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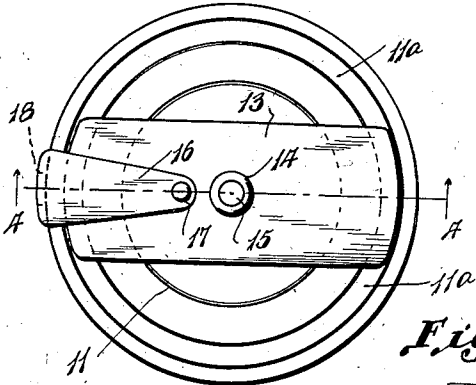
P. KMETKO ET AL

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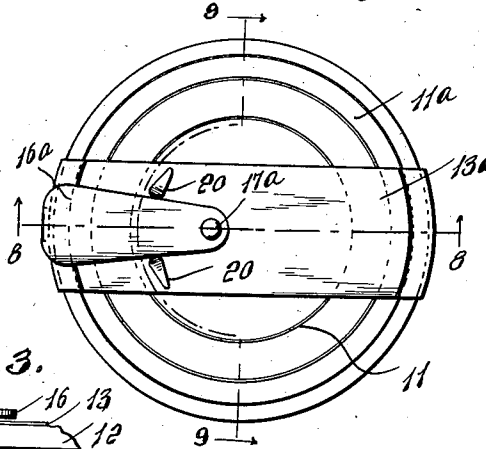
CAN PUNCTURING AND CLOSING MEANS

Filed July 17, 1936

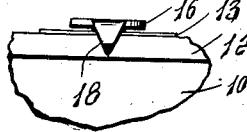
*Fig. 1.*



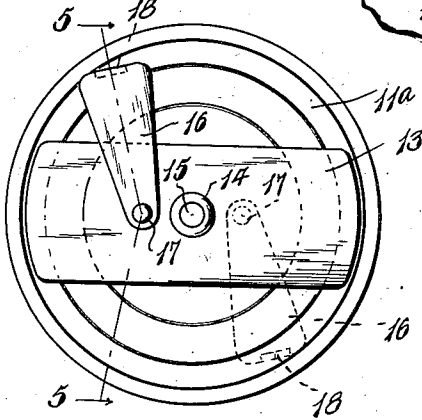
*Fig. 6.*



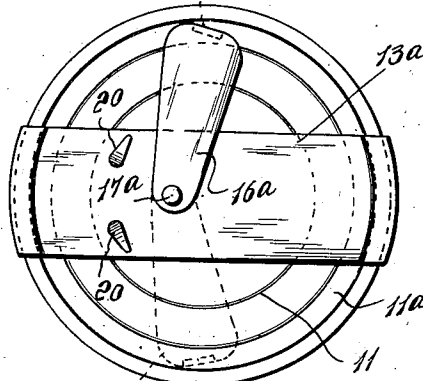
*Fig. 3.*



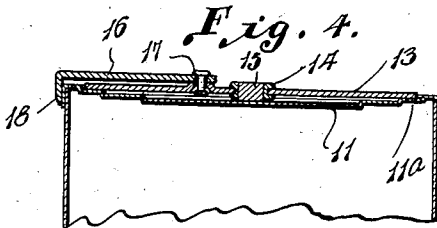
*Fig. 2.*



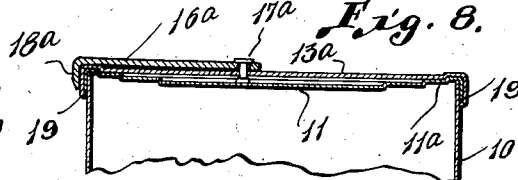
*Fig. 7.*



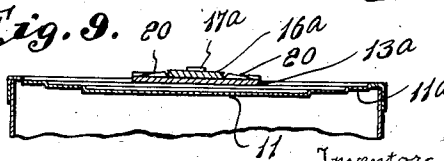
*Fig. 4.*



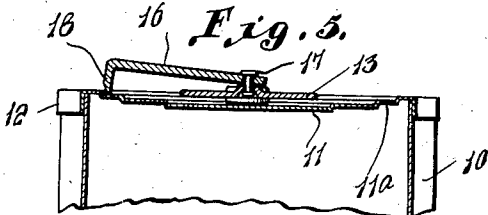
*Fig. 8.*



*Fig. 9.*



*Fig. 5.*



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## UNITED STATES PATENT OFFICE

2,072,002

## CAN PUNCTURING AND CLOSING MEANS

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Application July 17, 1936, Serial No. 91,187

10 Claims. (Cl. 220—51)

This invention relates to certain new and useful improvements in can puncturing and closing means.

The primary object of the invention is to provide can puncturing and closing means especially designed for association with fluid containing cans, such as cans containing evaporated milk and the like, the can to be punctured to facilitate discharge of the fluid contents with the punctures or openings adapted to be closed when the can is out of use for the preservation of the fluid contents.

Another object of the invention is to provide can puncturing means of the foregoing character wherein the puncturing and closing means may be either permanently attached to the can or sold as an independent article of manufacture for attachment to a can and removal therefrom.

With the above and other objects in view that will become apparent as the nature of the invention is better understood, the same consists in the novel form, combination and arrangement of parts hereinafter more fully described, shown in the accompanying drawing and claimed.

In the drawing:—

Figure 1 is a top plan view of a can having the puncturing and closing device permanently attached thereto, showing the pivotally mounted closing plate and the puncturing arm pivoted thereto at a point one side of the plate pivot;

Figure 2 is a top plan view, similar to Figure 1, showing the puncturing arm shifted to a position for puncturing an opening in the can top and further illustrated in dotted line positions for punching a diametrically opposite opening;

Figure 3 is a fragmentary side elevational view showing the prong of the puncturing arm normally overhanging the edge of the can when out of use;

Figure 4 is a vertical cross-sectional view taken on line 4—4 of Figure 1, showing the pivotal connection between the puncturing and closing means and the can top with the puncturing arm having its prong overhanging the edge of the can;

Figure 5 is a cross-sectional view taken on line 5—5 of Figure 2, showing the puncturing arm shifted to a position for puncturing an opening in the top of the can;

Figure 6 is a top plan view, similar to Figure 1, showing another form of punching and closing means that is movably attached to a can end;

Figure 7 is a top plan view, similar to Figure 6, showing the puncturing arm in position for puncturing an opening in the top of the can and il-

lustrating the puncturing arm in dotted lines in a diametrically opposite position;

Figure 8 is a cross-sectional view taken on line 8—8 of Figure 6; and

Figure 9 is a cross-sectional view taken on line 9—9 of Figure 6.

Referring more in detail to the accompanying drawing and particularly to Figures 1 to 5, the reference character 10 designates a metallic can or receptacle of the type usually employed for containing evaporated milk or the like, the head or end 11 of the can being illustrated as of stepped formation with the usual overhanging flange 12 that is soldered or otherwise secured in position.

The puncturing and closing attachment for the can comprises an oblong plate 13 of a length to rest upon the step 11a at its end, the plate 13 centrally carrying a hollow rivet or eyelet 14 adapted to receive solder 15 or the like as shown in Figure 4 for securing the plate 13 to the can end 11. The plate 13 is rotatable upon the eyelet or rivet 14 that in turn is anchored to the can end by means of the solder filling 15.

A puncturing arm 16 is carried by the plate 13, the same being preferably of the configuration illustrated in plan view in Figures 1 and 2 and having one end thereof pivoted as at 17 to the plate on the longitudinal axis of the plate and at one side of the plate pivot. A downwardly extending puncturing prong 18 is carried by the other end of the arm 16 and said arm is of a length when aligned with the longitudinal axis of the plate 13 to present the puncturing prong in overhanging relation relative to the flange 12 of the can end 11 as illustrated in Figures 1, 3 and 4.

The puncturing arm 16 is illustrated in Figures 1, 3 and 4 in its inoperative position with the puncturing prong 18 overhanging the edge of the can and in a position to eliminate accidental puncturing of the can end. The arm 16 is of a length to cause the puncturing prong 18 to lie in close contact with the flange 12 of the can end so as not to interfere with adjacently stacked cans. When it is desired to puncture the can end 11 for the discharge of the fluid contents, the arm 16 is slightly elevated at its outer end to move the lower end of the prong 18 upwardly into the plane of the can end, the arm 16 being then moved on its pivotal mounting 17 to the position shown by full lines in Figure 2. Pressure on the outer end of the arm 16 causes the prong 18 to puncture an opening in the can end 11. The arm 16 is then returned to its

inoperative position shown in Figure 1 and the plate 13 rotated on its pivotal mounting 14 so that the puncturing arm 16 can assume the dotted line position shown in Figure 2 for puncturing a second opening in the can end diametrically opposite the first opening. The fluid contents of the can can then be dispensed at will and when the can is out of service, the plate 13 is rotated to cause the ends thereof that rest upon the end step 11a to close the punctured opening.

In the form of invention illustrated in Figures 6 to 9, the puncturing and closing means is in the form of a removable attachment that may be purchased independently of a can and used indefinitely. The oblong plate 13a is constructed for wiping contact with the step 11a of the can end 11 and opposite ends of the plate 13a carry depending flanges 19 that have snap engagement with the flanges 12 on the can end 11, the plate 13a being readily detachable from and placed upon the can end. The puncturing arm 16a is pivotally attached at its inner end as at 17a to the plate 13a on the longitudinal axis thereof and at one side of the center, the outer end of the arm 16a carrying a prong 18a. A pair of upstanding bosses 20 is carried by the plate 13a respectively at opposite sides of the longitudinal center line and at points between the puncturing arm pivot 17a and the adjacent end of the plate as shown in Figures 6 and 7 and over which the puncturing arm 16a selectively rides to be elevated for automatically placing the prong 18a in the plane of the end of the can. The puncturing arm 16 may be shifted from its inoperative position as shown in Figure 6 with the prong 18a overhanging the edge of the can to the full and dotted line position shown in Figure 7 for puncturing diametrically opposite openings in the step 11a of the can end 11 and when the can is out of use, the plate 13a may be rotated upon the end of the can for closing the punctured openings.

In each form of the invention the puncturing arm 16a is pivoted to a closure plate for the punctured opening at one side of the center line of the plate and each arm is of a length to cause the puncturing prong to overhang the edge of the can and to be out of the way when the can is out of use and to eliminate accidental puncturing of an opening in the can end. One form of the invention shows the puncturing and closing means as permanently attached to the can, while the other form discloses the same as an attachment for removable placement thereon.

While there are herein shown and described the preferred embodiments of the invention, it is nevertheless to be understood that minor changes may be made therein without departing from the spirit and scope of the invention as claimed.

We claim:—

1. Can puncturing and closing means of the character described comprising in combination with a can, a plate rotatable on one end of the can, a puncturing arm pivoted at one end on the plate at one side of the transverse center line thereof, a puncturing prong depending from the outer end of the arm, said arm being of a length to present the prong in overhanging relation to the end of the can, to occupy a position adjacent the side of the can when out of use, the plate and arm being movable relative to the can for the puncturing of the can by the arm and the closing of the openings by the plate.

2. Can puncturing and closing means of the character described comprising in combination with a can, a plate rotatable on one end of the can, a puncturing arm pivoted at one end on the plate at one side of the transverse center line thereof, a puncturing prong depending from the outer end of the arm, said arm being of a length to present the prong in overhanging relation to the end of the can to occupy a position adjacent the side of the can when out of use, the plate and arm being movable relative to the can for the puncturing of the can by the arm and the closing of the openings by the plate, the end of the can being of stepped formation with the plate movable in wiping contact with one of the steps.

3. Can puncturing and closing means of the character described comprising in combination with a can, a plate rotatable on one end of the can, a puncturing arm pivoted at one end on the plate at one side of the transverse center line thereof, a puncturing prong depending from the outer end of the arm, said arm being of a length to present the prong in overhanging relation to the end of the can, to occupy a position adjacent the side of the can when out of use, the plate and arm being movable relative to the can for the puncturing of the can by the arm and the closing of the openings by the plate, said plate being of oblong formation, and a center pivot for the plate permanently attaching the same to the can end.

4. Can puncturing and closing means of the character described comprising in combination with a can, a plate rotatable on one end of the can, a puncturing arm pivoted at one end on the plate at one side of the transverse center line thereof, a puncturing prong depending from the outer end of the arm, said arm being of a length to present the prong in overhanging relation to the end of the can to occupy a position adjacent the side of the can when out of use, the plate and arm being movable relative to the can for the puncturing of the can by the arm and the closing of the openings by the plate, the end of the can being of stepped formation with the plate movable in wiping contact with one of the steps, said plate being of oblong formation and a center pivot for the plate permanently attaching the same to the can end.

5. Can puncturing and closing means of the character described comprising in combination with a can, a plate rotatable on one end of the can, a puncturing arm pivoted at one end on the plate at one side of the transverse center line thereof, a puncturing prong depending from the outer end of the arm, said arm being of a length to present the prong in overhanging relation to the end of the can, to occupy a position adjacent the side of the can when out of use, the plate and arm being movable relative to the can for the puncturing of the can by the arm and the closing of the openings by the plate, said plate being of oblong formation, a center pivot for the plate permanently attaching the same to the can end, including an eyelet carried by the plate and upon which the latter is rotatable and an anchor connection between the eyelet and can end.

6. Can puncturing and closing means of the character described comprising in combination with a can, a plate rotatable on one end of the can, a puncturing arm pivoted at one end on the plate at one side of the transverse center line thereof, a puncturing prong depending from the outer end of the arm, said arm being of a length

to present the prong in overhanging relation to the end of the can to occupy a position adjacent the side of the can when out of use, the plate and arm being movable relative to the can for the puncturing of the can by the arm and the closing of the openings by the plate, the end of the can being of stepped formation with the plate movable in wiping contact with one of the steps, said plate being of oblong formation and a center pivot for the plate permanently attaching the same to the can end, including an eyelet carried by the plate and upon which the latter is rotatable and an anchor connection between the eyelet and can end.

7. Can puncturing and closing means of the character described comprising in combination with a can, a plate rotatable on one end of the can, a puncturing arm pivoted at one end on the plate at one side of the transverse center line thereof, a puncturing prong depending from the outer end of the arm, said arm being of a length to present the prong in overhanging relation to the end of the can, to occupy a position adjacent the side of the can when out of use, the plate and arm being movable relative to the can for the puncturing of the can by the arm and the closing of the openings by the plate, said plate being of oblong formation and depending flanges at the ends of the plate for removable engagement with the end of the can.

8. Can puncturing and closing means of the character described comprising in combination with a can, a plate rotatable on one end of the can, a puncturing arm pivoted at one end on the plate at one side of the transverse center line thereof, a puncturing prong depending from the outer end of the arm, said arm being of a length to present the prong in overhanging relation to the end of the can to occupy a position adjacent the side of the can when out of use, the plate and arm being movable relative to the can for the puncturing of the can by the arm and the closing of the openings by the plate, the end of the can being of stepped formation with the plate movable in wiping contact with one of the steps, said plate being of oblong formation and depending flanges at the ends of the plate for removable engagement with the end of the can.

9. Can puncturing and closing means of the

character described comprising in combination with a can, a plate rotatable on one end of the can, a puncturing arm pivoted at one end on the plate at one side of the transverse center line thereof, a puncturing prong depending from the outer end of the arm, said arm being of a length to present the prong in overhanging relation to the end of the can, to occupy a position adjacent the side of the can when out of use, the plate and arm being movable relative to the can for the puncturing of the can by the arm and the closing of the openings by the plate, said plate being of oblong formation and depending flanges at the ends of the plate for removable engagement with the end of the can, and a pair of raised bosses on the plate respectively at opposite sides of the longitudinal center line of the plate and over which the puncturing arm is movable for raising the end of the puncturing prong to the plane of the can end whereby the puncturing arm may be readily moved over the end of the can into can puncturing position.

10. Can puncturing and closing means of the character described comprising in combination with a can, a plate rotatable on one end of the can, a puncturing arm pivoted at one end on the plate at one side of the transverse center line thereof, a puncturing prong depending from the outer end of the arm, said arm being of a length to present the prong in overhanging relation to the end of the can to occupy a position adjacent the side of the can when out of use, the plate and arm being movable relative to the can for the puncturing of the can by the arm and the closing of the openings by the plate, the end of the can being of stepped formation with the plate movable in wiping contact with one of the steps, said plate being of oblong formation and depending flanges at the ends of the plate for removable engagement with the end of the can, and a pair of raised bosses on the plate respectively at opposite sides of the longitudinal center line of the plate and over which the puncturing arm is movable for raising the end of the puncturing prong to the plane of the can end whereby the puncturing arm may be readily moved over the end of the can into can puncturing position.

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