Feb. 24, 1931. J. H. MILLER 1,794,086

CAN FOR DISPENSING FLUIDS

Filed Sept. 21, 1928

Fig. 1.

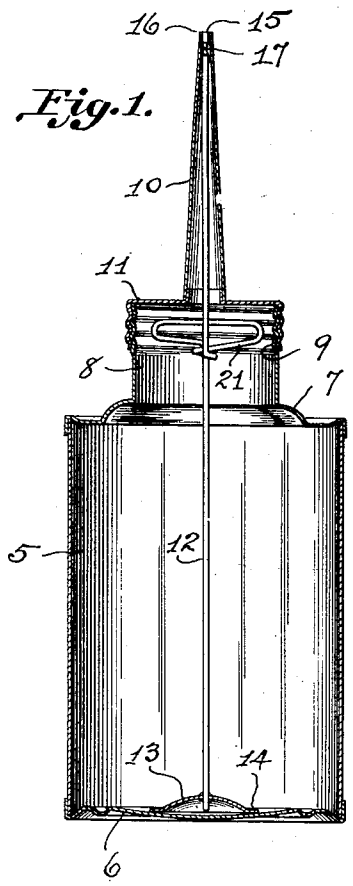


Fig. 2.

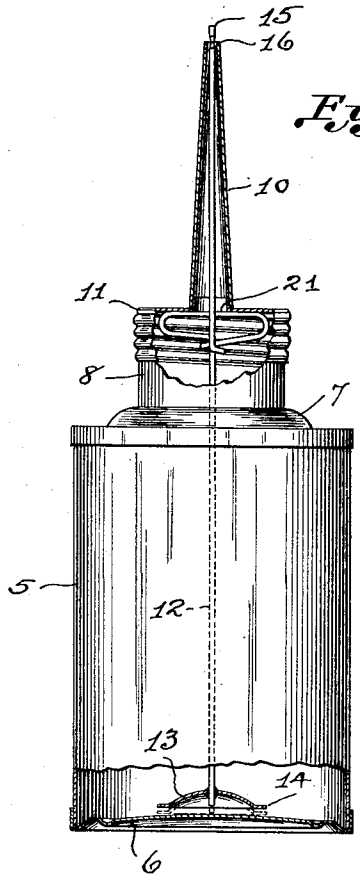
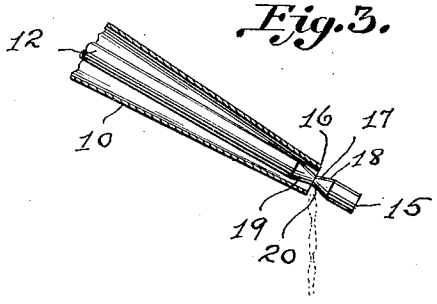


Fig. 3.



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UNITED STATES PATENT OFFICE

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CAN FOR DISPENSING FLUIDS

Application filed September 21, 1928. Serial No. 307,405.

This invention relates to an improved can for dispensing fluids and is particularly designed for dispensing fluids through a nozzle which fluids contain substances that are liable to clog the nozzle outlet.

The object of the invention is to provide an improved device on the interior of the can which may be projected out through the nozzle-outlet to free the latter prior to the dispensing operation.

The invention is illustrated in the accompanying drawing, wherein,—

Fig. 1 shows the complete can in longitudinal section with my improved nozzle opener in the normal retracted position therein.

Fig. 2 illustrates a sectional elevation of the same with the nozzle opener in the projected position to free the nozzle and permit the contents to be discharged, and

Fig. 3 shows an enlarged sectional detail of the nozzle-end with the cleaner-end of the opener in the operating position therein.

Referring to the drawing, the numeral 5 designates a dispensing can-body of sheet metal having a flexible bottom 6 and a breast 7 and throat 8, which latter has exterior screw-threads 9.

A nozzle 10 of a tapered form has a screw-head 11 at its lower larger end so as to screw onto the throat 8.

A stem 12, is provided on the interior of the can and the lower end of this stem is attached to a concavo-convex disk 13, which latter preferably has an annular laterally-extending flat flange 14. This flat flange 14 normally seats on the bottom of the can directly below the nozzle.

The stem 12, extends from the disk up through the throat 8, and up into the nozzle 10.

The upper end 15, of the stem is preferably normally flush with the extreme open end 16 of the nozzle to effect a substantial closure at said end.

Immediately below the extreme end 15 of the stem, I provide the latter with an annular circumferential groove 17. The precise shape of this annular groove 17, is not essential, but I have found it advantageous to form the same with oppositely inclined portions 18 and 19 which produces a greater depth of groove at the point 20, which is midway between the two extremities of the groove, and avoids the formation of any abrupt shoulders either above or below the point 20 of greatest depth.

Between the upper and lower ends of the stem, I provide the same with laterally-projecting stop-means.

In the present instance, this stop means is formed by producing a laterally-extending loop 21 in the stem, which in practice is formed of wire, and which loop is too large to enter the lower larger end of the tapered nozzle 10.

The position of this loop 21 is such that normally it will be slightly below the lower end of the nozzle so that the stem may have a slight movement outwardly through the nozzle before the loop will engage the inner end of the nozzle and form a stop, to limit such outward movement.

This amount of this movement however, is determined by the distance of the annular groove 17 from the outer end 15 of the stem, because it is desired that when the deepest portion 20 of the groove is on a line with the end 16, of the nozzle the stop loop 21 will then be seated at the inner end of the nozzle and prevent the stem from further outward movement.

This permits a portion 18 of the groove to be projected beyond the end 16 of the nozzle but ensures that the other portion 19 of said groove will be immediately at the inside of said open end, as shown in Fig. 3 of the drawing.

Thus contents from the can may flow through the nozzle; pass the inclined part 19 of the groove and discharge at the nozzle end 16 from the portions 20 and 18 of the groove.

The portion 18 of the groove, being inclined, avoids the formation of an abrupt shoulder which might tend to clog the nozzle-end and choke off the flow.

In the operation, after the can has been standing upright, a film of the fluid from the last use, may seal the outlet of the nozzle, but by pressing upwardly under the bottom

6 and bulging the same upwardly, that latter imparts an upward kick to the disk 13, as shown in Fig. 2 of the drawing, which upward kick of the disk moves the stem 12 up and projects the upper end 15 beyond the nozzle-end 16 and clears the latter.

The can may now be inverted and if the nozzle is not entirely free and open another pressure against the bottom will project the stem until the groove 17 of the stem assumes the position shown in Fig. 3, at which time the stop-loop 21, will be seated against the inner end of the nozzle and the stem be held in position to permit the fluid to flow out around the groove and discharge from the nozzle-outlet 16.

The grooved stem therefore acts as a valve to close the nozzle or to open the latter.

Having described my invention, I claim,—

The combination with a can-body having a throat with a screw cap attached thereto and a tapered nozzle opening through the cap and extending outwardly therefrom, of a stem extending through the nozzle and carrying a disk on its lower end which loosely seats on the bottom of the can-body said stem having an annular groove about its circumference slightly spaced from its outer end and normally in the nozzle and the stem having a crosswise-extending stop loop formed therein adjacent to the inner end of the nozzle but spaced from said nozzle-end a distance equal to the distance of the stem groove from the outer end of the nozzle whereby when the bottom of the can is sprung inwardly the disk on the stem will move the stem outwardly until the stop loop in the throat seats across the inner end of the nozzle to bring the groove at the outer end of the stem to the outer end of the nozzle and permit fluid to flow out.

In testimony whereof I affix my signature.

JOSEPH H. MILLER.