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PATENTED JUNE 27, 1905.

F. B. THATCHER.

CLOSURE FOR SEALING BOTTLES OR SIMILAR ARTICLES.

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Fig. 1.

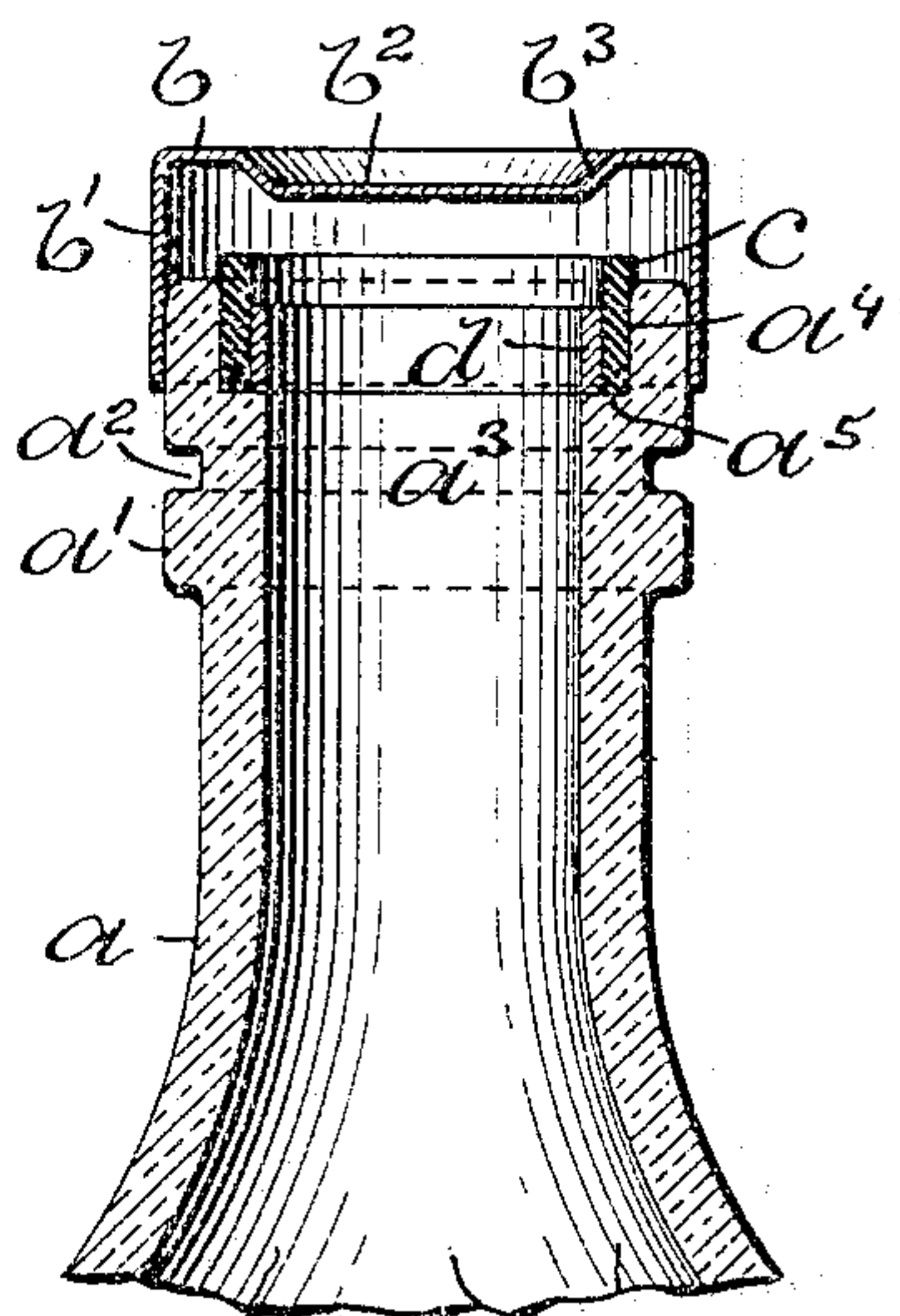
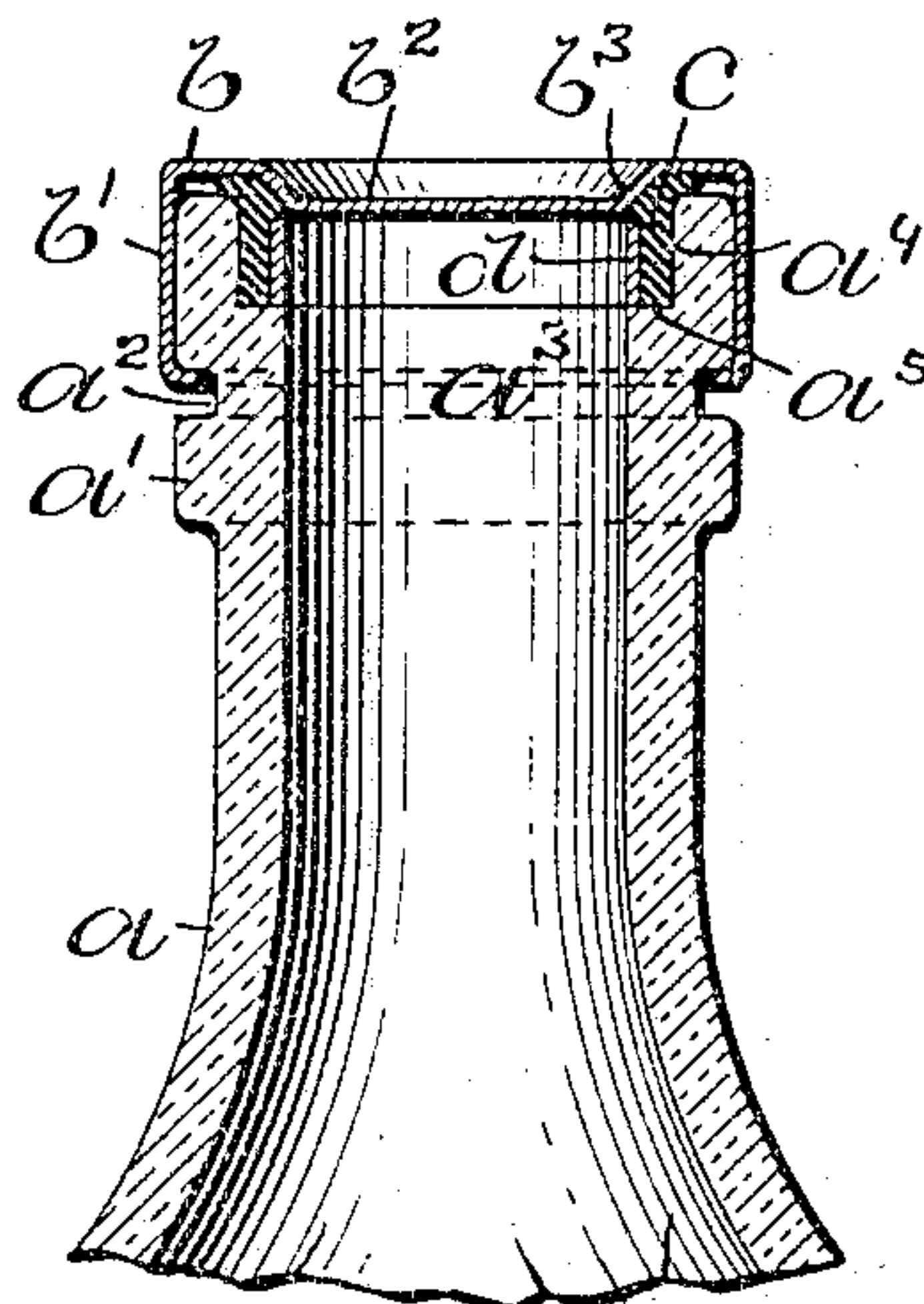
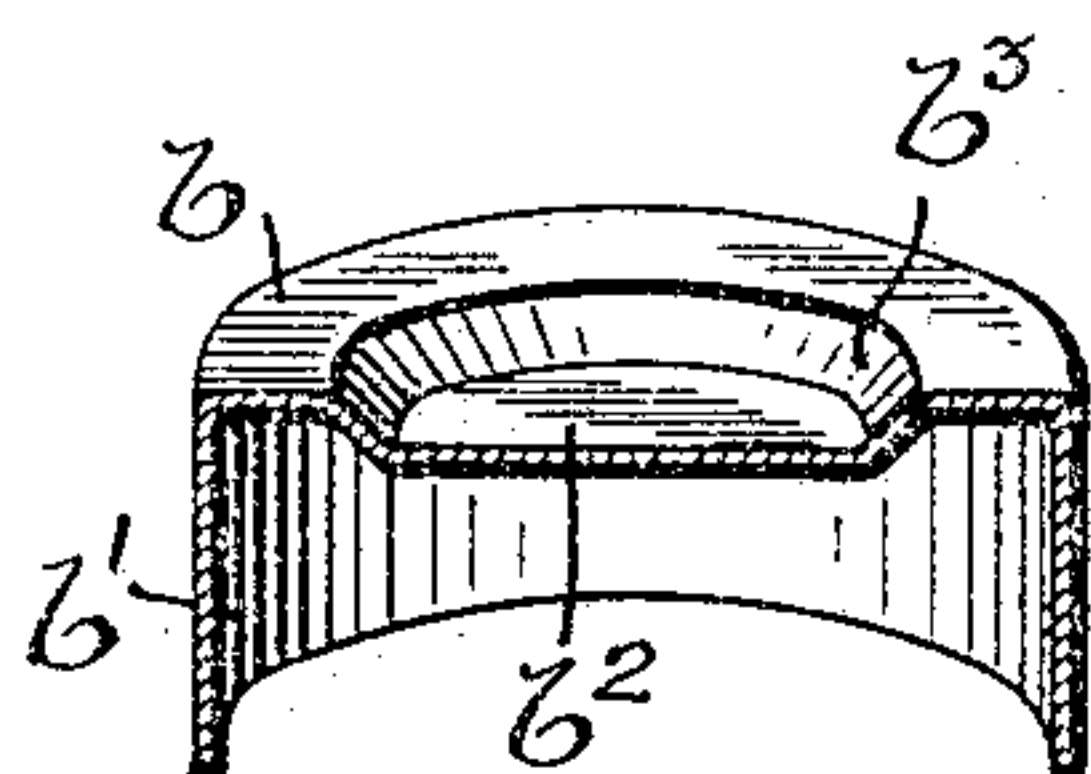


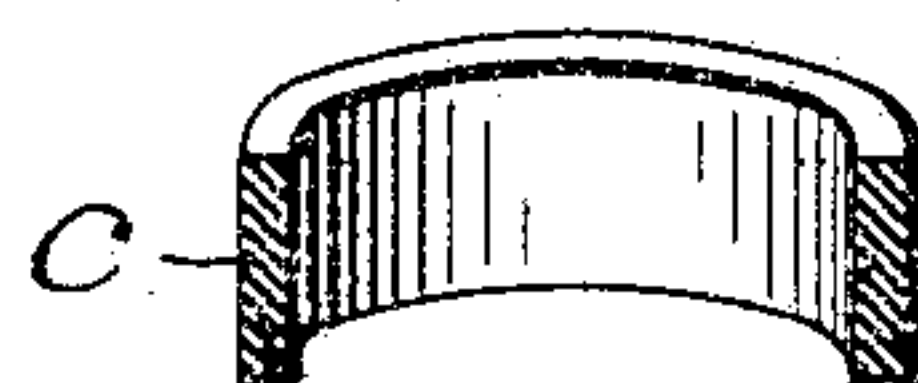
Fig. 2.



III. 3.



III-4.



III. 5.



WITNESSES:

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CLOSURE FOR SEALING BOTTLES OR SIMILAR ARTICLES.

SPECIFICATION forming part of Letters Patent No. 793,330, dated June 27, 1905.

Application filed March 9, 1904. Serial No. 197,334.

To all whom it may concern:

Be it known that I, FREDERICK B. THATCHER, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Closures for Sealing Bottles or Similar Articles, of which the following is a specification.

This invention has reference to an improvement in closures for sealing the mouths of bottles, jars, or similar articles.

In sealing the mouths of glass bottles or jars with metallic closures or caps it is essential to use some form of elastic sealing medium suitable for the purpose between the glass and the metallic cap in order to make the closure tight and prevent the escape of the internal pressure or contents. As heretofore constructed rubber rings were placed in grooves or on ledges on the outer circumference of the mouth between the cap and the bottle. In practice this has been found detrimental, as the internal pressure caused the rubber rings to expand outward or away from the glass, with consequent leakage and loss of the contents.

The object of my invention is to seal the mouth of a bottle or jar more perfectly than has heretofore been done, and I accomplish this object by constructing the mouth of the bottle or jar with an outer annular groove and an inner annular recess forming a ledge adapted to hold a rubber ring reinforced by an inner metallic ring, a cap having a depressed top adapted to force the rubber ring against the face of the annular recess in the mouth and the end of the mouth, and securing the same by rolling the edge of the cap into the outer annular groove, thus preventing the internal pressure from displacing the rubber sealing-ring.

My invention consists in the peculiar and novel construction of a cap, a rubber ring reinforced by a metallic ring, and the mouth of a bottle or similar article, the whole being adapted to form a closure to seal the mouth of the bottle or similar article, as will be more fully set forth hereinafter.

Figure 1 is a vertical sectional view of the neck and mouth of a bottle, showing my im-

proved closure in the position of being applied to the mouth of the bottle. Fig. 2 is a view similar to Fig. 1, showing my improved closure in the applied or closed position. Fig. 3 is a sectional perspective view of the closure-cap, showing the depressed central portion in the top. Fig. 4 is a sectional perspective view of the closure compressible ring, and Fig. 5 is a sectional perspective view of the metallic reinforcing-ring for the compressible ring.

In the drawings, *a* indicates the neck of the bottle; *b*, the closure-cap; *c*, the compressible ring, and *d* the metallic reinforcing-ring. The neck *a* has the thickened upper end *a'*, shaped to form the outer annular groove *a''* and the mouth *a'''*, in which is the annular recess *a''''*, forming the interior ledge *a'''''*. The cap *c*, formed from sheet metal, has the downwardly-extending circular lip *b'* and the circular depressed portion *b''* in the top, having the outwardly-flaring side walls *b'''*, as shown in Fig. 3. The compressible ring *c* is made of rubber or other compressible material and is reinforced on its inner circumference by the metal ring *d*.

In the operation of sealing the mouth of the bottle the compressible ring *c*, reinforced on its inner circumference by the metal ring *d*, is placed in the annular recess *a''''* on the ledge *a'''''* in the mouth of the bottle. The cap *b* is now placed over the mouth of the bottle and forced downward by a suitable tool into the position shown in Fig. 2. The outwardly-flaring side walls *b'''* of the circular depressed portion *b''* in the top of the cap compresses the compressible ring *c*, forcing it against the inner face of the recess *a''''* and onto the edge of the mouth. The lip *b'* on the cap is now forced or rolled into the annular groove *a''*, securely fastening the cap to the bottle and sealing the bottle against internal force or pressure.

By the use of my improved closure for bottles or jars the interior pressure acts on the depressed portion *b''* of the cap, the metal ring *d*, and the compressible ring *c* and assists in forcing the compressible ring against the inner face of the annular recess *a''''* in the mouth of the bottle to more perfectly seal the bottle.

The sealing device, consisting of the compressible ring *c* and the metal ring *d*, may form a fixture of the bottle, which may be resealed indefinitely at a slight cost by renewing the caps *b*, which are easily removed when required by a tool furnished for that purpose.

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

1. In a closure for bottles or similar articles, the combination with the neck of a bottle, a compressible ring, and a reinforcing-ring supported in the neck of the bottle, of a cap adapted to compress the compressible ring against the mouth of the bottle, and means for securing the cap to the neck of the bottle, as described.

2. In a closure for bottles or similar articles, an internal ledge in the mouth of the bottle formed by an annular recess, a compressible ring, and a metallic reinforcing-ring supported on the ledge in the annular recess, of a metallic cap adapted to compress the compressible ring against the face of the ledge and the mouth, and means for securing the cap to the bottle, as described.

3. In a closure for bottles or similar articles, an internal ledge in the mouth of the bottle formed by an annular recess, a compressible ring, and a metallic reinforcing-ring supported on the ledge, a cap having a depressed

central portion with outwardly-flaring side walls, and means for securing the cap to the bottle, as described.

4. In a closure for bottles, the combination with the neck of the bottle, provided with an annular groove on its outer circumference, an internal ledge in the mouth of the bottle formed by an annular recess, a compressible ring, and a metallic reinforcing-ring supported on the ledge in the annular recess, of a metallic cap having a depressed central portion with outwardly-flaring side walls and adapted to be secured to the bottle, as described.

5. In a closure for sealing the mouth of bottles, the combination with a neck *a* of the bottle having a thickened end *a'* formed with an outer annular groove *a''* and a mouth *a'''* having an annular recess *a''''* forming a ledge *a'''''*, of a metal cap *b* having a circular lip *b'* and a circular depressed portion *b''* with an outwardly-flaring side walls *b'''*, a compressible ring *c*, and a metal ring *d*, all for the purpose as shown and described.

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

FREDERICK B. THATCHER.

Witnesses:

ADA E. HAGERTY,

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