing-disks 3 and 4 are preferably made of the dish-shape form shown at Fig. 1 in order that the central inverted crown may constitute a resistant to any internal pressure exerted against it by the contents of the bottle, and the outer reversely-curved portions of the disks when subjected to the action of the sealing tool or press, and are thus flattened down, produce a stretching action radially and insures a tight contact between them and the metal ring or tube.

In the modification shown at Figs. 3 and 4 are shown means which, if necessary, may be adopted for insuring absolutely closed relation between the disks 3 and 4 and the upper edge of the neck of the bottle. In Fig. 3 the

upper edge of the neck of the bottle is slightly curved or depressed, and the sealing tool or press is of such a character as to force the flange of the ring or tube 2 and the outer portions of the disks 3 and 4 downwardly in the depression in the upper edge of the neck of the bottle. In Fig. 4 the neck of the bottle is shown in the same form as is shown in Figs. 1 and 2, and the disks 3 and 4 are crimped between the flange and horizontal shoulder of the ring or tube in an obvious manner.

The physical properties and characteristics of the sheet-steel rings or tubes 2 are such that while the projecting flange may be readily crimped or turned down to the position to hold the closure device in proper position it will be impossible to return such flange portion to a position to admit of the removal of the closure devices without the rupture and destruction of the ring or tube. When a filled bottle has thus been closed, its contents can only be removed by either cutting out the sealing-disks with a suitable and simple tool made for that purpose or by breaking the flanged portion of the ring or tube 2 off with a tool or implement adapted for such purpose. In either case it will be readily seen that the original closure of the bottle has been permanently destroyed, and although the bottle may be refilled it cannot be closed and sold as an original package. Consequently the original proprietor or manufacturer of the contents of the bottle as well as the general purchasing public are fully protected against the fraudulent action of any intermediary.

While I have shown the steel ring or tube of hat shape and prefer this form in order that the closure devices, such as the disks 3 and 4, may have a bearing both upon the upper extremity of the neck of the bottle and the horizontal shoulder of the steel ring or tube, it will of course be understood that I do not wish to be limited to any exact form of such ring or tubes, provided it is so formed as that the projecting portion may be turned down to confine and hold closure devices in position and is permanently welded to the neck of the bottle, and although I have found that sheet-steel is especially adapted for use in carrying out my invention I desire it to be understood that my invention is not limited in this respect, but that I may employ any other metal for this purpose which may have the properties and characteristics which will permit of its becoming welded to the glass neck of the bottle and which after the projecting portion has been turned down upon the closure device cannot be returned to release the same without destruction of the original integrity of the metal composing the ring or tube and giving evidence of the fact.

While I have shown and described my improved and preferable means for constituting a closure of the bottle as consisting of the

aluminium and flexible disks confined and held in place by the crimped or turned-down flange of the hat-shaped ring or tube welded to the neck of the bottle and have found that such closure devices are preferable to the ordinary cork closures, either alone or in conjunction with metal caps of any of the usual forms, I of course do not wish it to be understood that my invention is to be limited to the use of closures of any particular style or material, the genus of my invention resting in the broad idea of providing the neck of the bottle with a metal ring or tube having a projecting flange adapted to be crimped or turned down to permanently secure in place suitable sealing devices, said ring or tube being welded to the neck of the bottle and confining the sealing device in such manner that it becomes necessary to permanently destroy either the sealing devices or the ring or tube, or both, in order to remove the contents of the bottle.

I have illustrated and described an ordinary glass bottle involving the genus and details of my invention; but I wish it to be distinctly understood that my invention is not limited to any particular design or shape of the vessel, so long as the orifice through which the contents may be removed is surrounded by a steel or other similar metal device permanently located in place by a welded union with the glass and adapted to be crimped, clamped, or otherwise securely connected to a sealing-stopper located within or over the exit-orifice of the vessel.

While I have found that when the projecting portion of the metal ring or clamping device is permanently crimped or clamped upon the disk seals or stoppers that a substantially perfectly air, gas, and liquid tight joint is effected, still, and as heretofore stated; a joint of this kind may be absolutely produced by soldering the inner edge of the metal ring or tube to the upper surface of the aluminium disk.

Having described the construction and advantages of my improved bottle and the method of manufacturing the same, what I claim as new, and desire to secure by Letters Patent, is—

1. A closure for glass bottles or other glass vessels, consisting of a metal body welded to the glass vessel and with a projecting portion surrounding the exit-orifice of the vessel and adapted to be crimped, clamped or otherwise secured upon a sealing device located over the exit-orifice; and a sealing device located over the exit of the vessel and held in position by the projecting portion of the metal body after it has been crimped, clamped or otherwise secured upon the sealing device, whereby the said vessel when emptied of its contents, cannot be refilled and sold as an original package, as heretofore set forth.

2. A closure for glass bottles or other glass

vessels consisting of a metal ring or tube welded to the glass with a portion extending beyond and surrounding the exit of the vessel, and adapted to be turned downwardly upon a seal or stopper; a seal or stopper located over the exit of the vessel and held in place by the metal ring or tube when the projecting portion thereof has been turned downward and a film of solder at the juncture of the metal ring or tube and the seal or stopper, whereby the contents of the vessel are hermetically sealed through the medium of the welded joint between the metal and the glass, and the solder-joint between the metal ring or tube and the seal or stopper, substantially as hereinbefore set forth.

3. A bottle composed of glass having a tube of sheet-steel welded to the neck thereof and extending a suitable distance above the upper extremity thereof, such projecting portion adapted to be turned down upon, and to secure in position, a closure device located upon the upper extremity of the bottle-neck, substantially as and for the purpose set forth.

4. A bottle composed of glass, having a sheet-metal ring or tube of different diameter at opposite ends and with an intermediate shoulder, said tube welded to the bottle-neck, and projecting above the upper terminus of said neck a sufficient distance to constitute a surrounding flange adapted to be turned down upon and to securely confine a closure device located upon the upper extremity of the bottle, substantially as and for the purpose set forth.

5. A bottle composed of glass and having welded to the neck thereof, a steel ring or tube projecting a suitable distance above the

upper terminus thereof and adapted to be turned inwardly and downwardly, in combination with one or more disk-closure devices located upon the upper extremity of the neck of the bottle and held in such position to seal the contents of the bottle by the inwardly and downwardly turned portion of the steel ring or tube, substantially as and for the purpose set forth.

6. A bottle composed of glass and having welded to the neck thereof a steel ring or tube with a portion extending above the upper extremity of the neck of the bottle and turned downwardly upon a seal or stopper; and a seal or stopper consisting of suitable material and of reversely-curved dish form confined and held in place, substantially as hereinbefore set forth.

7. The method herein described of securing a metallic ring or tube to the upper portion of a glass vessel, which consists in heating the upper portion of the vessel to a viscid and compressible condition, then forcing the metallic ring into close contact with the glass to exclude the air at such contact locality and with a portion of the ring or tube extending beyond the extremity of the vessel and finally exerting pressure to cause suitable welding contact between the metallic ring or tube and the glass, substantially as hereinbefore set forth.

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

JAMES C. ANDERSON.

Witnesses:

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JNO. J. HARROWER.