Dec. 17, 1963 W. H. SAUTER 3,114,480

COMBINED CAN OPENER AND POURING DEVICE

Filed Nov. 18, 1960

FIG. 1

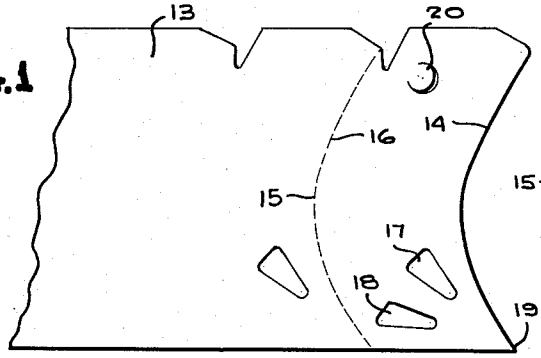


FIG. 2

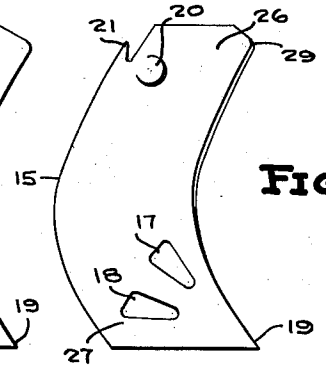


FIG. 3

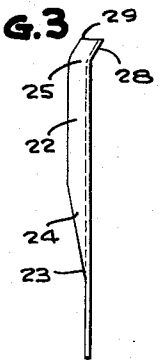
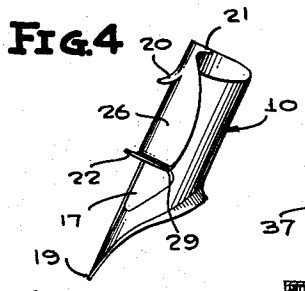


FIG. 4



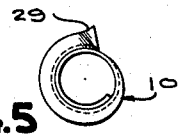


FIG. 5

FIG. 6

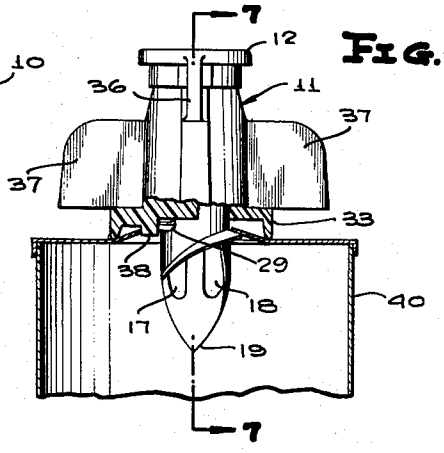


FIG. 7

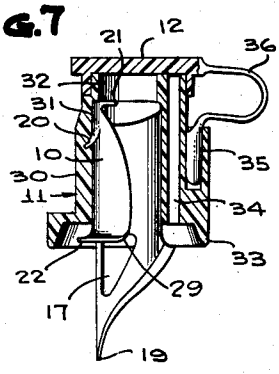


FIG. 8

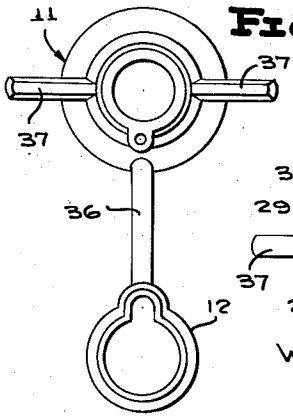
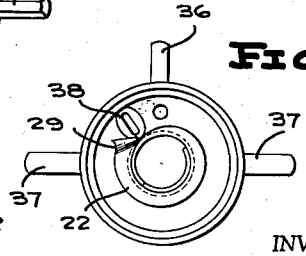


FIG. 9



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3,114,480

COMBINED CAN OPENER AND POURING DEVICE

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1 Claim. (Cl. 222—90)

This invention relates to a device for making an opening in a can and providing a pouring spout.

This is a continuation-in-part of United States application 688,664, filed October 7th, 1957, now abandoned.

Previously proposed devices of the type described have suffered from various disadvantages. The device will not readily penetrate the can, or once the can has been penetrated the device does not remain securely in position with the result that there is leakage, or the device does not permit the full extraction of the contents of the can. In addition previously proposed devices have been unduly costly to fabricate.

An object of this invention is to provide a device which will overcome the foregoing disadvantages.

In accordance with one aspect of this invention a combined can opener, pouring device and closure comprising a cylindrically shaped penetrating member, a clamping and edge shaping member encircling said penetrating member, said clamping and edge shaping member comprising a flange shaped to provide a single turn of a screw thread, a sleeve for said penetrating member and clamping and edge shaping member, said sleeve including a closure and having an annular sealing skirt having a bearing portion adapted to bear on the surface of the can being opened and being spaced from said flange to provide a fulcrum action, the flange that forms said screw thread extending from below the level of said bearing portion to above the level of said bearing portion to create a tight closure and to deform the edge of an aperture in said can outwardly with respect to the interior of the can, said penetrating member having at least one passage at the upper end of the portion of the penetrating member which is adapted to be inserted within the can for the passage of the contents of the can from outside the penetrating member to within the penetrating member.

In accordance with this invention in another aspect a device of the type described comprising a unitary metal strip formed as a cylinder and shaped to provide a point for penetrating a can and a flange along part of the lower edge of said strip spaced from said point, said flange providing part of a screw thread and being adapted to engage the edge of an aperture in a can made by said point and to deform said edge outwardly, a sleeve having a handgrip, a bore to engage with the cylindrically formed metal strip to enable the contents of the can to be extracted, and having an annular skirt at its lower edge spaced from said cylindrically formed metal strip to give a seal and to permit deformation of the edge of said can.

In the drawings which illustrate the preferred embodiment of this invention:

FIGURE 1 is a plan view of a sheet of metal partially stamped to illustrate the manner in which one component of a device in accordance with this invention is manufactured.

FIGURE 2 is a plan view similar to FIGURE 1 but showing a further stage in the fabrication of said component.

FIGURE 3 is a side elevation view corresponding to FIGURE 2.

FIGURE 4 is a perspective view of the component shown in FIGURES 1 to 3 but illustrating a later stage in its fabrication.

FIGURE 5 is an end view of the component shown in FIGURE 4.

FIGURE 6 is an elevation view partially in section of a device in accordance with this invention shown with a closure cap in closed position.

FIGURE 7 is partially a sectional elevation view on the line 7—7 of FIGURE 6.

FIGURE 8 is a top plan view of the device shown in FIGURE 6 but illustrated with its closure cap in open position.

FIGURE 9 is a bottom plan view of the device shown in FIGURE 6.

The drawings illustrate a device for opening a can and providing a pouring device comprising a penetrating and clamping and edge shaping member generally indicated at **10**, a sleeve including grip means and a sealing skirt generally indicated at **11**, and a removable cap shown at **12**.

As illustrated by FIGURES 1, 2 and 3 the penetrating and clamping and edge shaping member **10** can readily be stamped from a strip of metal. In FIGURE 1, strip **13** is cut to provide curved edge **14** which defines the lower edge of said member **10**. The upper edge **15** of said member **10** is defined by a cut indicated by dotted line **16** which defines also the lower edge of an adjacent blank for said member **10**. Apertures **17** and **18** are provided adjacent to but spaced from penetrating point **19** to facilitate flow from the exterior to the interior of said member **10** during pouring. A struck up portion **20** assists in securing said member **10** against rotation in sleeve **11** and projection **21** further provides against rotation and is subsequently embedded in sleeve **11** to prevent accidental withdrawal of said member **10** from sleeve **11**. The lower edge **14** of the blank is bent as illustrated in FIGURES 2 and 3 to provide a flange **22** which commences at **23** spaced from penetrating point **19** and has a narrow starting area **24** and a wider portion **25** so as to result in substantially a single turn of a screw thread.

The blank illustrated in FIGURES 2 and 3 is formed as a cylinder with preferably slightly more than half a turn of overlap and with end **26** being lapped outside end **27** as illustrated in FIGURES 4 and 5.

The extreme portion of end **26** is bent inwardly as shown at **28** and the extreme edge of flange **25** is bent upwardly as shown at **29** prior to the formation of the structure shown in FIGURES 4 and 5. Bending portion **28** inwardly facilitates the provision of a tight wrap around structure when FIGURE 4 is formed. Bending portion **29** upwardly contributes to the provision of a stop to limit the extent to which the device can be rotated during its insertion into a can.

Sleeve component **11** can be integrally moulded from synthetic resin and comprises a generally cylindrical portion **30** providing a bore **31** to receive said member **10**. The upper part **32** of bore **31** is of reduced interior diameter to provide a back stop when point **19** is being driven into a can. The upper part **32** is also of reduced exterior diameter to give a seat for cap **12**. At the lower end of sleeve component **11** there is an annular sealing skirt **33** which seals and also is a fulcrum during deformation of the edge of an aperture in a can. Skirt **33** is spaced from member **10** to leave room for flange **22** and the deformed edge of an aperture in a can. Bore **34** acts as a vent hole while the contents of a can are being poured through bore **32**. At **35** a socket is formed to engage a retainer strip **36** of cap **12**, sleeve **11** also includes wings **37** which afford a convenient hand grip. A stop member **38** is moulded as part of sleeve **11** and is abutted by upwardly bent portion **29** of flange **22** so as to limit the rotation of the device. The upward bending of portion **29** prevents the edge of the aperture in a can from riding over stop **38**. The stop prevents over turning of the device which might otherwise have a loosening effect.

In operation the device is pressed with point **19** against

the centre of the top of a can and when an aperture has been made, the device is rotated in a clockwise direction about three-quarters of a turn until the stop is reached. At this stage about a quarter to half of the edge of the aperture in a can **40** will have been outwardly deformed and will be engaged by flange **22**. This enables the contents of the can to be completely emptied without waste and also the natural springiness of the material from which the can is made is utilized to maintain a tight seal between lip **33** and the top of can **40**. The device can readily be removed from the can by being turned counter-clockwise.

I claim:

A device for opening a can and providing a pouring spout comprising a unitary metal strip formed as a cylinder and shaped to provide a point for penetrating a can and a flange along part of the lower edge of said strip spaced from said point, said flange providing part of a screw thread and being adapted to engage the edge of an aperture in a can made by said point and to deform said edge outwardly, a stop means at the end of said flange adapted to engage the edge of the aperture of said can and to limit the rotation of said device in a tightening direction of said screw thread to part of a turn, a sleeve having a handgrip, a bore to engage with the cylindrically formed metal strip to enable the contents of the can to be extracted, and having an annular skirt at its lower edge spaced from said cylindrically formed metal strip to give a seal and to permit deformation of the edge of the aperture of said can.

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