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BOTTLE SEAL CUTTER

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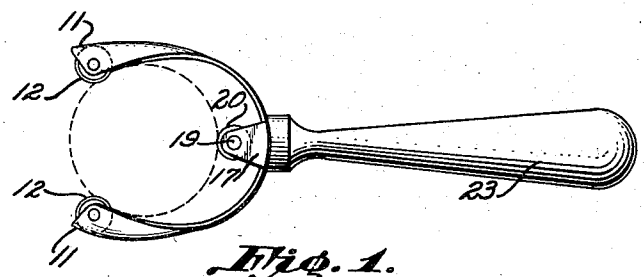


Fig. 1.

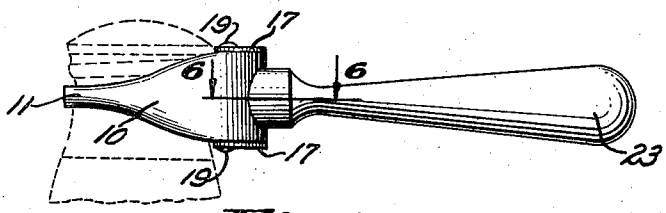


Fig. 2.

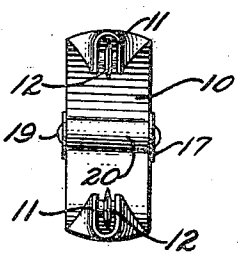


Fig. 3.

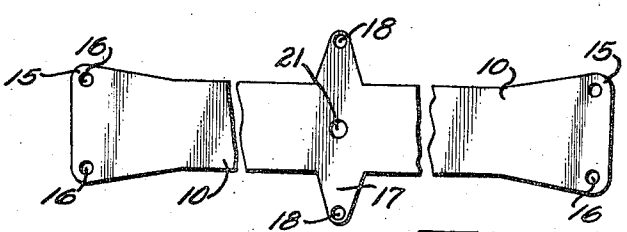


Fig. 4.



Fig. 5

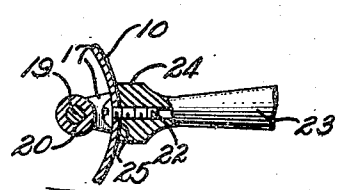


Fig. 6.

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BOTTLE SEAL CUTTER

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5 Claims. (Cl. 30—2)

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This invention relates to improvements in bottle seal cutters.

At present it is customary to seal the corked and capped ends of bottles with a plastic composition that adheres to the bottle surface and hardens in place, forming a hermetic seal.

Such seals do not merely perform the function of a seal, but also serve to indicate whether or not the bottle has been opened.

It is quite customary for dispensers of beverages that come in sealed bottles to cut such seals by means of a pocket knife or any other sharp instrument that may be at hand.

Due to the fact that a knife is not designed with particular reference to opening such seals and is not very well adapted for the purpose, the operators frequently wound themselves when cutting such seals.

It is the object of this invention to produce a tool for cutting bottle seals, which tool shall be of such construction that it can be conveniently operated and in which the cutting portions are shielded in such a way as to make it very difficult, if not impossible, for the operator to wound himself when using the same.

Having thus described the objects of the invention, the invention itself will now be described in detail and for this purpose reference will be had to the accompanying drawing in which the invention has been illustrated in its preferred form, and in which:

Figure 1 is a plan view of the tool, its position to the bottle neck being indicated by dotted lines;

Figure 2 is a side elevation showing the bottle neck by dotted lines;

Figure 3 is an end view of Figure 1;

Figure 4 is a development of the steel spring which forms the principal part of the tool;

Figure 5 is an end elevation of one of the resilient arms; and

Figure 6 is a section taken on line 6—6, Figure 2.

In the drawing reference numeral 10 designates a flat resilient metal member which is preferably made from high carbon steel, but which may, of course, be made from any other material having the required physical properties. Member 10 is curved into a shape resembling a horseshoe and the two ends are bent double forming portions whose cross sections are U-shaped. These U-shaped end portions have been designated by reference numerals 11. Positioned between the sides of the U-shaped ends are cutter wheels 12 which are made from hard steel and

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are preferably provided with circular shoulders 13, as shown more clearly in Figure 5.

The cutter wheels are mounted for rotation about pivots 14, the cutting portion of each wheel is preferably quite thin so as to adapt it to enter readily in the space between the cap or cork of a bottle and the end of the bottle neck.

In Figure 4 the blank from which the resilient member is formed has been shown. This comprises a flat band-like center portion terminating in slightly outwardly extending lugs or ends 15, provided with perforations 16 for the reception of the pivots 14. At the center of the blank are two lugs 17 that are provided with perforations 18 for the reception of the pivot 19 on which roller 20 turns. The blank shown in Figure 4 is bent by suitable dies and the ends are doubled so as to terminate in the U-shaped portions designated by reference numerals 11 and shown quite clearly in Figures 3 and 5. The blanks are provided with a central opening 21, for the reception of a screw 22 that connects them with a handle 23.

It will be observed from the drawings that the handle has an enlarged end 24 having a slightly concave end surface 25, against which the convex portion of member 10 fits as shown in Figure 6. Screw 22 is tightened before the roller 20 is put into position and the shape of the handle end prevents the resilient member from turning. Suitable precaution may be taken to prevent the accidental loosening of screw 22; for example, it may be attached to the resilient member by solder or secured against rotation by any other suitable means. When the parts are assembled, they have the appearance shown in Figures 1, 2 and 3. The resilient member 10 is of such size that when the tool is in position on a bottle neck, which has been designated by a dotted circle in Figure 1, the cutter wheels will engage the bottle neck to one side of a diameter and thus produce resultant forces tending to bring the roller 20 against the outside of the bottle neck as clearly shown in the drawing. After the tool has been positioned, the forces produced by the resiliency of member 10 hold it in position and exert sufficient inward force to enable the cutters to sever the seal. By turning the tool slightly more than 180 degrees, the seal is cut completely and the tool is then withdrawn by exerting a suitable force on the handle. The cork or screw cap can now be readily removed.

It will be observed that roller 20 extends the whole width of the resilient strip and that the planes of rotation of the cutter wheels are substantially coincident with the median plane of

the resilient member as shown more clearly in Figure 3. By having a long roller as shown in the drawing, the tool adapts itself quite readily for use with bottles having either a screw cap, as shown in Figure 2, or an ordinary cork. The latter usually project over the outer periphery of the bottle edge and this makes it desirable to have a long roller as shown.

Particular attention is called to the fact that the cutter wheels are shielded by the outer curved surface of the U-shaped ends 11 so as to make it practically impossible for an operator to cut or wound himself by coming into accidental contact with the cutter wheels. The U-shaped end portions also result in a construction that gives great stability to the cutting disks because the pivots 14 have two contacts with the resilient member and therefore hold the cutter wheels quite firmly against any forces tending to displace them from their normal operative position.

The roller 20 is of great importance in a construction like that shown because it permits a rolling contact at this point; whereas, if a stationary surface were brought into contact with the seal, the friction between the two would be so great as to frequently tear the seal, and if this did not occur, the friction would greatly interfere with the free operation of the tool.

By means of this tool the seal on ordinary bottles, such as those in which alcoholic liquors and wines are sold, can be readily cut. The open end of the cutting tool makes it easy to position the cutting wheels at the proper place with respect to the space between the closure and the end of the bottle, and just as soon as the wheels are properly positioned, a slight rotation of the cutter completes the severing of the seal as above explained.

Particular attention is again called to the manner in which the cutting wheels are shielded to prevent injury.

Handle 23 may be made from any suitable material either metal or plastic and if suitable plastic materials are found to be available, the resilient member 10 may also be constructed from such material, although at present the most suitable material is believed to be a high carbon spring steel.

Having described the invention what is claimed as new is:

1. A seal cutter for bottles, comprising, in combination, a substantially horseshoe shaped member of spring steel, or the like, adapted to embrace a bottle neck, a cutter wheel secured to each end of said member for rotation about an axis perpendicular to the median plane of the member, the plane of rotation of said cutter wheels being parallel with the said median plane, and a roller secured to the horseshoe shaped member substantially midway between the axes of rotation of the cutter wheels, said roller being mounted for rotation about an axis parallel with the axes of the cutter wheels.

2. A seal cutter for bottles, comprising, in combination, a substantially horseshoe shaped member of spring steel, or the like, adapted to embrace a bottle neck, cutter wheels secured to the ends of said member for rotation about axes perpendicular to the median plane of the member, the plane of rotation of said cutter wheels being parallel with the said median plane, and a roller secured to the horseshoe shaped member substantially midway between the axes of rotation of the cutter wheels, said roller being mounted for rotation about an axis parallel with the axes of the cutter wheels.

3. A seal cutter for bottles, comprising, in combination, a substantially horseshoe shaped member of spring steel, or the like, adapted to embrace a bottle neck, the ends of the member terminating in portions of substantially U-shaped cross sections, a cutter wheel, at each end, positioned between the walls of the U-shaped end portions and pivotally attached to the latter, the axes of rotation of the cutter wheels being perpendicular to the median plane of said member, the curved outer wall of the U-shaped portions forming guards for the cutter wheels, and a roller positioned on the concave side of said member, connected with the latter for rotation about a pivot parallel with the pivots of the cutter wheels, the cutter wheels and the roller being positioned to engage the periphery of a bottle neck to sever a seal thereon.

4. A device in accordance with claim 1 in which the horseshoe shaped member has a handle projecting from its convex surface.

5. A device in accordance with claim 3 in which the horseshoe shaped member has a handle extending outwardly from its convex side.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,219,971	Lutz	Mar. 20, 1917
2,276,268	Donlon	Mar. 17, 1942
2,276,476	Folger	Mar. 17, 1942