Sept. 27, 1955 F. A. KRZANOWSKI 2,718,692

BOTTLE SEAL CUTTER AND OPENING DEVICE

Filed April 14, 1953

Fig. 1.

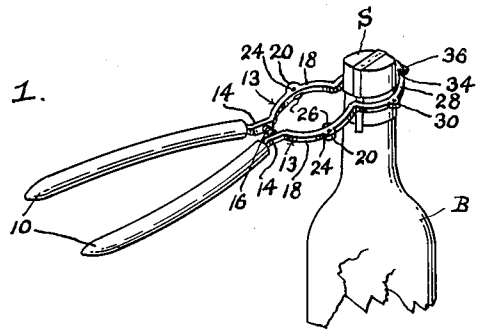


Fig. 2.

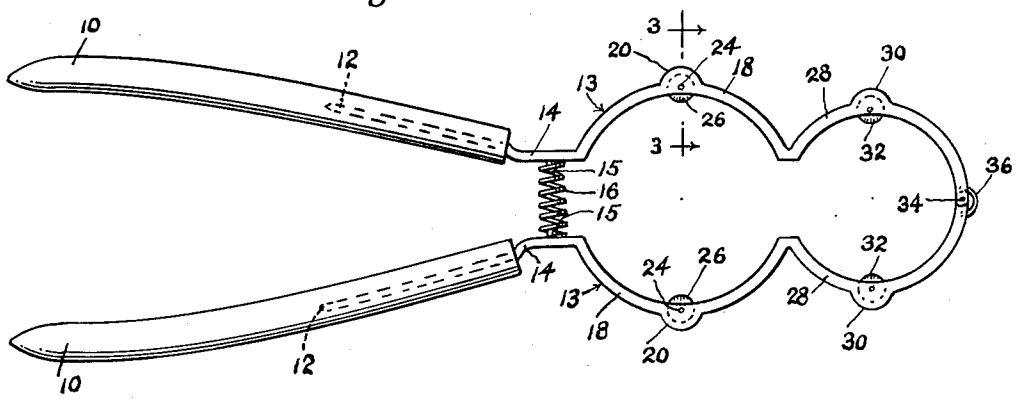


Fig. 3

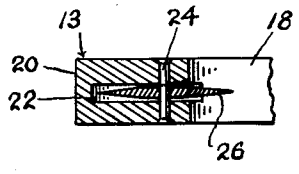


Fig. 4.

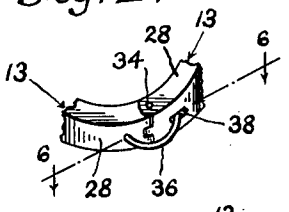


Fig. 5.

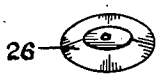
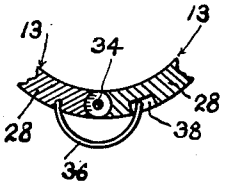


Fig. 6.



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BOTTLE SEAL CUTTER AND OPENING DEVICE

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Application April 14, 1953, Serial No. 348,687

1 Claim. (Cl. 30—1.5)

This invention relates to a device applicable to a bottle, jar, or other container, for the purpose of cutting a seal of plastic or similar material provided upon the same, the device being further adapted to facilitate the opening of the bottle.

An important object of the present invention is to provide a device of the type stated which will have adjacent neck-receiving portions, said portions being of different sizes to facilitate application of the device to necks of various diameters.

Another object of importance is to provide a device of the type stated in which a pair of pivotally connected members will be each formed with adjacent, integrally connected, arcuate portions, the arcuate portions of the respective members cooperating to define the neck-receiving portions of the device mentioned above, each arcuate portion being equipped with one or more rotary cutting blades.

Another object of importance is to provide a device as stated which can be manufactured at relatively low cost, and can be applied to a bottle with maximum speed and facility.

Other objects will appear from the following description, the claim appended thereto, and from the annexed drawing, in which like reference characters designate like parts throughout the several views, and wherein:

Figure 1 is a perspective view of a seal cutting device formed in accordance with the present invention, as it appears when applied to a bottle for the purpose of cutting the seal thereof;

Figure 2 is an enlarged top plan view of the cutting device per se;

Figure 3 is a detail sectional view, the scale being still further enlarged, taken substantially on line 3—3 of Figure 2;

Figure 4 is a fragmentary perspective view showing the pivotal connection of the spreadable members of the device;

Figure 5 is a perspective view of one of the rotary cutting blades per se; and

Figure 6 is a detail sectional view taken substantially on line 6—6 of Figure 4.

The reference numeral **10** has been applied in the drawing to elongated, longitudinally curved, rubber sleeves, said sleeves **10** being formed open at one end to receive the free ends **12** of a pair of pivotally connected, spreadable members designated generally by the reference numeral **13**.

It will be understood, of course, that the grips **10** need not necessarily be formed of rubber, said grips being readily fashioned from molded plastic or any other suitable material.

In any event, the grips **10** provide handles for the spreadable members **13**, which handles diverge in a direction away from the pivotal connection of said members.

The members **13** are of identical though opposite formation, each of said members having, adjacent the free

end portion **12** thereof, a relatively short, straight part **14**. The straight parts **14** of the members **13** are each provided with an inwardly facing lug **15**, a coil spring **16** having its ends engaged about the respective lugs. The coil spring **16** is held under compression between the straight parts **14**, thus to urge the members **13** away from one another.

The straight part **14** of each member **13** merges into an inner arcuate portion **18** approximately semi-circular in form, and on each arcuate portion **18**, medially between the opposite ends thereof, I provide an approximately semi-circular enlargement **20**, said enlargement **20** being formed upon the outer surface of the portion **18**.

Referring to Figure 3, each enlargement **20** has a deep, narrow, approximately semi-circular recess **22** formed therein, said recess opening upon the inner side surface of the arcuate portion **18**. A shaft or pin **24** is mounted in the enlargement **20**, said pin **24** extending through the slot **22**, to provide a bearing for the rotary cutting blade **26**, whereby said blade will be rotatably mounted in the slot **22**. Blade **26**, as shown in Figures 3 and 5, has a beveled periphery, thus to form a sharp cutting edge on the blade. As will be readily apparent from the drawings, the blade has a major part thereof recessed within the slot **22**, a portion of the marginal area of the blade projecting, however, inwardly of the arcuate portion **18** of the cutting device.

The arcuate portion **18**, at that end thereof remote from the straight part **14**, is integral with a second arcuate portion **28**, which arcuate portion may be appropriately termed an outer arcuate portion, said portion **28** being provided, intermediate its ends, with an enlargement **30** similar to the enlargement **20**. Enlargement **30** is slotted to receive a rotary cutting blade **32**.

The outer arcuate portions **28** of the respective members **13** are pivotally connected, at that end thereof remote from the portions **18**, by means of a pivot pin **34**. Means can be provided, in this connection, preventing movement of the portions **28** away from one another beyond a position in which said portions are concentric, this being the position thereof shown in Figure 2. To this end, the portions **28** may have a tongue and groove connection as shown in Figure 4, and additionally, an arcuate spring member **36**, embedded at one end in one portion **28**, may have its other end engaged in a recess **38** provided in the other portion **28**, said spring **36** extending about the pivotal connection **34**.

By reason of the construction illustrated and described, it will be seen that the cutting device constituting the present invention includes side by side, substantially circular, neck-receiving areas of different sizes.

Accordingly, in use of the tool, it is merely necessary that the tool be positioned over the neck of a bottle B for the purpose of breaking the usual plastic seal S thereof. When the bottle is engaged by the tool in this manner, the handles of the members **13** can be pressed toward one another, thus causing the cutters **32** or **26**, as the case may be, to be forced inwardly against the seal. The bottle can then be rotated, or alternatively, the tool can be rotated about the neck of the bottle, thus causing the seal to be cut through its entire circumference.

As soon as the seal has been fully cut, release of the grips **10** will be effective to permit the spring **16** to expand, thus disengaging the cutters **32** from the bottle. The spring, when normally expanded, will of course cause the cutters **32** or **26** to be spaced apart a distance sufficient to permit the positioning of the device about the neck of the bottle, or the removal of the device from the neck after the seal has been cut.

An important characteristic of the invention resides in its adaptability for cutting seals of bottles varying from

one another as to the diameter of the necks thereof. In other words, the outer seal cutting means defined by the portions **28** and their associated cutters **32** can be used for cutting the seals of any of various small diameter necks. However, if the diameter of the neck exceeds a predetermined value, the inner cutting means defined by portions **18** and blades **26** is used, said inner cutting means being adapted for cutting the seals of any one of various large diameter bottle necks.

In every instance, of course, the tool can be applied to or removed from the bottle with little difficulty, and with maximum speed. This is of importance in bars, clubs, hospitals, hotels, etc., where there is a continuing necessity of breaking the plastic seals on bottles preliminary to opening of the same.

I believe that the construction illustrated and described is also well adapted to facilitate the opening of the bottle, by removal of the bottle cap, after the seal has been broken. In some instances, the caps of the bottles are of the cork or plug type, and it will be readily appreciated that in use of the tool, the blades **32**, after being forced inwardly under the head of the cap subsequent to breaking of the seal, can be used as a means for prying the cap or cork upwardly. In other words, the tool can be rocked about a transverse axis extending between the blades **32** or blades **26**, as the case may be, and in such instances, the blades will exert a prying action facilitating lifting of the cap from the bottle.

It is believed apparent that the invention is not necessarily confined to the specific use or uses thereof described above, since it may be utilized for any purpose to which it may be suited. Nor is the invention to be necessarily limited to the specific construction illustrated and described, since such construction is only intended to be illustrative of the principles of operation and the means presently devised to carry out said principles, it being considered that the invention comprehends any minor change in construction that may be permitted within the scope of the appended claim.

What is claimed is:

A bottle seal cutter and opening device comprising a pair of elongated members pivotally connected to each other at one end thereof for swinging movement toward and away from one another, said members being formed with handles at the other end thereof, spring means interposed between the members tensioned to normally urge the members apart, said members adjacent the pivotal connection thereof to one another being formed with oppositely, outwardly bowed portions of approximately semicircular form, each of said portions being of rectangular cross section with inner, confronting walls disposed in a plane, when said portions are viewed in cross section at any location along the length thereof, normal to the plane of swinging movement of the portions, said inner surfaces of the portions being formed, medially between opposite ends of the portions, with deep but narrow recesses lying in the plane of swinging movement of said members and opening upon the inner surfaces of the bowed portions, said recesses being formed with inner walls curved through substantially more than one hundred and eighty degrees; cutter discs each having a sharply beveled peripheral edge seated in the respective recesses, said discs having their top and bottom faces in engagement with the corresponding walls of the recesses, the discs projecting partially out of the recesses beyond the inner surface of the associated bowed portion, for cutting into the seal of a bottle cap responsive to swinging of the members toward one another against the restraint of said spring means, said discs, when engaged under a cap the seal of which has been cut by the discs, forming prying lugs to loosen the cap relative to the associated bottle responsive to rocking of said members bodily about a transverse axis normal to the axis of the pivotal connection therebetween.

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