Dec. 4, 1928. 1,693,830

J. TRISKA

BOTTLE CAP

Filed May 3, 1928

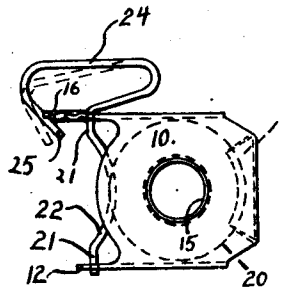


Fig. 1.

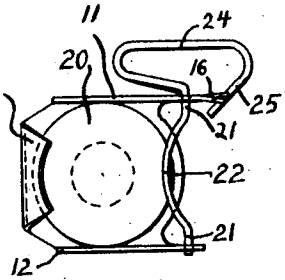


Fig. 2.

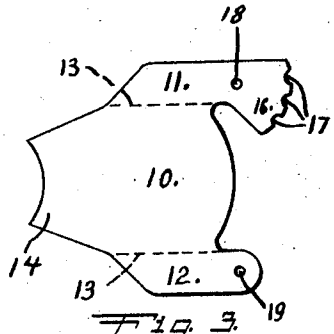


Fig. 3.

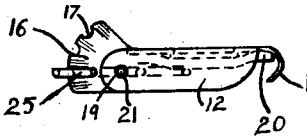


Fig. 4.

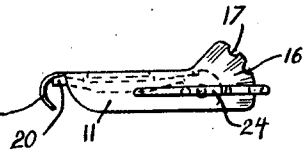


Fig. 5.

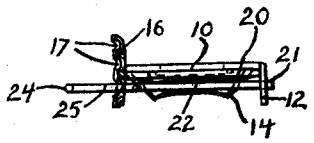


Fig. 6.

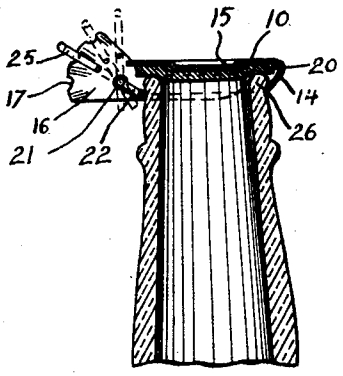


Fig. 7.

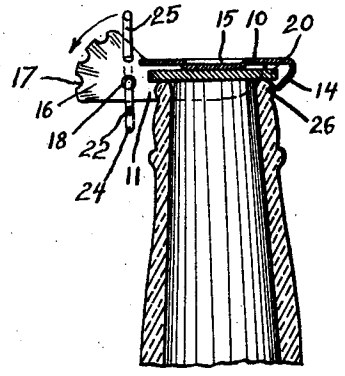


Fig. 8.

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Patented Dec. 4, 1928. 1,693,830

UNITED STATES PATENT OFFICE.

JOSEPH TRISKA, OF OMAHA, NEBRASKA.

BOTTLE CAP.

Application filed May 3, 1928. Serial No. 274,834.

My invention relates to caps for use on bottles and the like having at the end of the neck an external lip or bead, such as is commonly provided for use with a crimped or "crown" cap. It is the object of my invention to provide for bottles of this class a cap which may be applied to and removed from the bottle by hand, without the use of tools or instruments of any kind, and which may be used repeatedly or as often as desired. A further object of my invention is to provide a bottle cap of the class mentioned, which will effectively seal a bottle to which it is applied, so as to retain therein a considerable pressure, as of carbonated liquids, but which is capable of yielding to allow the escape of gas should the pressure become excessive, and which will automatically resume a sealing position when the pressure is reduced to normal. A further object of my invention is to provide a cap of this character which may be applied to bottles of which the lips or beads at the ends of the necks are of slightly varying sizes.

In the accompanying drawings Fig. 1 is a plan view of a cap embodying my invention, Fig. 2 is a bottom view of the same, Fig. 3 is a plan view of the body-blank of the cap, Figs. 4 and 5 are side views of the cap, showing the right and left sides, respectively, Fig. 6 is a front end view of the same, Fig. 7 is a vertical sectional view of the cap in sealing position upon a bottle, and Fig. 8 is a similar view showing the cap in a released position.

In carrying out my invention according to the illustrated embodiment thereof, the principal member of the device is an integral body of heavy sheet-metal, which may be readily produced by punching from a flat plate or sheet a body-blank of the form shown in Fig. 3, and subsequently bending and swaging said blank to the completed formation. Said sheet-metal body comprises a main central or plate portion 10, having at opposite sides thereof parallel flanges 11 and 12 extending down at right angles to the plate portion 10, said flanges being formed by bending the body-blank along the dotted lines 13 in Fig. 3, and the plate having at its rear end a lug or tongue 14 curled about an axis transverse to the flanges 11 and 12, to extend in diagonally beneath the rear portion of the plate. The lower end of the tongue 14 is concave in outline, to conform approximately with the curvature of the bottle-neck to which the cap is to be applied, and the side-flanges 11 and 12 are so spaced apart as to straddle loosely over the bead or lip of the bottle-neck. The central portion of the plate 10 is preferably swaged downwardly to form a flat circular boss on the lower side of the plate and a corresponding depression or recess 15 in the upper side thereof. The flange 11 is extended forwardly from the portion thereof connecting with the plate 10, and said front portion is flared to form a sector-shaped head 16 having in its arcuate edge a plurality of notches 17, said edge being substantially concentric with a hole 18 which is alined transversely with a hole 19 in the front portion of the opposite flange 12. The head 16 may also be shaped laterally to provide small corrugations extending radially toward the hole 18 from the notched edge. On the lower side of the plate 10, between the flanges 11 and 12, is disposed a circular gasket 20 of compressible material such as rubber, which may be secured to the plate by suitable cement.

Mounted pivotally in the transversely alined holes 18 and 19 in the side-flanges of the cap-body, is the key-shaft 21 which is made of spring-wire, the portion 22 intermediate the side-flanges being bowed laterally of the shaft-axis as best shown in Figs. 1 and 2, and a grip or handle 24, for turning the shaft, being formed integrally therewith at the end adjoining the side-flange 11. Said grip or handle comprises an oblong loop of the wire, lying in approximately the same plane as the lateral bow or crank 22, the closed end of the loop being at the same side of the shaft-axis as said lateral bow. At the open end of the loop the terminal portion 25 is extended in diagonally of the shaft-axis, said terminal portion being adapted to pass over the notched arcuate edge of the head 16 and to normally engage the inner side of said head, whereby to prevent the withdrawal of the shaft from the holes 18 and 19. To enable assembling thereof, the parts are so proportioned that by turning the handle-loop 24 slightly rearward from the vertical position shown in Fig. 8, the end of the diagonal portion 25 may be forced over the upper edge of the head 16 by a slight distortion of the loop, which resumes its normal form after the assembly is completed. In the operative positions of the key-shaft, the diagonal member 25 engages the notched and corrugated edge portion of the head 16 and serves to retain the shaft in adjusted positions. By pushing inwardly upon the handle-loop, to distort the same as indicated by the dotted lines in Fig.

1, the member 25 is disengaged from the head 16, so that the shaft may be freely turned.

In the use of the described cap for sealing a bottle, the cap is laid over the mouth of the bottle, with the side-flanges 11 and 12 straddling the neck, and a tongue 14 engaging the lip or bead 26 at one side of the neck, as shown in Fig. 8. Then, while holding the cap down upon the neck in the described position, the handle 24 of the key-shaft is turned forwardly, in the direction of the arrow in Fig. 8, whereby the bow or crank 22 of the shaft is engaged with the lip 26 at the side of the neck opposite the tongue 14, and the cap is thereby pulled forwardly and downwardly to the sealing position shown in Fig. 7, and is retained in said position by the engagement of the member 25 in one of the notches 17 of the head 16. For releasing the cap, the handle loop is merely pushed inwardly, toward the head 16, as indicated by dotted lines in Fig. 1, to thus disengage the member 25 from the notch in which it is engaged, after which the key-shaft tends to automatically assume a released position, such as shown in Fig. 8. The tendency of the key-shaft to assume a release position results from the fact that the closing or sealing operation compresses the gasket 20 and also places the shaft and handle-loop 24 under a torsional stress, both of which are relieved by the releasing movement. The provision of a plurality of the notches 17 for holding the key-shaft in sealing or closing position, enables the cap to be applied to bottles of which the lips or beads at the ends of the necks are of slightly varying sizes, and also enables a variation of the sealing-tension upon the parts, it being obvious that the pressure exerted by the cap-body against the gasket 20 is proportional to the torsional stress in the key-shaft between the terminal member 25 and the portion or the bow or crank 22 which engages the bead 26 on the bottle. The torsional resilience of the key-shaft and its handle-loop 24 allows the cap-body to be lifted by pressure within the bottle, as when the same contains carbonated liquids, should the pressure become great enough to overcome the torsional stress applied to the shaft in closing the cap, and when the excessive pressure has been released by the lifting of the cap, the latter will resume its sealing position to retain the desired normal pressure within the bottle.

Now, having described my invention, what I claim and desire to secure by Letters Patent is:

1. In a bottle-cap of the class described, a metal plate having downwardly extending side-flanges adapted to straddle the bead of a bottle-neck, and having at one end a tongue adapted to extend beneath said bead, a key-shaft mounted rotatably and extending transversely between said side-flanges at the end opposite said tongue and having a bowed intermediate portion adapted to engage the neck-bead, and means for retaining the key-shaft in adjusted positions.

2. In a bottle-cap of the class described, a metal plate adapted to fit over the mouth of a bottle and having at one end thereof a tongue adapted to extend about the bead of the bottle-neck to engage the lower side of said bead, a shaft pivotally connected with said plate and extending transversely thereof at the end opposite said tongue, said shaft having a crank-portion adapted for engagement beneath the neck-bead to pull the plate toward the same, and means for yieldingly retaining the shaft in adjusted positions.

3. In a bottle-cap of the class described, a compressible member fitting over the mouth of the bottle, a metal plate covering said member and having a hooked tongue extending about the bead of the bottle-neck at one side thereof, a shaft mounted pivotally beneath the plate and having a crank portion extending adjacent to the neck-bead at the side opposite said hooked tongue, a resilient handle integral with said shaft and formed by a loop at one end thereof, and a notched head carried by the plate and engageable by the terminal portion of said loop to retain the shaft in adjusted positions.

4. A bottle-cap of the class described, comprising a compressible gasket for the mouth of the bottle, a metal plate covering said gasket and having opposite side-flanges straddling the bead of the bottle-neck, a hooked tongue at one end of said plate extending about the neck-bead to engage the lower side thereof, a shaft of springy material journaled in the side-flanges at the end opposite said tongue, said shaft having a central crank-portion adapted to engage the neck-bead to pull the plate toward the same, a handle-loop formed integrally with said shaft at one end thereof, and a head carried by one of the side-flanges and having a notched arcuate edge substantially concentric with the shaft-axis, the terminal portion of the handle-loop extending over said arcuate edge of said head to prevent withdrawal of the shaft from the side-flanges and to releasably engage the notches in said edge.

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