

No. 711,146.

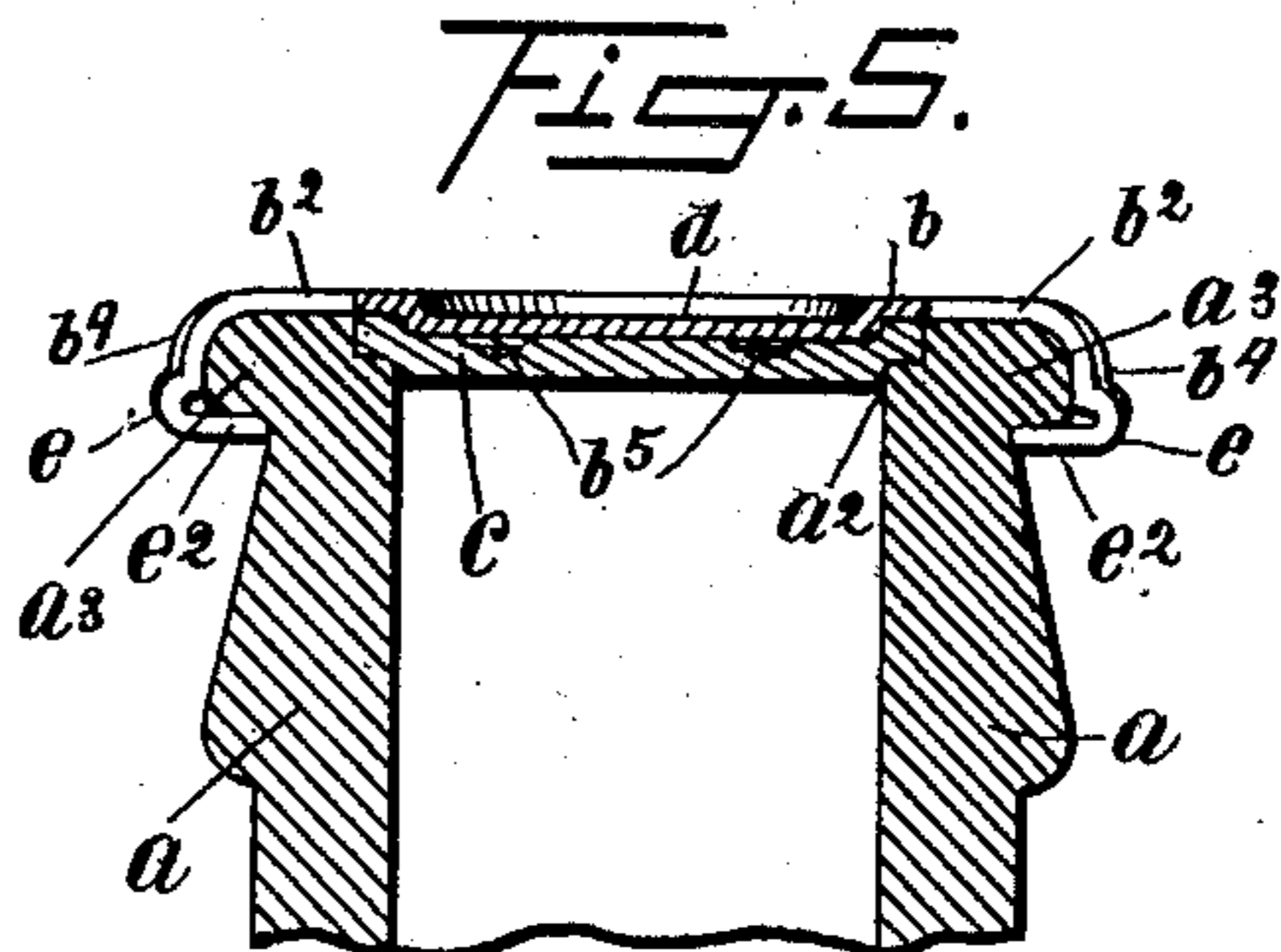
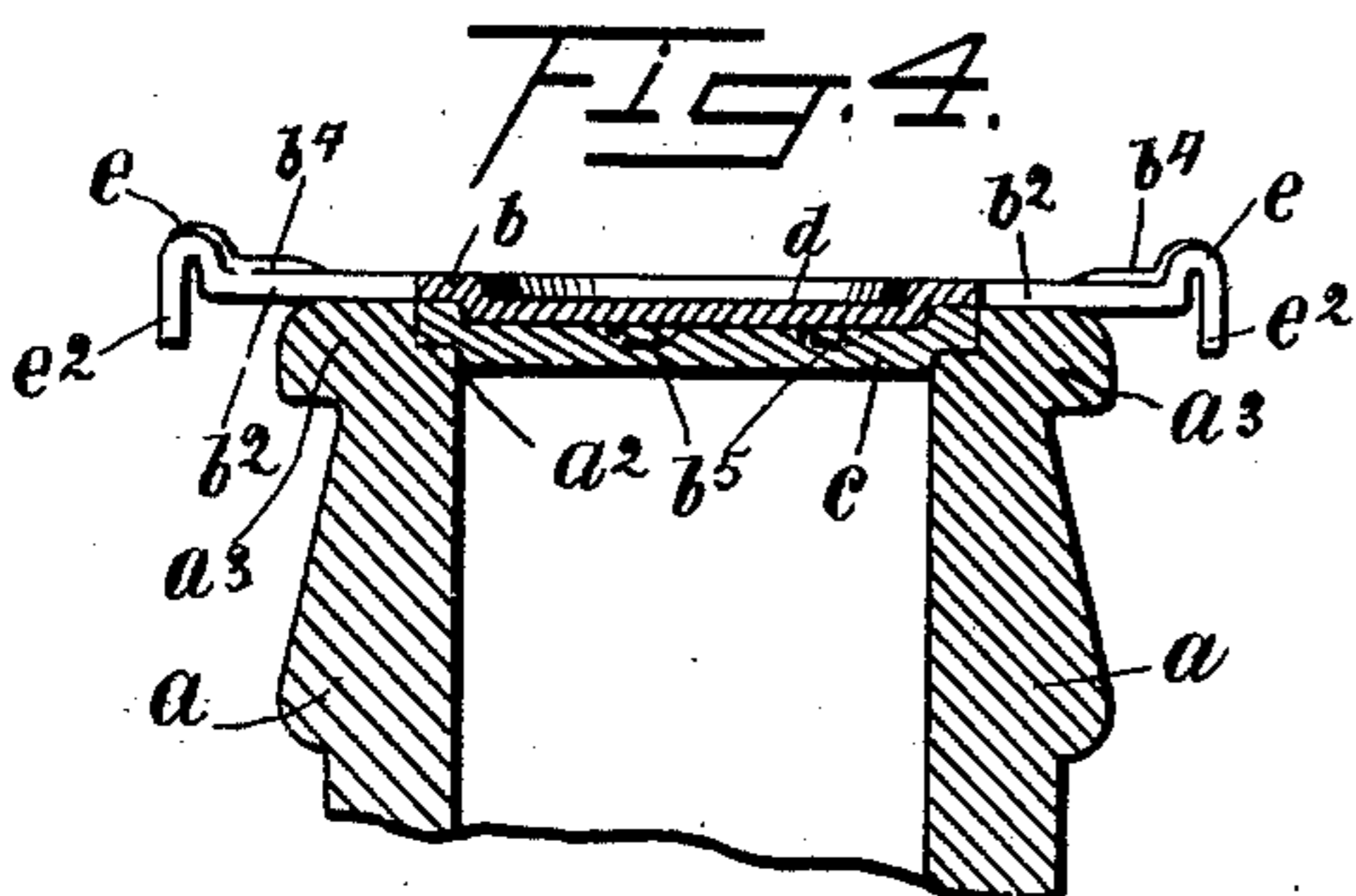
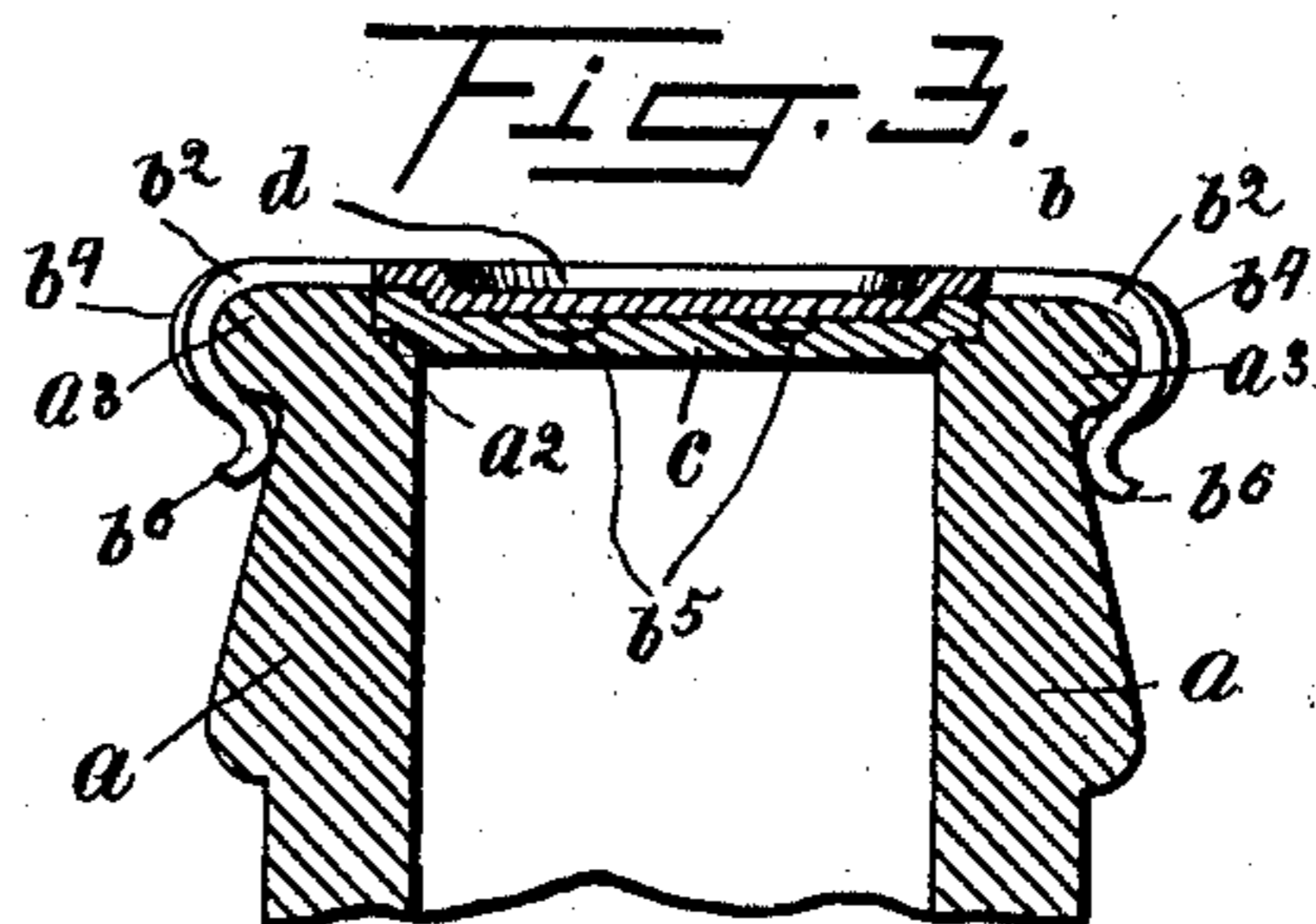
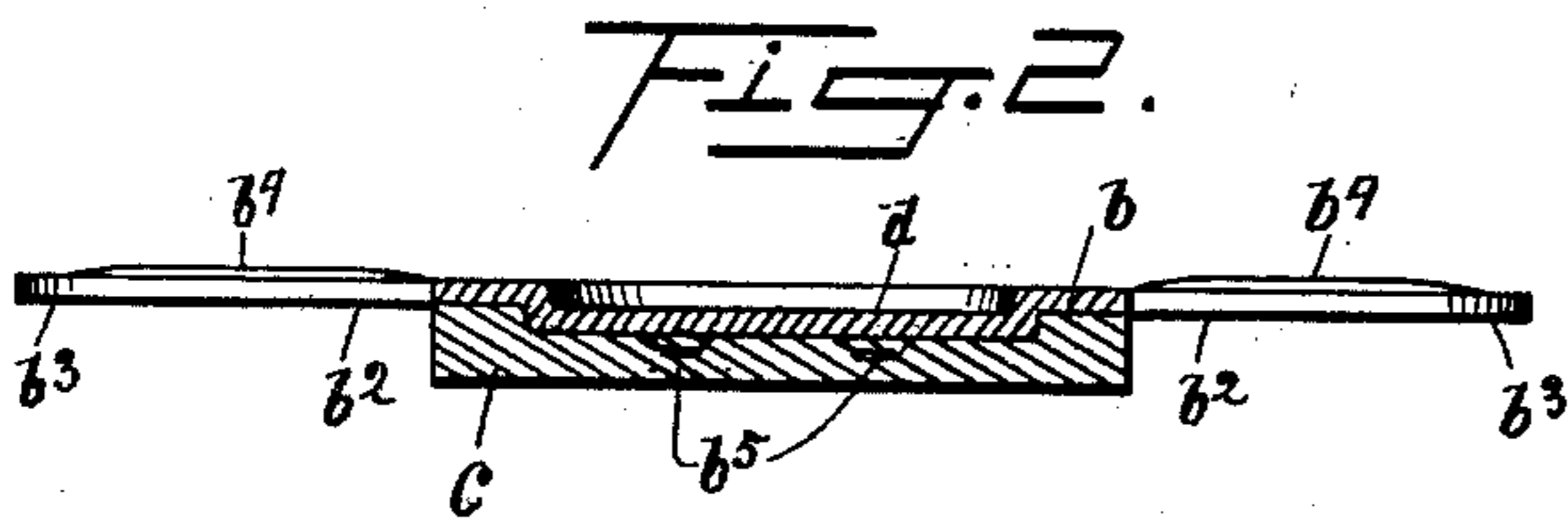
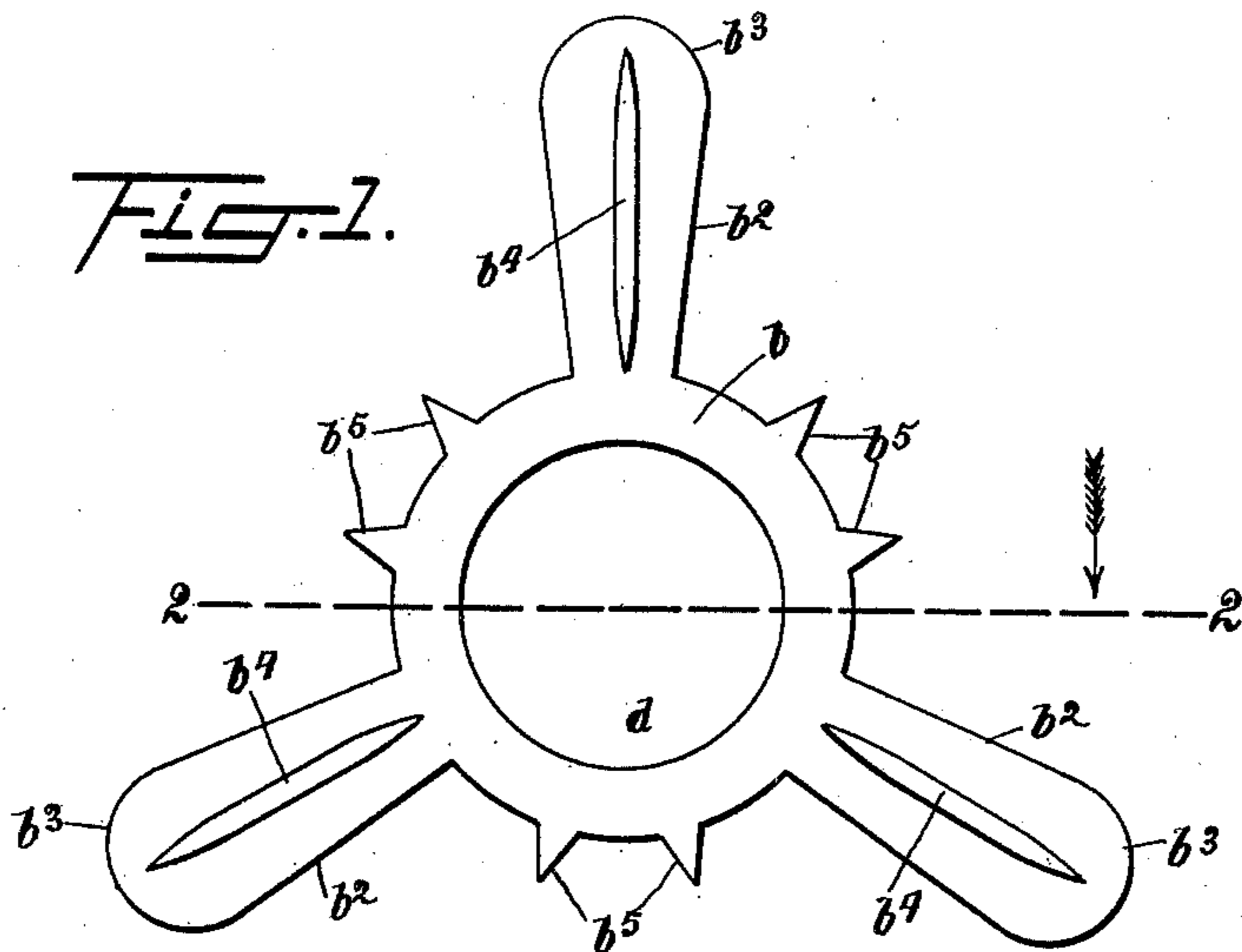
Patented Oct. 14, 1902.

R. B. YERBY.

CLOSURE DEVICE FOR BOTTLES OR SIMILAR VESSELS.

(Application filed Dec. 30, 1901.)

(No Model.)



WITNESSES

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CLOSURE DEVICE FOR BOTTLES OR SIMILAR VESSELS.

SPECIFICATION forming part of Letters Patent No. 711,146, dated October 14, 1902.

Application filed December 30, 1901. Serial No. 87,680. (No model.)

To all whom it may concern:

Be it known that I, ROSS B. YERBY, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Closure Devices for Bottles or Similar Vessels, of which the following is a full and complete specification, such as will enable those skilled in the art to which it ap-
10 pertains to make and use the same.

The object of this invention is to provide improved means for closing a jug, bottle, jar, or similar vessel, by means of which such vessel may be securely closed when filled and
15 quickly and easily opened whenever desired by hand without the use of any tool or instrument, a further object being to provide an improved closure device for vessels of the class specified which are designed to hold
20 beer, ale, or other gaseous liquids; and with these and other objects in view the invention consists in a closure device for bottles and similar vessels constructed as hereinafter described and claimed.

In the drawings forming part of this specification, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, Figure 1 is a plan view of a blank from which my
30 improved closure device for bottles or similar vessels is made; Fig. 2, a transverse section thereof and showing a packing connected with the bottom of the central portion thereof; Fig. 3, a transverse section of the upper part
35 of the neck of a bottle, showing the method of closing the same by my improved closure device. Figs. 4 and 5 are sectional views similar to Fig. 3, showing a slight modification in the application of the closure device,
40 Fig. 4 showing the closure device in position before it is secured to a bottle or in the neck thereof and Fig. 5 showing the neck of a bottle closed, as in Fig. 3.

In the drawings forming part of this specification, reference being made to Figs. 3, 4, and 5, I have shown at a the neck of a bottle, and this neck is provided in the top thereof with an annular space or groove a^2 and with an outer side annular bead a^3 , and in the prac-
50 tice of my invention I provide a closure device comprising a disk b , composed of tin or other suitable flexible and pliable material,

said disk being provided at the top thereof with projecting members b^2 , which in the form of construction shown in the drawings
55 are oblong in form and constitute radial fingers, which are preferably round or segmental at their outer ends, as shown at b^3 , and said radial fingers are provided with longitudinal ribs b^4 , which are stamped therein and which
60 give strength and requisite stiffening thereto, while at the same time permitting said fingers to be bent, as hereinafter described, in the operation of closing the bottle or other vessel. The disk b is also provided with a central cir-
65 cular depression d of a diameter equal to that of the annular space or groove a^2 in the neck of the bottle, and said disk is also provided with radial teeth b^5 , any desired number of which may be employed, and these teeth are
70 designed for use in securing a packing disk or pad c to the bottom of the disk b , said packing disk or pad being composed of cork or any other suitable material and being also of a diameter substantially equal or a
75 little greater than that of the groove a^2 .

In closing a bottle or similar vessel by means of this device the under part of the disk b is placed on the neck of a bottle or vessel, and a suitable machine is employed for the pur-
80 pose of forcing down the central portion thereof into the neck of the bottle, as shown at d in Fig. 3, and the packing disk or pad c is preferably of such diameter as to closely fit within the annular space or groove a^2 , and
85 at the same time the radial fingers or members b^2 are curved and pressed inwardly at their ends, so as to clasp and securely hold the annular bead a^3 , and the extreme ends of
90 said fingers or members b^2 are curved outwardly, as shown at b^6 , and all that is necessary to open the bottle is to catch hold of the ends of said fingers or members and pull out-
wardly thereon, so as to release the same from the annular bead a^3 . It will be observed,
95 however, that in applying the disk b to the bottle the sealing medium or pad c is in the form shown in Fig. 2 and is not expanded into engagement with the seat or shoulder a^2 until pressure is applied to the disk b . This
100 expansion of the pad c is caused by the depression d exerting a pressure upon the pad c sufficient to not only hold the same firmly upon the corner of said seat or shoulder, but

such pressure also forces the edges of the pad into intimate contact with the mouth of the bottle or in a radial direction, and thereby effectually closes the mouth, as clearly shown in Figs. 3, 4, and 5.

The pressing or crimping of the fingers or members b^2 around the annular bead a^3 form clamps, which will securely hold the closure device in position under all ordinary circumstances, and the ribs b^4 , as hereinbefore stated, give strength and stiffness to said clamps and facilitate the operation thereof, as will be readily understood.

The construction shown in Figs. 4 and 5 differs from that shown in Fig. 3 only in the form of the clamps formed from the fingers or members b^2 , and in this construction the said fingers or members are first bent at the ends thereof to form upwardly-directed loop-shaped portions e , having downwardly-directed fingers or hook portions e^2 , and the method of closing a bottle or other vessel in this instance is the same as hereinbefore described with reference to Fig. 3, the only difference being that the fingers or members b^2 are clamped around the bead a^3 , so that the hooks or projections e^2 fit under said bead, and in the operation of opening the bottle or other vessel all that is necessary is to press upwardly and outwardly on the loop-shaped portion e .

It will be understood that the radial fingers or members b^2 of the disk b and the clamps formed therefrom in bending said fingers or members around the bead a^3 are non-elastic and that the clamps thus formed remain securely in place and can only be detached from said bead by pulling or bending the same outwardly, as hereinbefore described.

When the central portion of the disk b and the cork or other packing is forced downwardly into the neck of the bottle, the said cork or other packing is depressed and the body portion thereof is forced below the annular shoulder at the bottom of the annular groove or space a^2 , as clearly shown, and this operation and position of the parts produces a complete and effective closure for a bottle or other vessel and prevents the escape therefrom of gases or liquids.

The disk b is of a diameter no greater and preferably less than the outside diameter of the mouth of the neck of the bottle or other vessel which it is desired to close, and by means of this construction it is necessary to bend or crimp around the annular flange at the top of said neck only the radial fingers or other members b^2 , and by reason of this fact the bottle or other vessel may be conveniently and easily opened by hand, all that is necessary being to pull one of said clamps or crimped fingers or members outwardly. This closure device is simple in construction and operation, and by means thereof a bottle or

other vessel of the class described may be securely closed and will remain closed under all conditions until it is desired to open the same, and the opening thereof may be accomplished without the use of any tool or instrument, and the disk b may be made of any desired material.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A bottle or other vessel the neck of which is provided at the top with an outer annular bead and an inner annular groove or space below the top of the neck forming a seat, and a closure device comprising a disk, a sealing medium carried by said disk, the latter being provided with means for expanding the sealing medium into engagement with said seat, and radial fingers carried by said disk and adapted to be clamped around said bead.

2. A bottle or other vessel the neck of which is provided at the top with an outer annular bead and an inner annular groove or space below the top of the neck forming a seat, and a closure device comprising a disk, a sealing medium carried by said disk, the latter being provided with means for expanding the sealing medium into engagement with said seat, and radial fingers carried by said disk and adapted to be clamped around said bead, said fingers being provided with longitudinal strengthening-ribs.

3. A bottle or other vessel the neck of which is provided at the top with an outer annular bead and an inner annular groove or space below the top of the neck forming a seat, and a closure device comprising a disk, a sealing medium carried by said disk, the latter being provided with a depression adapted to expand the sealing medium into engagement with said seat, and radial fingers carried by said disk and adapted to be clamped around said bead.

4. A bottle or other vessel the neck of which is provided at the top with an outer annular bead and an inner annular groove or space below the top of the neck forming a seat, and a closure device comprising a disk the diameter of which is no greater than the outside diameter of the mouth of the neck of the bottle, a sealing medium carried by said disk, the latter being provided with a depression adapted to expand the sealing medium into engagement with said seat, and radial fingers carried by said disk and adapted to be clamped around said bead.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 27th day of December, 1901.

ROSS B. YERBY.

Witnesses:

L. A. STEWART,

C. E. MULREANY.