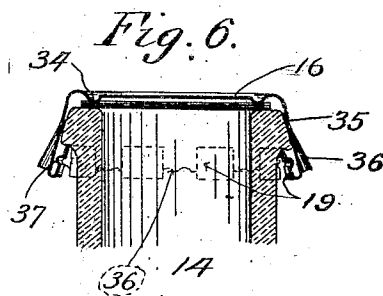
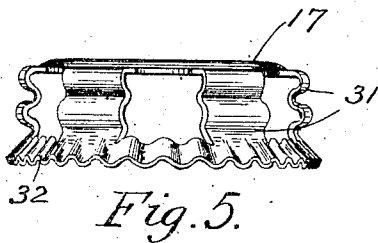
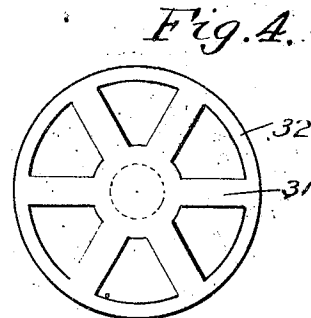
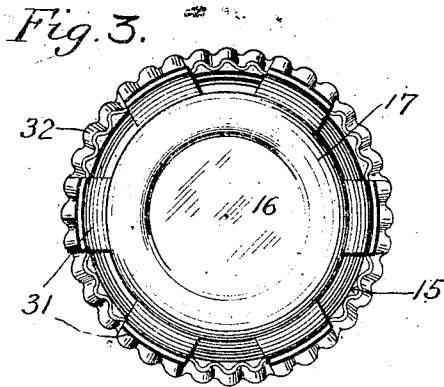
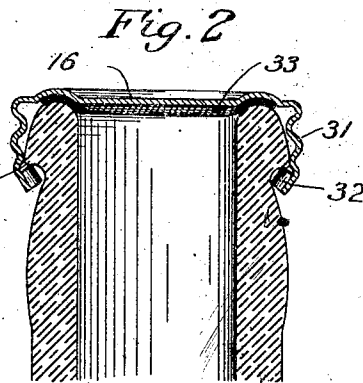
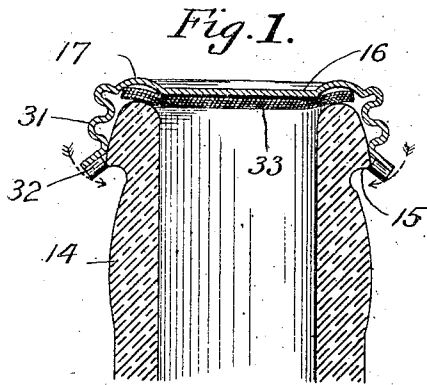


F. W. H. CLAY.
BOTTLE CLOSURE.
APPLICATION FILED JAN. 13, 1906.

938,825.

Patented Nov. 2, 1909.



WITNESSES

Harry L. Schuer
Archworth Martin

INVENTOR

Francis W. H. Clay
By Francis E. Gauthier
Att'y.

UNITED STATES PATENT OFFICE.

FRANCIS W. H. CLAY, OF PITTSBURG, PENNSYLVANIA.

BOTTLE-CLOSURE.

938,825.

Specification of Letters Patent.

Patented Nov. 2, 1909.

Application filed January 13, 1906. Serial No. 295,844.

To all whom it may concern:

Be it known that I, FRANCIS W. H. CLAY, a citizen of the United States, residing at Pittsburg, in the State of Pennsylvania, have invented certain new and useful Improvements in Bottle-Closures, of which the following is a specification.

My invention relates to metallic closing devices for bottles, jars and the like. Its principal objects are to avoid the necessity of resilient packing, to more easily apply and secure such closures, to make a closing cap that may be used over and over, and to generally improve the efficiency of bottle closures.

More specifically, the object is also to provide leverage devices by which an elastic pressure may be induced on the cover of the bottle, and to enable the closure to readily adjust itself to irregularities in the form of the bottle head.

These objects and other advantages to appear hereinafter, I attain by the structure and operation shown in several forms in the accompanying drawings forming part of this specification, and wherein—

Figure 1 is a central vertical section through an ordinary bottle head and one form of the closing cap placed thereon but not yet secured in place, and Fig. 2 is the same section, with the closure secured. Fig. 3 is a top plan of the cap in the condition of Fig. 1. Fig. 4 shows a form of blank, and Fig. 5 is a side elevation of the cap made herefrom. Fig. 6 shows an alternative form for otherwise making the resilient vertical pressure.

Instead of relying upon the resiliency of a packing, such as cork or rubber, the stopper here shown is held down resiliently by distortion of the metal of which the cap is made, being a self-induced elastic pressure. The packing is only used to cover unevenness in the bottle and cap and need not be resilient. Moreover the elastic pressure maintained by the cap upon the packing is originally induced by a leverage device attached to the covering plate and engaging the anchorage ledge of the bottle to strain the holding members out of original position. Thus in the form shown it will be seen that the bottle head 14 has an anchorage ledge 15 and the cap comprises a cover 16 having depending spring legs 31 connected together at bottoms by a corrugated ring 32. Origin-

nally the cap is in the form shown in Figs. 1, 3 and 5 and it is placed on the bottle with a packing disk preferably paraffined paper, 33. The inwardly bent edges of the ring 32 snap under the ledge 15 whereupon a tool is applied which will push downward and inward the outer edges of ring 32, placing it in the position shown in Fig. 2. This by leverage action of the ring 32 draws down the cap stretching arms 31 and compressing the packing over the mouth of the bottle.

It will be evident that in the operation of placing the stopper the ring 32 can conform itself to any irregularity in the size or shape of the head or ledge; and also that the cover is held down resiliently at various places around its periphery, so that the top of the bottle does not require to be even. The stopper in fact can conform to any size or shape of head and can be used on any bottle which has a ledge to engage the ring 32. The stopper is opened by prying loose the ring 32 with any convenient tool such as a key or ice pick or knife edge, or the ordinary opening tools found on the market can be used. It is to be noted that all the space outside the packing disk is open for quick drying of the liquid which will prevent rust and make a very sanitary stopper.

In Fig. 6 is shown a modification in which the covering disk 16 has a downward indented rib 34 which may engage the packing disk on a sharp point. The downward flange 35 is continuous in this instance to near the bottom of the corrugations therein and the separate legs 19 are turned upward to act as levers engaging by their ends on the ledge of the bottle head. These arms may have corrugations 37 for additional resiliency. This stopper is applied by pressing down the corrugations 36, which will compress them and force the lower ends of the arms 19 inward so as to draw down the cover 16 and hold it under resilient pressure. The advantages of the device will be readily apparent to those familiar with the art.

Having thus described my invention and illustrated its use, what I claim and desire to secure by Letters Patent, is the following:

1. A bottle closure comprising a cover, attached arms embracing the bottle head, members integral with the arms and angularly disposed in position to engage under the ledge of the bottle head, parts of said en-

gaging members being arches of metal adapted to retain the engagement by bending the arches, substantially as described.

2. The combination with a bottle having
5 an outside annular ledge, of a closure comprising a cover, members embracing the head, and an integral part of said embracing members standing at an inclination and adapted to engage the ledge on the edge of
10 the metal, said engaging parts being composed of arches of metal, whereby bending said arches may retain the engaging members permanently in engaging position, substantially as described.

15 3. In a bottle closure the combination of a cover for the bottle mouth, means to engage the bottle head, and an elastic connecting part between the cover and engaging means, adapted to be stretched by the latter as it is
20 moved to its final position.

4. In a bottle closure the combination of a cover having elastic legs and means on the legs to simultaneously engage the head of the bottle and to place the said legs under
25 tension to draw the cover down on the bottle.

5. In a bottle closure the combination of a cover having elastic legs and a connected lever ring on the legs adapted to engage the bottle head and place the legs under tension.

30 6. A bottle closure comprising a cover for the mouth, depending elastic legs thereon, and an inclined conical lever ring on said legs adapted to engage the bottle head and disposed so as to draw down the cover as its
35 inclination is forcibly altered, substantially as described.

7. The combination with a bottle head having an anchorage ledge, of a cover with attached elastic arms, and a flared expansi-

ble ring attached to the arms, said ring engaging the ledge and adapted when its outer edge is compressed to act as a lever to pull down the arms and cover on the bottle.

8. In a bottle closure the combination with a bottle head having an anchorage ledge, of
45 a cover with resilient means to hold it down and a conical ring engaging the ledge and connected to the holding means and adapted to place the latter under stress as the ring is fulcrumed and turned against the ledge.

9. A bottle closure comprising a cover and an attached expansible ring of general conical form adapted to engage the bottle as the fulcrum of a lever and draw down the
50 attached cover when the ring is distorted.

10. In a bottle closure, in combination with a bottle head having an anchorage ledge, a closing cap comprising a cover for the mouth, holding arms, and a lever member connected
55 to said arms, adapted to draw the cover down on the bottle by changing the angularity of the said lever member.

11. A bottle closure comprising a covering disk and an attached inclined flange, said flange being separated from the cover at
60 intervals and the separated portions being inwardly and downwardly arched in order to engage the bottle head and induce a lever action when the inclination of said arches is forcibly altered, whereby to induce a pres-
65 sure downward upon the said cover.

In testimony whereof I have hereunder signed my name, in the presence of the two subscribed witnesses.

FRANCIS W. H. CLAY.

Witnesses:

HARVEY L. LECHNER,
ARCHWORTH MARTIN.