Dec. 11, 1962 KAZUO TANUMA 3,067,909

CAN OPENING TOOL

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Fig. 1.

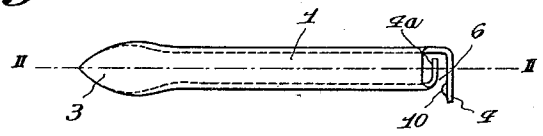


Fig. 2.

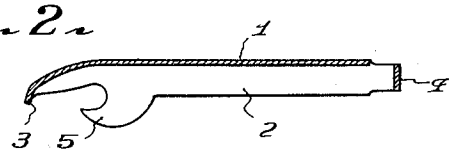


Fig. 3.

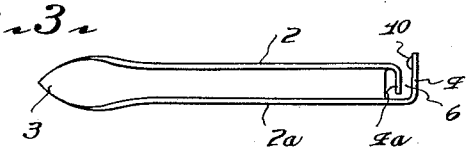
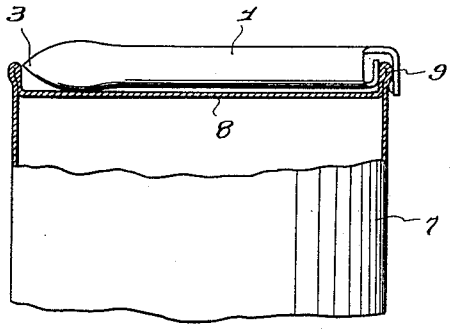


Fig. 4.



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Fig. 5.

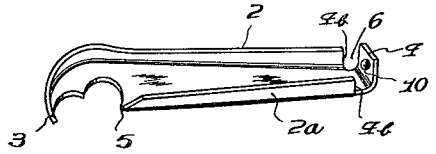


Fig. 6.

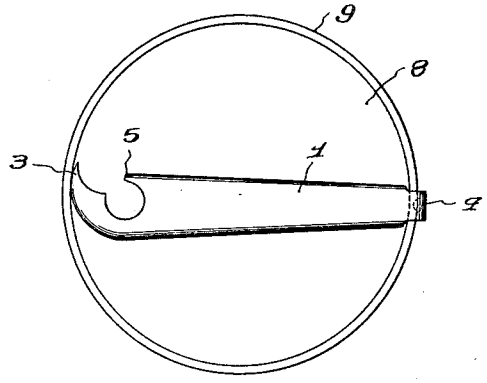
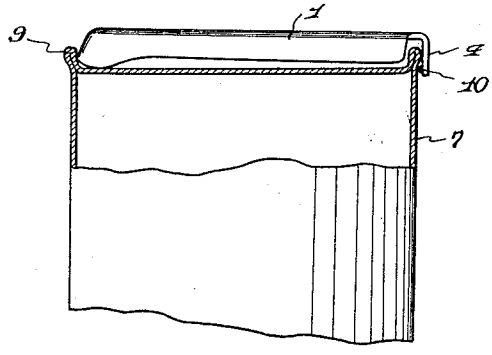


Fig. 7.



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CAN OPENING TOOL

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1 Claim. (Cl. 220—48)

The present invention relates to improvements in can container opening tools, and more particularly to improvements in a lever-action disposable, hole opener for producing a pouring opening in can containers such as beer cans, fruit and vegetable juice cans, and other cans in general.

It is an object of this invention to provide a disposable hole opener of simple construction which can be attached for storage until use in a simple manner to the edge of any desired can container in such a position that addition thereby to the outer contour of the said container is negligible and can be detached at will therefrom in a simple manner for use, yet cannot be dislodged accidently from the said attached position unless the said opener is subjected to considerable force.

The above object has been achieved by the hole opening tool of the present invention, which is formed out of a single piece of metal or other hard material, and which comprises a puncturing point at its working end, a catching claw part for engagement under the sidewardly projecting seam bead of a can container so as to provide a fulcrum about which the said tool may be rotated to force the said puncturing point to open a hole in the said container, and a fastening clamp means provided on its tail end, comprising a bent-over jaw flange and an opposite jaw disposed so that the jaw opening corresponds to the width of the rim of the cap at the end of the said can container, said clamp means enabling the opening tool to be attached snugly to the said container by clipping said clamp means onto the said end rim.

As one embodiment of the present invention, the opening tool may be made with two side flank walls, and the tail end of one flank wall bent over to form an outer flange jaw and the tail end of the other flank wall similarly bent over to form the opposing jaw, but so as to provide a jaw opening for clipping onto the rim of the aforesaid can cap; or the said clamp jaw may be formed by the said bent-over flange of the first flank wall and the tail butt end of the other flank wall, with the said jaw opening provided therebetween.

The details of the invention will be more clearly apparent by reference to the following detailed description of a few representative embodiments of the invention when taken in connection with the accompanying illustrations in which:

FIG. 1 is a plan view of one embodiment of the present invention;

FIG. 2 is a vertical elevational view, in section, taken along the line II—II of FIG. 1;

FIG. 3 is a view showing the reverse side of FIG. 1;

FIG. 4 is an elevational view of the hole opening tool of FIGS. 1 through 3 in its condition of attachment, until use, to a can container, the said container being shown with its upper portion in section and with its lower portion cut away;

FIG. 5 is a perspective view of another embodiment of the present invention;

FIG. 6 is a plan view of the embodiment of FIG. 5 in its condition of attachment, until use, to a can container;

FIG. 7 is an elevational view of FIG. 6, with the can container shown in section and with its lower portion cut away.

Referring to FIGS. 1 through 3, the hole opening tool

for cans of the embodiment illustrated therein comprises a metal piece 1 formed in one piece with flank walls 2 and 2*a* and a puncturing point 3 at the working tip, the working ends of the said flank walls being formed into catching claws 5, which are operated in coordinated action with the puncturing point 3. The tail ends of both said flank walls are bent inwardly to form clamp jaw flanges 4 and 4*a*, respectively, with a jaw opening gap 6 such that the said jaw flanges may clamp and hold, with elastic force, the rim of the end cap of a can.

The use of the hole opening tool for cans of the embodiment as illustrated in FIGS. 1 through 3 may be described as follows:

If this hole opening tool is attached to a can 7, as shown in FIG. 4, by pressing its gap 6 onto rim 9 of the cap 8 of the can 7, the hole opening tool will be held intimately and securely within the concavity of the cap 8 by the powerful elastic force exerted by jaw flanges 4 and 4*a*; and, unless a powerful force by hand is applied on the hole opening tool, it cannot be dislodged accidently by such effects as movements and impacts occurring during transportation. Consequently, the hole opening tool of the present invention is extremely advantageous when used as a service accessory item for can containers.

In the operation of the present hole opening tool, the catch claws 5 are engaged under the rim 9 of the can cap, similarly as in the case of ordinary, conventional can openers, the puncturing point 4 is pressed against the can cap, and a hole is made therein by raising the tool in lever action.

The clamping action of the jaws at the tail end of the embodiment illustrated in FIGS. 1 through 3 with respect to the rim of the can cap may be made even more effective by providing, as shown in figures a protrusion 10 on the inner side of the bent-over jaw flange 4 by press-work, as or welding, etc. This protrusion 10 may be formed on the outer side of jaw flange 4*a*.

FIG. 5 illustrates another embodiment of the present invention with the same reference numerals affixed, respectively, to similar parts. In this hole opening tool, the tail end of the main web portion is bent to form the clamp jaw flange 4, and the tail butt ends of the flank walls 2 and 2*a* are terminated in such a manner as to provide jaw gap 6 between said butt ends and flange 4. The working end of the main web part is provided with a puncturing point 3 and, in the vicinity thereof, a catch claw 5 which is operated is coordinated action with puncturing point 3. The inner side of the clamp jaw flange 4 may be provided with protrusion 10 formed by press-working.

The attaching of the tool of FIG. 5 is exactly the same as that of the embodiment of FIGS. 1 through 3. As indicated in FIGS. 6 and 7, this attachment is effected by clamping the gap 6 onto the rim 9 of the cap 8 of the can 7. The operation of the tool of FIG. 5 in opening a hole in a can is exactly the same as that for the tool of FIGS. 1 through 3.

Since it is obvious that many changes and modifications can be made in the above described details without departing from the nature and spirit of the invention, it is to be understood that the invention is not to be limited to the details described herein except as set forth in the appended claim.

What I claim is:

An elongated can opening tool for opening can containers having an elongated sheet metal body, said body comprising a central longitudinal rib portion, a pair of integrally formed laterally opposing side flank walls, a relatively narrow fastening clamp structure adjacent the remote tail end of said body, said fastening clamp structure comprising a straight connecting portion formed integrally with one of said opposing side flank walls at its

rearward end and projecting rearwardly from the tail of said body in a direction generally parallel and axially to the length of the body, a substantially straight elongated first lateral flange portion formed integrally with the rearward end of said connecting portion and extending laterally across the tail end of said body in spaced relation to said body, a protrusion on said straight first flange portion protruding toward said body, a substantially straight second lateral flange portion formed integrally with said other of said opposing side flank walls and extending laterally across the tail end of said body substantially at the tail end of said body whereby said first lateral flange portion and said second lateral flange portion are spaced relative to one another with their space between forming a gap for receiving the rim of a container whereby the body of the tool may be detachably mounted substantially flush with the end walls of a container by

the rim of the container being pressed into the gap in the fastening clamp structure with the second lateral flange portion frictionally engaging the inner side of the rim of the container and the protrusion on the first lateral flange engaging the outer side of the rim of the container to frictionally retain the tool to the container in flush relationship.

References Cited in the file of this patent

UNITED STATES PATENTS

864,522	Fales	Aug. 27, 1907
1,214,823	Privett	Feb. 6, 1917
2,283,210	Hunter	May 19, 1942

FOREIGN PATENTS

705,243	Great Britain	Mar. 10, 1954