

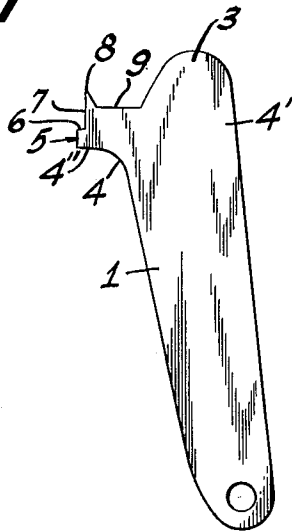
April 20, 1954

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PRY TYPE JAR CAP LIFTER

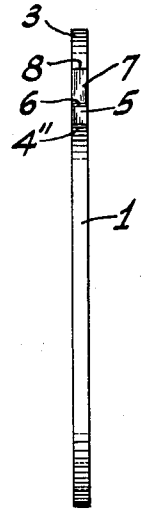
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Filed June 14, 1952

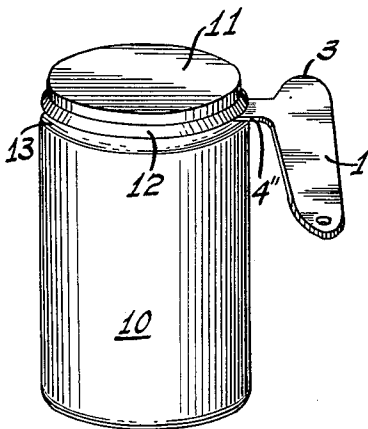
*Fig-1*



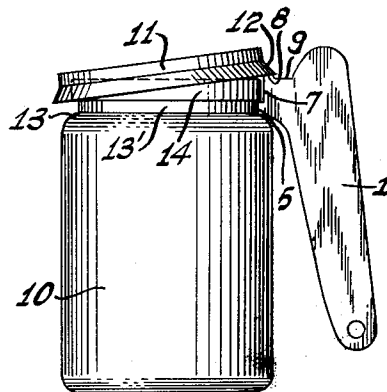
*Fig-2*



*Fig-3*



*Fig-4*



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## UNITED STATES PATENT OFFICE

2,675,721

## PRY TYPE JAR CAP LIFTER

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Application June 14, 1952, Serial No. 293,627

2 Claims. (Cl. 81—3.46)

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Our present invention relates in general to jar openers, and more particularly to cap openers for jars of the vapor or vacuum-sealed type, and is a continuation-in-part of application Serial No. 146,502, filed February 18, 1950, and now abandoned.

In the past it has been found difficult to provide a simple, positive and inexpensive opener for jars or bottles of the type employing a cap or top which is fitted snugly over a flange surrounding the mouth of the jar or bottle. For example, jars that are vacuum or vapor sealed with a metallic cap having the typical flared periphery, are extremely difficult to open with the devices usually recommended for the purpose. Such devices comprise the back of a dull table knife, the edge of a coin, special flat edge tools or the usual hook opener and the like. However, in all these cases we have found this common problem to exist: the prior tool will repeatedly slip despite the utmost efforts to prevent slippage, and damage to the cap or top inevitably results, as well as breakage to the glass mouth. Further, the use of a flat tool will raise one side of the cap and depress the opposite side without breaking the seal between cap and jar or bottle. Repeated use of the table knife merely rocks the cap upon the jar top without opening the jar. Where jars of vacuum-packed baby foods are involved, it is obvious that such damage renders the experience of opening the jar a vexatious experience to the mother. Our problem, then, was to find a method of easily opening jars that have vacuum sealed tops, and to provide means so constructed that the top or cap would be undamaged.

A main object of our present invention is to provide a jar cap or top opening device adapted to function in its designed manner with but one continuous motion through a ninety degree arc, the top or cap remaining in perfect shape free from bends or damage and being reusable.

Another object of our invention is to provide a novel jar top opener which features a hook or guide element which effectively and easily breaks the seal between cap and jar and prevents slippage of the opener while the cover or top is being lifted.

Another object of the invention is to provide a jar cap opening device which is formed from a single piece of relatively thin metal, and comprises a handle having a curved working edge end having a spaced pivot element or tongue and a seal breaking pointed hook which also acts as a retention element.

Still other objects of our invention are to improve generally the construction of jar openers, and more especially to provide an improved vacuum sealed jar cap opening tool which is economically manufactured and simply employed.

Other features of our invention will best be

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understood by reference to the accompanying drawing showing an embodiment of our invention.

In the drawing:

Fig. 1 shows a side view in elevation of the novel jar opener;

Fig. 2 is the front edge view of the opener;

Fig. 3 shows a vacuum sealed jar with the opener in horizontal position and the head inserted prior to the opening motion; and

Fig. 4 shows the cap lifted off the jar, and the opener in its final vertical position.

Referring now to the accompanying drawing, wherein like reference characters in the several figures denote similar elements, in Figs. 1 and 2 we have shown the novel jar opener device in substantially full-size dimensions. It is to be fully understood that we do not restrict ourselves to any specific dimensions. The device is preferably stamped out as a single piece from any suitable metallic stock. For example, stainless steel, aluminum or any corrosion-resistance alloy may be used. Any suitable non-metallic material, such as a synthetic resin plastic or even wood, of sufficient rigidity may be employed.

The device has uniform thickness, as is indicated in Fig. 2, and has a handle 1 of generally rectangular configuration. The lower corners 2 of the handle may be rounded or otherwise finished. The upper end of the device is generally indicated by numeral 3, and is the working head thereof. It is bent or curved at substantially a right angle to the plane of handle 1. The inner and outer edges 4 and 4' respectively are curves which may have substantially equal radii of curvature. The inner curved edge 4 has the forward portion 4'' thereof adapted to function as the lower or jar-bearing edge.

The working head 3 of the device or tool is provided with a tongue or fulcrum section 5 which has a generally rectangular shape. The vertical edge 5' of the fulcrum section 5 is linear, while the upper edge 5 thereof has a gentle or slight upward grade to the vertical edge 7. The edge 7 rises to a point sufficiently above the horizontal edge 9 of the working head 3 to provide a sharp saw-tooth shaped tooth or hook section 8 having a steep vertical front side or edge and a sloping rear side or edge, as shown.

The edge 9 functions as a shoulder or cover-lifting edge, as will be later described in connection with Fig. 4. The edge 9 is an extension, of course, of the outer curvature 4'. The tooth or hook element 8 performs a most important function in our device. There is a distance in the device to which we direct attention. This is the distance between edge 4'' and edge 9, and preferably corresponds approximately to the height which the jar cover or top should be lifted at any given point to cause it to fall free

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from the lip of the jar. However, we do not intend to restrict ourselves to this particular spacing as shown in Fig. 1 particularly since the sharp point of the hook causes a break or piercing of the vacuum seal long before the cap or cover has been raised to a distance corresponding to that between 4" and 9. When the vacuum seal is broken between cap and jar by the sharp point of the hook, the outside air rushes in to equalize the pressure between the interior of the jar (under the cap) and the atmospheric pressure, to thereby enable the cap to be lifted free of the jar. As previously stated, the entire device is easily fabricated in one operation from a plate or sheet of suitable thickness.

The device is utilized as shown in Figs. 3 and 4. In Fig. 3 the jar 10, say a glass jar of baby food, is provided with a cap or top 11, and the jar is to be understood as being of the vacuum sealed type. The cap 11 generally has the shape shown, with a flared rim or periphery 12 which overhangs the ledge 13 of the jar. The inner face of the rim of cap 11 is usually provided with a rubber gasket which grips the smooth glass rim on shoulder flange 14 of the mouth of the jar. There is a circular groove or recess of lesser diameter between ledge 13 and rim 14.

It is to be understood that jar 10 is but one example of the type of closure which can easily and positively be opened by our opener. We do not restrict ourselves to the specific glass jar shown. Bottles and fruit jars, as well as other containers, having the general type of vapor or vacuum sealed cap may readily be opened with our device. It is but necessary to position the head 3 as shown in Fig. 3 as a first step toward opening the jar. In Fig. 3 the plane of the opener is to be understood as being at right angles to the paper, i. e., at right angles to the vertical axis of the jar. The tongue 5, edge 7 and hook 8 are all positioned in the space between ledge 13 and rim 14 and in substantial contact with the face of the circular groove 13'.

Downward pressure on handle 1 causes the tongue 5 to function as a fulcrum, the lower edge section 4" bearing on ledge 13. As shown in Fig. 4 the vertical edge 7 clears the rim 14. The shoulder edge 9 functions as the cover lifting edge, the hook element 8 with its sloping edge being sufficiently high to engage the interior surface of the cap edge to raise the cap the slight distance necessary to permit the sharp hook point to pierce or break the vacuum seal, thereby permitting air to rush in under the cap to equalize the pressure on both sides of the cap. The hook 8 also functions as a means to prevent the head from slipping out from under the cap section 12 during the cover lifting period. In other words, the hook element 8 maintains the head in lifting position throughout the arc of 90 degrees described by head 3 as it is changed from the horizontal position to the vertical position of Fig. 4. Simple downward pressure on the end of handle 1 is all that is required, while keeping the tongue 5 on the ledge 13 and the hook inside of the cap section 12. When the handle has been pushed about one-half the way down to the vertical, the vacuum seal will have been broken by the point of the hook 8 and cover 11 will be free because of the equalization of pressure on both sides of the cap. No slippage is encountered. No bending or injury of any kind occurs to the cover, nor is the glass damaged.

It will be observed that tongue 5 performs a

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dual function, i. e., it acts as a pivot or fulcrum for the head 3, and it further insures the clearance of rim 14 by edge 7. As pointed out previously, the distance between edge 4" and edge 9 should be so chosen that the cover will be lifted free of rim 14 when the plane of the opener assumes the vertical position, i. e., parallel to the jar axis. The profile of the head of the jar opener follows generally the profile of the top of the glass jar.

From the foregoing it is thought that the construction, operation and many uses of the herein-described invention will be clear to those skilled in the art of jar openers without further description.

What we claim is:

1. For use with a jar having a rim over which a cap is adapted to be placed, a jar cap opener comprising a flat handle provided with an integrally joined relatively small flat head projecting at right angles thereto, said head when considered positioned in the vertical plane having at its bottom portion a fulcrum section of generally rectangular shape, said head having at its upper portion a tooth having a straight front side generally parallel to the axis of said handle and having a sloping rear side, the front edge of said fulcrum section projecting a predetermined distance beyond the extension of said straight front side of said tooth to insure clearance of the jar rim, said sloping rear side of said tooth acting on the inner edge of the cap to raise the same and enable the tooth point to break the vacuum seal between jar and cap.
2. For use in opening a glass jar of the type having a circular groove or recess at the top thereof and a glass flange or shoulder above said groove, said jar being adapted to be vacuum sealed by a cap provided with an inner gasket for gripping said glass flange, a jar cap opener comprising a metallic head having a profile generally similar to the profile of the top of said jar, said head when considered positioned in a vertical plane having at its working lower edge a fulcrum section and at its upper edge a tooth element whose point is spaced from the bottom of said fulcrum section by a distance slightly greater than the distance between the bottom of said circular recess and the gasket of said cap, said fulcrum section having a height generally equal to the height of said recess and characterized by the absence of sharp edges, said tooth element being generally saw-tooth in shape and having a steep front side and a sloping rear side, said front side being straight and a continuation of a line which defines the rear end of said fulcrum section, said tooth element being spaced rearward from the front edge of said fulcrum section by a distance at least equal to the width of said glass flange and acting on the interior surface of the cap gasket to break the seal between the cap and jar and to lift the cap when said opener is rotated 90°.

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