No. 822,099. PATENTED MAY 29, 1906.

C. P. BYRNES.

BOTTLE CAP.

APPLICATION FILED MAR. 12, 1906.

Fig. 1.

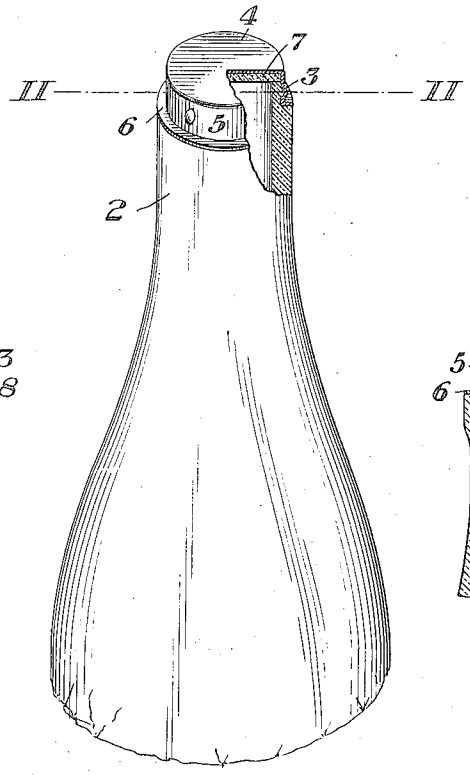


Fig. 3.

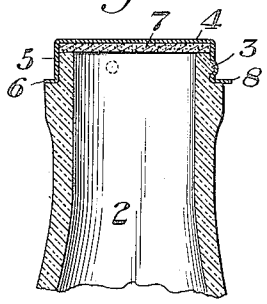


Fig. 4.

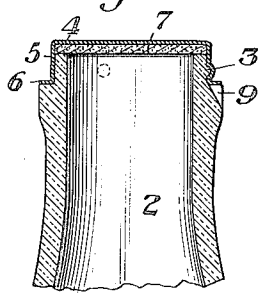
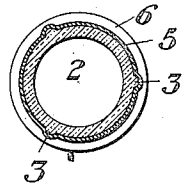


Fig. 2.



WITNESSES

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BOTTLE-CAP.

No. 822,099. Specification of Letters Patent. Patented May 29, 1906.

Application filed March 12, 1906. Serial No. 305,469.

To all whom it may concern:

Be it known that I, CLARENCE P. BYRNES, of Sewickley, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Bottle-Cap, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a partial broken perspective view showing the cap in position. Fig. 2 is a cross-section on the line II II of Fig. 1, and Figs. 3 and 4 are partial vertical sections showing modified forms.

The object of the invention is to provide a simple, cheap, and effective cap-closure for bottles which will avoid crimping or corrugating the wall of the cap. It is also designed to do away with the operation of bending or spinning the metal wall of the cap inwardly under a shoulder or shoulders on the bottle-mouth.

In the drawings, 2 represents a bottle-neck having its external wall reduced in diameter in its upper end portion to form an annular external shoulder.

The outer surface of the neck or mouth above this shoulder is provided with small projecting bosses or protuberances 3. These may be of any desired shape or number and are preferably located at an intermediate point of the height above the shoulder.

The metal cap 4, which may be of ordinary tin-plate or other metal, is provided with a depending rim portion 5, the internal diameter of which is less than the external diameter of the reduced neck portion plus one or more of the protuberances. The internal diameter of the cap is preferably about the same as the external diameter of the reduced neck, and I preferably employ an outwardly-projecting flange 6 at the lower edge of the rim portion.

In applying the cap it is provided with a disk 7, of cork or suitable yielding material, if desired, and the cap is forced down over the mouth into the position shown. As the parts of the cap-wall are forced over the protuberances the flanged portion at such points will straighten out partially and the protuberance will form a ridge in the side wall. As the flange strikes the shoulder on the outer part of the neck, this shoulder will act to restore the flange to its original angular position and in so doing will press the cap-shoulder between the cap-flange and the cap-wall back under the protuberances, thus acting to clench the cap in place. At the same time the wall of the cap will contract under the protuberance, and thus lock the cap in place.

The cap may be removed by the loop-opener of the ordinary type, or I may provide a special device to assist in opening. Thus in Fig. 3 I show the flange as provided with a projecting lip portion 8 on one side, which may be engaged to force off the cap. In Fig. 4 I show the bottle-neck as having a groove or recess 9 extending through the thickened portion to the shoulder. The flange of the cap may be bent down into this recess or not, as desired.

The advantages of my invention result from the simplicity and cheapness of the cap and the method of locking. No crimping or beading in of the cap-wall is necessary, as it is simply forced on and will lock itself under the protuberance or protuberances.

While I prefer to employ the flange on the cap in conjunction with the external coöperating shoulder on the bottle-neck, the cap may be locked simply by contraction of its wall under the protuberance or protuberances.

Other changes may be made in the form and arrangement of the neck and cap without departing from my invention.

I claim—

1. A bottle or jar having a glass neck with one or more separated protuberances projecting laterally for part of its circumference, and a cap having a plain wall of a diameter normally smaller than the neck plus the protuberance, forced over the neck and locked by contraction of the metal under the protuberance; substantially as described.

2. A bottle or jar having a neck with a projecting protuberance or protuberances, and a metal cap having a plain wall forced upon the neck and locked by engagement of the metal under the protuberance or protuberances, said neck having a sharp shoulder arranged to cover and protect the edge portion of the metal cap; substantially as described.

3. A bottle having an external shoulder, and a protuberance above the shoulder, and a cap having a plain wall and a lower flange, forced upon the neck and locked under the protuberance; the normal diameter of the cap being less than the neck plus the protuberance; substantially as described.

4. A bottle having a neck with an annular shoulder, and a protuberance above the

shoulder, and a cap having a plain wall and a lower flange, said cap being forced endwise upon the neck and locked under the protuberance.

5. A bottle or jar having a glass neck provided with a plurality of outwardly-projecting protuberances at separated points in its circumference, and a metal cap normally smaller than the neck plus the protuberance, forced over the neck and locked by engagement of the metal under the protuberances; substantially as described.

In testimony whereof I have hereunto set my hand.

C. P. BYRNES.

Witnesses:
GEO. B. BLEMING,
JOHN MILLER.