Oct. 31, 1939. A. M. NORZA 2,177,874

CAN POURING SPOUT

Filed June 20, 1938

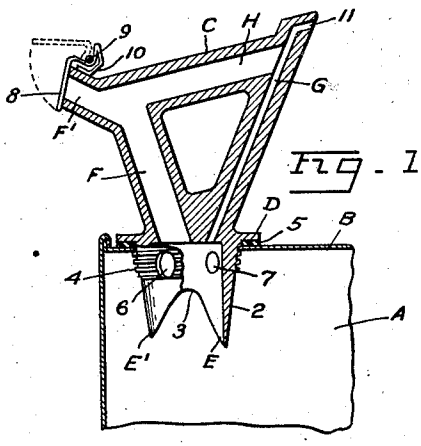


Fig. 1.

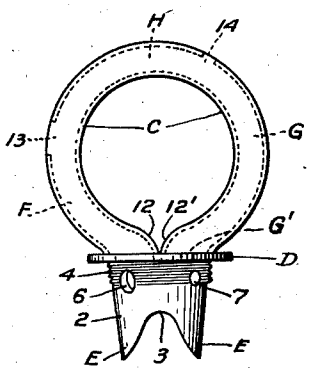


Fig. 3.

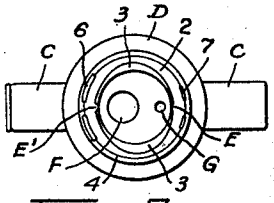


Fig. 2.

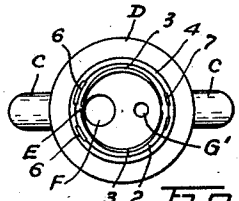
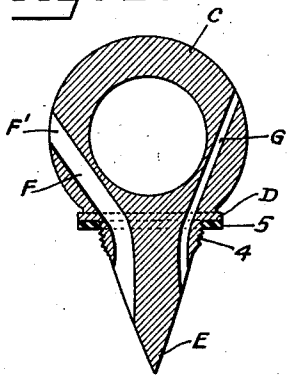
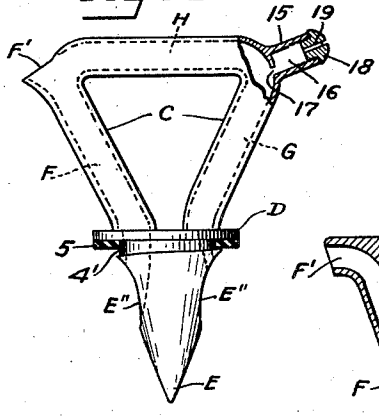


Fig. 4.

Fig. 7.

Fig. 5.





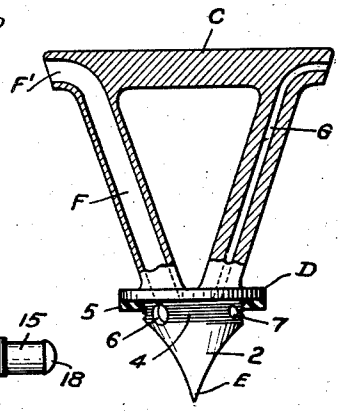


Fig. 9.

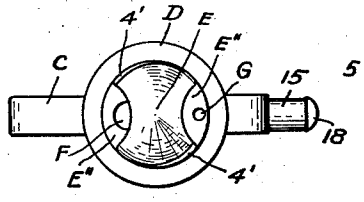


Fig. 8.

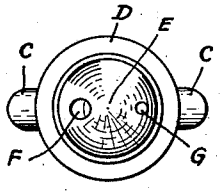


Fig. 6.

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CAN POURING SPOUT

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Application June 20, 1938, Serial No. 214,672

7 Claims. (Cl. 221—23)

This invention relates to spouts for tin cans containing liquids of any kind, particularly milk, olive oil, fruit juices, wine, etc., and the invention has for its principal object a spout device which may be used to puncture the can and also for pouring the liquid from the can while at the same time properly providing for the ingress of air to take the place of the liquid being poured out.

A feature of the invention is to provide both an air admission passage and a liquid outlet passage which will both open to the interior of the can through the base of the spout, yet their outer ends will be widely separated and with the air inlet uppermost when the can is tipped for pouring from the spout.

Another feature of the invention is the provision of a connecting passage in the handle of the device which joints the air inlet passage with the liquid outlet passage so as to run any liquid which might work into the air passage back into the liquid passage.

Another feature is to provide an air passage inlet which will form a trap for any stray liquid. Still another feature is the provision of twin piercing and cutting edges on the can penetrating end of the device, and a final object is simple, inexpensive construction in an article of this kind which is easily kept clean and in sanitary condition for use in dispensing liquid food products.

Other features and advantages of the invention will appear in the following description and accompanying drawing.

In the drawing:

Figure 1 is an elevation of my improved can spout shown partly in section and projecting through the upper end of a can from which it is desired to pour the liquid contents.

Figure 2 is a bottom plan view of the device of Figure 1.

Figures 3 and 4 are respectively a side elevation, and bottom plan views of a modified form of my can spout.

Figures 5 and 6 are respectively a vertical cross section and a bottom plan view of a further modified form of my can spout.

Figures 7 and 8 are respectively a side elevation and bottom plan view of another modified form of my can spout.

Figure 9 is an elevation, partly in section showing another modification somewhat similar to the form of the device shown in Figure 5.

Briefly described, the device comprises a handle for grasping the device and forcing it through the can, a base portion which is formed with a flange to seat against the outer surface of the end or other flat wall of a can, one or more can piercing spurs or cutters for piercing the can, a threaded exterior or a couple of spiral grooves for screwing the flange of the base firmly against the can after puncturing the same by turning the can, and lastly a liquid outlet passage and an air inlet passage, and in its more complete form a drain-back passage extending from the air inlet passage to the liquid outlet passage.

In all of the figures the above elements where they occur are given the same letter designation and the special features or differences are denoted by figures.

In the drawing the can is designated A, its top wall B, the handle of the device C, the base flange D, the can puncturing device E, the liquid outlet passage F, the air inlet passage G, and the drainage connecting passage H.

In all the forms shown the flange D is preferably round and the handle C (when considered as a whole), is flat and extends across the top of the flange, the liquid and air passages are formed in the handle, and the can puncturing prong or cutter E extends from the under side of the flange D.

In the form shown in Figures 1, 7 and 9, the handle is of triangular form when viewed in elevation and has its apex secured to the base, either by being integrally formed therewith, or welded or brazed thereto.

In the form shown in Figures 3 and 5 the handle is a round ring.

In the form shown in Figure 1 two can puncturing prongs are shown, one E' being somewhat shorter than the other, and both taken together form a tapered cylinder 2 sharpened at its outer end and notched at opposite sides as at 3 to form the prongs and which are also sharpened at the edges of the notches so that when the prongs are pushed through a can top (or side wall if a flat can) the handle may be turned to cut out a circle of tin, and upon further turning the device will screw itself into the hole by means of a tapered thread 4 until its flange D, or a washer 5 thereunder, seats tightly against the can and with the pouring end F' of passage F turned to point away from the can as shown in Figure 1.

Cylindrical portion 2 is open below for passage of both liquid and air, but is also preferably provided with extra holes 6 in its sides for liquid and 7 for air.

The design of Figure 1 also has a small metal lid 8 pivotally mounted at 9 over the liquid outlet and which may be swung to the open position dotted, and preferably will stay in either position due to the shape of the thin sheet metal hinge formation 10. In this design the air inlet opening 11 at the upper end of air passage G is considerably elevated over the outer end of the liquid outlet passage F' and the drainage passage runs down hill (as does also the outer end of the liquid passage) so that any liquid in the passages will

easily drain back through the main liquid passage. By having the air passage relatively small as indicated, also its upper end elevated and offset from the connecting passage H, as shown at 11, as well as widely spaced from the liquid passage by reason of the diverging forms of the passages F and G in the handle, I find practically no tendency of the liquid to run out of the air passage when the can is tipped over for pouring.

In the form shown in Figure 3 the handle is a plain hollow ring-shaped tube with its two ends brought together as at 12, 12' and brazed or otherwise secured to the flange D. A liquid outlet hole is formed at 13 at one side of the ring, and a smaller air inlet hole at 14 at the opposite side of the ring-like handle at a more elevated position. The two pointed circular cutters E are here shown both of the same length, but the construction below the flange D is otherwise as described for Figure 1 and similarly numbered.

It is of course evident from a consideration of Figures 1 and 3 that the liquid openings 6 may be placed in the best position to get the last drop out of the can if desired, or in the position shown which will just avoid any sediment.

In the design of Figure 3, since the tubular handle has a uniform bore, it is desirable that the hole through the flange D connecting the air inlet side of the ring bore, be of reduced diameter as shown at G' in Figures 3 and 4.

In the form shown in Figures 5 and 9 the drainage passage H has been omitted for simplicity and cheapening of the construction, and in Figure 5 the passages are almost straight to permit more easily cleaning, as by running a pipe stem cleaning brush through them. In Figure 9 the two pointed arcuate cutter blades or prongs are used as shown in Figures 1 to 4, except that they are arranged at right angles to the plane of the handle C and hence only one is seen in the drawing. It is possible to use but one of these cutters, but two of them, especially if one is longer than the other as shown in Figure 1, works much better.

In Figures 5 and 6 the cutters are dispensed with and a single centrally pointed tapered prong E is used as the can puncturing device, and with the liquid and air passages following down and opening at opposite sides of the prong as indicated. The base of the prong where it joins the flange is provided with a tapered thread 4, the same as for the design of Figures 1, 3 and 9, for screwing tightly into the hole after forming with the prong. It is preferably that the threads be deep and substantially of the square type as indicated in Figure 1, as it holds better, though the V type thread may also be used. Also it is desirable to provide a rubber washer as at 5, though if properly applied, the spout will seat tightly in place without it.

The design shown in Figures 7 and 8 has a can puncturing prong similar to that of Figure 5 except that instead of a thread it has a single spiral groove 4' formed at opposite sides of the prong, and the opposite sides of the prong between these grooves is cut away as at E'', so that after pushing the prong through the can top, it may be firmly clinched in place against the top by giving the spout a quarter turn.

In this design the handle is of triangular form with the passages as described, but the air inlet is formed with an outwardly and upwardly extending nozzle 15 providing an enlarged chamber 16 positioned between a restricted opening 17 and a screw 18 threaded into the outer end of the nozzle and pierced by a small aperture 19. This arrangement forms a trap which aids against any liquid leakage through the air inlet 19.

Having thus described my improved can spout and the manner of its functioning, as well as several modifications of design or arrangement of the various parts, what I claim is:

1. A can spout of the character described comprising a body provided with a base adapted to engage through an opening in a can and formed with a spout having a liquid passage extending through said base, an air inlet passage opening through said base into the can adjacent said liquid passage and open at the outer end of said body at a point remote from said spout and in a position to be elevated therefrom when the can is tipped for pouring, and a passageway within said body connecting both the air inlet passage and the liquid passage at points adjacent their outer ends.

2. A can spout having a base provided with means for puncturing a can and clinching it thereto, a handle extending upward from the base provided with a liquid outlet passage and an air inlet passage passing through the base at their lower ends and diverging upwardly through the handle and opening at remote points thereon, and a handle member connecting the liquid and air passage portions of the handle at points adjacent their outer ends.

3. A can spout having a base provided with means for puncturing a can and clinching it thereto, a handle extending upward from the base provided with a liquid outlet passage and an air inlet passage passing through the base at their lower ends and diverging upwardly through the handle and opening at remote points thereon, and a passage in said handle connecting the liquid and air passages at points adjacent their outer ends, said air inlet passage being relatively small at its outer end and connecting to an enlarged chamber in turn connecting by a smaller opening to said passage.

4. In a can spout as set out in claim 2, the means for clinching the base to the can comprising a pair of spiral grooves, one at opposite sides only of said pointed end adjacent the base, and the air and liquid passages being separated where they enter the can and grooved down the sides of said pointed end intermediate said spiral grooves.

5. A can spout provided with a base adapted for securing into an opening in a can, a handle projecting upward from said base having a substantially inverted U shaped passageway with both ends extending spacedly through said base, and two spaced openings to atmosphere formed in the passageway at spaced points in said handle.

6. In a can spout as set out in claim 2, said handle being substantially triangular with its small end secured to said base, and said passages generally following the margins of the triangle.

7. In a can spout as set out in claim 2, said handle being substantially triangular with its small end secured to said base, and said passages generally following the margins of the triangle with an air inlet and liquid outlet being respectively at opposite upper corners of the triangle.

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