Feb. 20, 1923. 1,445,905.

A. R. NEFF.

OPENING DEVICE.

FILED DEC. 2, 1919.

Fig. 1.

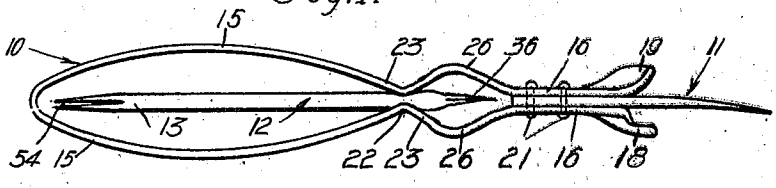


Fig. 2.

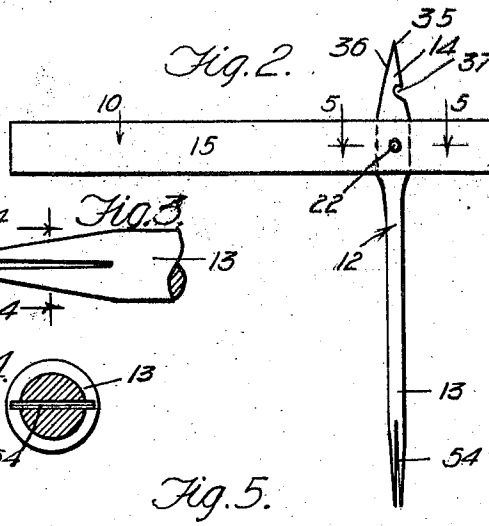


Fig. 3.

Fig. 4.

Fig. 7.

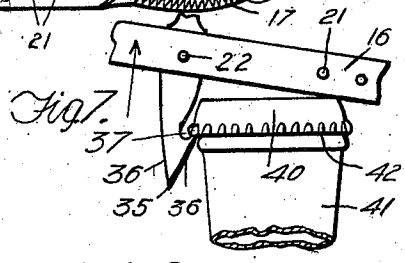


Fig. 8.

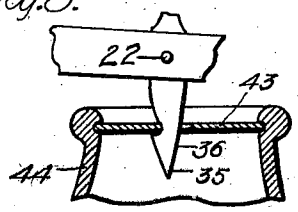


Fig. 5.

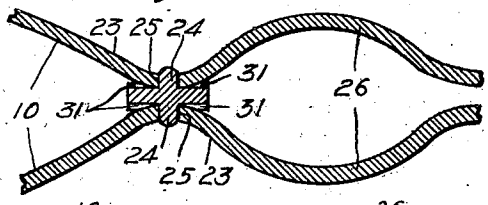


Fig. 10.

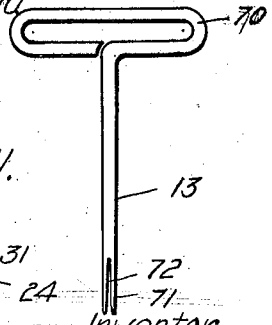


Fig. 6.

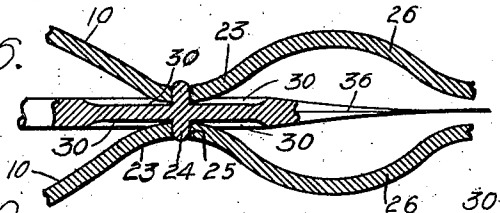


Fig. 11.

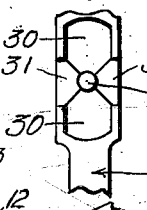


Fig. 9.

Inventor
Abner R. Neff
by James T. Barkelew
his Attorney

Patented Feb. 20, 1923. 1,445,905

UNITED STATES PATENT OFFICE

ABNER R. NEFF, OF LONG BEACH, CALIFORNIA.

OPENING DEVICE.

Application filed December 2, 1919. Serial No. 341,991.

To all whom it may concern:

Be it known that I, ABNER R. NEFF, a citizen of the United States, residing at Long Beach, in the county of Los Angeles, State of California, have invented new and useful Improvements in Opening Devices, of which the following is a specification.

This invention relates to an opening device providing means for opening metallic cans of various types, bottles having metallic caps, or bottles having paper or like caps such as milk bottles; and it is an object of the invention to provide a device of this character which is simple, effective, and easily operated.

The present invention provides a device having a cutter of the general type common to can-openers; a key adapted to open cans, made so that their tops peel or pull off, such as key-cans; and a hook member adapted to remove metallic or paper caps from bottles. A feature of the invention is the provision of the above-mentioned opening devices in a simple, neat, and convenient structure.

The device is arranged so that it is folding or collapsible, thereby making it neat and convenient to handle. The construction of the device which renders it collapsible is a feature of the invention as it allows the hook member for opening bottles, and the key for opening cans, to be folded into the handle of the device, so that they do not interfere in any way with the operation of the cutter. When the device is in its opened-out or unfolded condition either the key or the hook member can be used and can be easily and conveniently operated by the handle.

The construction of the key, provided for removing or peeling off tops of cans, is a particular feature of the invention. The key provided by the present invention will grip and hold the tab or projection, which extends from the top of a can, of the type adapted to open by the peeling or tearing off of the top, and is also very easily removed from the tab or projection, and the cover of the can, at any time during the process of opening the can or after the top is completely rolled onto the key. These features of the key are particularly important as they make it very effective in its operation and particularly easy and convenient to operate.

Further objects and features of my invention and the means by which I effect or carry out these objects and features are explained in the following specification wherein I set forth a preferred form of my invention, throughout which reference is had to the accompanying drawings, in which—

Figure 1 is a plan view of the device provided by the present invention showing it folded; Fig. 2 is a side elevation of the device showing it opened out or unfolded; Fig. 3 is an enlarged view of the end portion of the key; Fig. 4 is an enlarged section taken as indicated by line 4—4 on Fig. 3; Fig. 5 is an enlarged detailed section taken as indicated by line 5—5 on Fig. 2; Fig. 6 is an enlarged detailed section similar to Fig. 5 showing the device in the folded position; Fig. 7 shows the manner in which the bottle-opening device may be used when opening or removing the metallic cap from the neck of a bottle; Fig. 8 is a view showing the manner in which the device may be used to remove a paper cap from a bottle; Fig. 9 is a view showing the manner in which the key may be used in removing the top of a can; Fig. 10 is a view showing a form in which the key may be embodied; and Fig. 11 is a side elevation of a portion of the rod on which is formed the key and bottle opener, showing it removed from the handle.

Throughout the drawings numeral 10 designates the handle to which is rigidly connected the cutter blade 11 and to which is pivotally connected the rod 12 which forms both the key 13 and the bottle opener 14. The handle 10 may be designed, shaped, and constructed in any suitable manner, although it is preferred, for the sake of simplicity of construction and neatness, that it be a single strip of metal bent or looped to have a looped portion 15 which forms a hand grip while its end portion 16 connects to the cutter blade 11. Due to the fact that various forms of handles 10 may be substituted for that herein shown and described, without departing from the spirit of the invention, it will be understood that the invention is

not limited to the specific or particular form of construction of handle herein set forth.

The cutter blade 11 and its co-operating parts are preferably, although not necessarily, of the design and construction set forth in my application for Letters Patent entitled Can opener, filed October 13, 1919, Serial No. 330,456. The cutting blade 11 is adapted to cut out the tops of metallic cans being provided with a cutting edge 17 and being arranged to co-operate with projections 18 and 19 which extend from the ends 16 of the strip of metal which forms the handle 10. The cutting blade 11 is preferably somewhat curved to conform with the curvature of the side wall of an average-sized can and the blade is provided with serrations 20 on its inner side adjacent to the cutting edge 17, as clearly shown in the drawings. The serrations 20 prevent the blade from slipping when it is being operated and cause it to more or less bite into the metal being cut. The projection 19, from one of the ends 16 of the metal strip which forms the handle 10, is adapted to engage and grip the top edge of the side wall of a can while the cutter 11 is in operation, while the projection 18, from the other end 16, is adapted to prevent excessive curling of the cut top of the can. It will be understood that the ends 16 and the cutting blade 11 may be connected together in any suitable manner, for instance, rivets 21 may extend through the three members as clearly shown in Fig. 1.

The rod 12, on which is formed the key 13 and the bottle opener 14, is pivotally connected at 22 to the handle 10. As will be seen from the drawings, the point of pivotal connection 22, between the handle 10 and the rod 12, is located between the looped portion 15, of the strip of metal which forms the handle 10, and the end portions 16 which connect to the cutter blade 11. The rod connects to indentations or inwardly bent portions 23 which are provided in the strip of metal near its end portions 16. The rod 12 is carried between the inwardly bent portions 23, and the connection between the rod and the metal strip is made by projections 24, extending from opposite sides of the rod 12 into holes 25 in the inwardly bent portions 23, as clearly shown in Figs. 2, 5, and 6. As shown in the drawings the key 13 is comparatively long relative to the bottle-opener 14 and is therefore adapted to fold into the looped portion 15 which forms the hand grip, while the bottle opener folds into the small looped portion 26 formed between the inwardly bent portions 23 and the end portions 16, as clearly shown in Fig. 1. It will be readily understood how the key 13 and bottle-opener 14 do not in any way interfere with or make inconvenient the use of the cutter blade 11. The above described manner of connecting the rod 12 to the handle 10 is not only particularly effective but is simple, durable, and inexpensive in construction. In the preferred form of construction the projections 24 are formed on the rod 12 by stamping and the holes 25 are stamped out when the inwardly bent portions 23 are being formed or stamped.

In order that the rod 12 may be held in the position shown in Fig. 1, indentations 30, of a curvature to fit that of the inwardly bent portions 23, are provided in the rod 12 transversely of the longitudinal axis thereof so that the inwardly bent portion 23 will engage them, as clearly shown in Fig 6. Similarly shaped indentations 31 are provided in the rod 12 parallel with its longitudinal axis so that the rod will be held in its out or unfolded position as shown in Fig. 2 when it is moved to that position. This manner of causing the rod 12 to be held either in the folded or unfolded position depends upon the resiliency or tendency for the inwardly curved portions 23 of the handle 10 to move or spring together. It will be readily understood that if the strip of metal which forms the handle 10 is somewhat resilient, and the inwardly bent portions 23 of the strip of metal are formed so that they tend at all times to move together, that the inwardly bent portions 23 will engage the notches 30 and 31 in the rod 12, and will thereby effectively hold the rod 12 in the desired positions. It will be understood that the rod may be turned relative to the handle 10 by putting sufficient pressure or force upon the end of the key to cause the inwardly bent portions 23 to be somewhat sprung apart while the rod is being moved. This manner of causing the rod 12 to be held in the folded or unfolded position is particularly effective, simple, and inexpensive, as it requires no complicated construction and eliminates the use of a separate resilient member. The indentations 30 and 31 are preferably formed in the rod 12 at the same time that the projections 24 are formed.

The bottle-opener 14 on the rod 12 is a flat portion or blade formed so as to have a point 35 and so as to have sharpened edges 36. A notch 37 in the blade makes it form a hook, as clearly shown in Figs. 2, 7 and 8. When it is desired to remove the metal cap 40 from the neck 41 of a bottle, the device may be arranged in connection with the metal cap 40 so that the lower edge 42 of the cap extends into the notch 37, as clearly shown in Fig. 7. When the device is thus arranged in connection with the metal cap 40 it will be readily understood how upward movement of the device, in the direction indicated by the arrow in Fig. 7, will cause lifting or removal of the

cap from the neck of the bottle. When the device is being used in this manner the end portions 16, of the strip of metal, engage the top of the metal cap 40 and form a pivot point for the device, while the looped portion 15 forms a convenient handle for operating or moving the device.

When it is desired to remove the paper cap from a milk bottle or the like, the bottle-opener 14 may be easily pushed through the paper cap so that the paper cap 43 may be easily pulled from the bottle 44 when the hook engages the cap 43, as shown in Fig. 8. The point 35 and the sharpened edges 36 make it particularly easy to push the bottle-opener through a paper cap. When the device is being used in this manner the looped portion 15 of the metal strip forms an effective and convenient handle.

The key 13 is adapted to remove the top 50 of a can 51, by engaging and gripping the tab 52, which extends from one corner of the top 50, and then causing the top 50 to be rolled onto the key by suitable rotation thereof. Cans adapted to be opened in this manner are in common use and the tabs 52 which extend from the tops 50 of such cans are usually continuations of the sheet of metal which forms the top 50 and are readily received in the tapered slot 54 in the outer end of the key 13. The top 50 of the can may be easily removed by gripping the tab 52 in the slot 54 and then rotating the key so as to cause the top to be rolled onto the round body 13 thereof. The slot 54 in the key 13 extends diametrically across the key and is tapered as clearly shown in the drawings. The slot being tapered will engage a tab 52 and firmly pinch or grip it so as to positively prevent its slipping out of or through the slot during the opening of the can. When the can is opened, and it is desired to remove the key therefrom, the key may be very easily released from the tab by movement of the key away from the tab 52 so that it will be no longer pinched or gripped in the slot. Due to the fact that the outer portion of the key 13 is tapered as clearly shown in the drawings, it is particularly easy to remove or withdraw the key from the top 50, of the can, even though the top has been tightly rolled upon the key during the opening of the can. The taper of the outer portion of the key 13 and the taper of the slot 54 are particular and important features of the invention as they make the key particularly effective in its operation and very easily removed from the can after it has been opened. It will be readily understood from the drawings how the handle 10 provides a convenient and effective handle for the operation of the key 13, thereby making the key easily and conveniently operated.

In Fig. 10 is shown a form in which the key 13 may be advantageously embodied. As clearly shown in Fig. 10, the key and the handle 70 are formed from a single strip or rod of metal, preferably round in cross-section, one end of the rod being looped to form the handle 70 while the other end is provided with tapered slots 72 so as to operate in the same manner as the form of key hereinabove set forth. The key 13, when embodied in the form shown in Fig. 10 is particularly easily operated, is neat, and very inexpensive to manufacture.

Having described a preferred form of the invention, I do not wish to limit myself to the specific details hereinabove set forth, but wish to reserve to myself any changes or modifications that may appear to those skilled in the art or fall within the scope of the following claims.

Having described a preferred form of my invention, I claim:

1. In a device of the character described, a key the outer portion of which is tapered and has in it a tapered slot, the key having in it longitudinal and transverse indentations, projections extending from the key, and a handle pivotally carrying the key so that it can be folded into or made to extend from the handle, the handle having side members with opposite inwardly-extending portions adapted to engage either the longitudinal or transverse indentations in the key and thereby lock the key either in the extended or folded position, the inwardly-extending portions of the side members having in them holes adapted to pivotally carry the projections extending from the key.

2. In a device of the character described, two members, one of said members being a handle, the other member having in it intersecting indentations, projections extending from said other member at the intersection of the indentations, the handle member having side parts with opposite inwardly extending portions having holes, said other member being arranged between the side parts of the handle with the projections in the holes to pivotally connect the members, said inwardly extending portions cooperating with the indentations to hold said other member in predetermined positions relative to the handle member.

In witness that I claim the foregoing I have hereunto subscribed my name this 24th day of November, 1919.

ABNER R. NEFF.

Witness:
VIRGINIA BERINGER.