

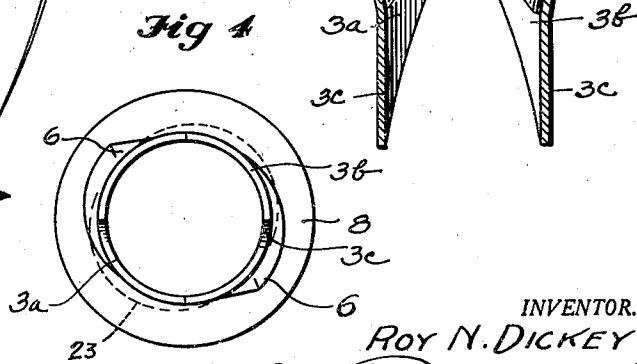
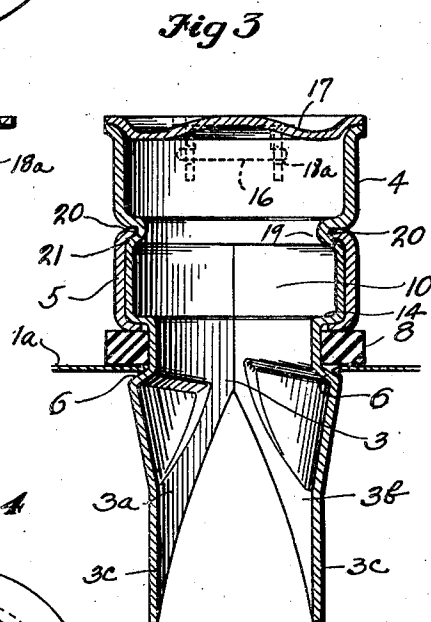
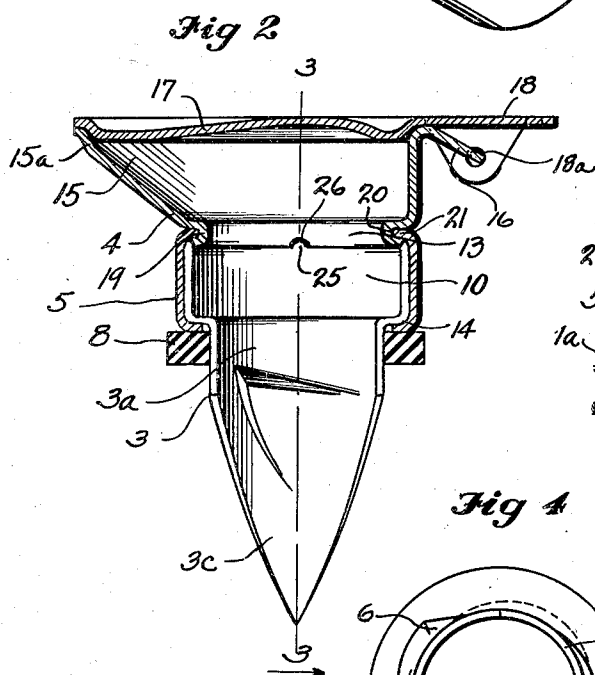
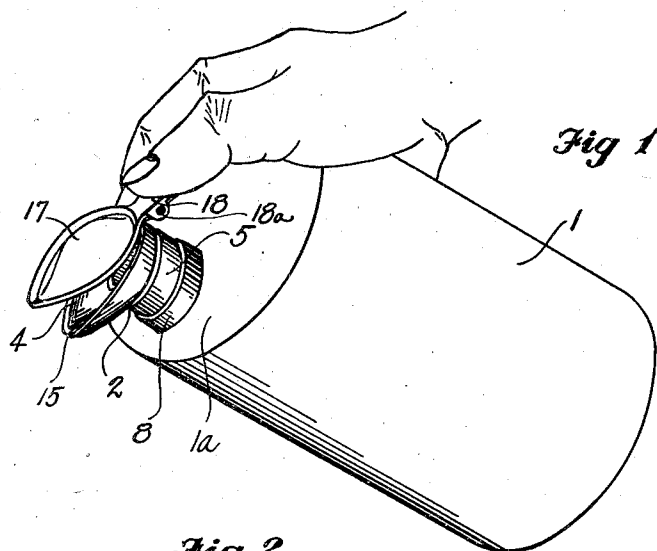
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DETACHABLE POURING SPOUT

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DETACHABLE POURING SPOUT

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8 Claims. (Cl. 221-23)

This invention relates to improvements in detachable pouring spouts, and it has reference more particularly to spouts of that kind adapted to be removably applied to cans or containers such as those now in general commercial use for cooking oils, condensed milk, and the like, and which spouts are adapted to be applied by projecting a shank portion thereof through the can end wall.

It is the principal object of this invention to provide a can spout of the above stated character embodying certain improved details of construction whereby its application to a can is easily and readily effected and in a manner that insures a secure and non-leaking connection, and a ready removal for use on other cans.

Another object of this invention resides in the provision of a pouring spout having an enlarged barrel or body portion intermediate its receiving and delivery ends which operates as an expansion chamber for the elimination of the usual air gurgling or bubbling that accompanies the pouring of liquid contents from a can through spouts of this kind, and thereby steadies the flow.

It is another object of the invention to provide a spout having a tubular mounting shank with pointed end portions that facilitate the shank being projected through the can wall and to cut out the opening for reception of the shank, and which pointed portions are located at opposite sides of the shank and are provided with shoulders which give this part of the shank an oval cross sectional form, whereby, upon rotation of the device through a quarter turn after it has been applied, the shoulders will be locked beneath the edges of the opening across its minor axis, thus to hold the device securely in place in a non-leaking connection.

Still another object of the invention resides in the provision of a shank of two-piece construction, with a collar whereby these two pieces are held assembled and connected with the spout portion of the device.

Other objects of the invention reside in the details of construction and in the combination of parts, and in the use of the device, as will herein-after be described.

In accomplishing these and other objects, I have provided the improved details of construction, the preferred forms of which are illustrated in the accompanying drawing, wherein—

Fig. 1 is a perspective view of a can, having a pouring spout embodied by the present invention, applied thereto.

Fig. 2 is an enlarged, cross sectional view of the pouring spout.

Fig. 3 is a cross sectional view of the pouring spout as seen on the line 3-3, in Fig. 2.

Fig. 4 is a lower end view of the device, particularly illustrating the location and extent of the shoulder forming portions of the shank for locking it in place.

Referring more in detail to the drawing—

1 designates what may be a common type of tin can, or container, to which the present spout, designated in its entirety by reference numeral 2, is applied. In its present preferred form of construction, the device comprises a tubular shank 3, whereby it is mounted in the can end wall 1a, and an upper end or spout portion proper, 4. The shank portion 3 is made up of two complementary parts 3a and 3b, respectively, of like construction, and arranged to be assembled with the spout and then to be held in assembled relation and also assembled with the spout, by means of an encircling band, or collar, 5 that is crimped thereabout.

The parts 3a and 3b are preferably die stamped. Each is curved cylindrically about an axial line that is common to both parts when assembled, and each terminates at its lower end in a rather elongated and symmetrically pointed portion 3c. These two pointed portions are disposed diametrically opposite each other, and are of equal length, as shown best in Fig. 3, and are adapted, upon applying the device to a can by pressure downwardly against the upper end, to pierce the wall of the can and to shear out, or cut away a piece of metal corresponding to the cross sectional shape of the shank thereby to provide for the functional application of the device.

Pressed outwardly from the upper body portion of each of the pointed portions of the shank, is a locking portion in the nature of an upwardly facing shoulder 6; the shoulders being oppositely disposed and sloped spirally and outwardly, thus to operate after the fashion of tightening threads.

By reference to Fig. 3 it will be observed that in the formation of the shoulders, the outward deformation of the metal leading up to the shoulders extends for quite some distance and is very gradual, so as not to require any unusual amount of pressure in ovally deforming the circular opening cut by the piercing points to permit passage of the shoulders.

Immediately above the shouldered portion of the shank, it is of uniform cylindrical form and there is a rubber sealing gasket 8 applied thereto which, in the use of the device, seats flatly against

the can wall about the opening cut by the shank to prevent possible leakage.

The upper portion of the shank is considerably enlarged diametrically to form an expansion chamber 10 of substantial volume, which chamber communicates at its lower end directly with the lower part of the shank, and at its upper end opens through a passage 13, that is approximately equal in diameter to that of the neck of the shank, into the spout proper. This enlargement forms a downwardly facing annular shoulder 14 encircling the shank against which the gasket 8 is seated.

The spout portion 4 comprises a rather shallow cup-like body with a laterally extended pouring lip 15. Opposite the lip, the body has an outwardly extended wing 16 to which the thumb piece 18 of a cover 17 is pivotally attached, as seen at 18a. The thumb piece 18 extends beyond the pivot point, and pressure may be applied downwardly thereagainst to lift the cover to its open position, as seen in Fig. 1.

At its under side, the spout body has a somewhat restricted neck portion 19 forming an annular, outwardly opening channel 20 which receives therein the inturned rim 21 of the upper edge of the collar 5, which is fitted about the diametrically enlarged portion or expansion chamber 10 of the shank. The lower edge of the collar 5 likewise is crimped inwardly beneath the shoulder 14, which is formed by the diametric enlargement of the shank to provide the chamber 10, thereby to lock the collar in place and to secure all the parts of the device functionally assembled.

One of the features of the invention resides in the fact that a horizontal cross section through the shank just below the shoulders 6—6 is substantially oval in outline; therefore, it is apparent that in pressing the device into place through a can wall opening, a somewhat oblong opening 23 will be formed, as designated in dotted lines in Fig. 4; then by rotation of the device through an angle of 90° the shoulders 6, which are at the opposite sides of the major axis, will be caused to tighten and lock beneath the edges of the opening across its minor axis, thus to lock the device in place. Also by virtue of the inclination of the shoulders these will operate to clamp the sealing gasket 8 tightly against the can wall.

Another feature of the invention resides in the provision of the expansion chamber 10 whereby all irregularity of flow, as well as the gurgling and air bubbling incident to pouring contents from the can, is eliminated. The explanation for this is not clearly understood but the fact remains that contents may be quickly and readily poured from the can and without the inward bubbling of air or unevenness of flow.

Still another feature of the invention resides in the two-part construction of the shank which permits these parts to be easily formed in an inexpensive manner, and to be assembled together and about the upper spout portion easily and readily, and then to be secured in place by the application of the encircling collar 5. Since the collar holds these parts tightly together, and is also seated at its lower end against the gasket 8 and at its upper end is sealed about the pouring spout, there is no possible chance of leakage.

To insure that the spout portion 4 will not have any turning tendency relative to the shank, the latter is formed at its top edge with small

protuberances 25 adapted to seat in notches 26 in the lower rim of part 4, as seen in Fig. 2.

Devices of this character preferably are made of stainless steel and in the stamping or forming operation the cutting edges are sharpened so that no additional grinding or sharpening is necessary to make them effective. The two pointed end portions of the shank converge, as shown in Fig. 3, below the level of the shoulders. Therefore, the portion removed from the can wall in preparing the opening for the device will be entirely severed. The formation of the shoulders 6 is such that there will not be any abrupt corners, but will provide rounded surfaces that are easily cleaned, thus adding to the sanitary character of the device.

An added feature in the pouring spout is formed at the point of the lip 15 wherein an abrupt downward bend 15a adjacent the lip end effects a "no drip" result that is exceptionally effective.

Having thus described my invention, what I claim as new therein and desire to secure by Letters Patent is—

1. A device of the character described, comprising a tubular body, formed at its outer end with an enlarged pouring portion and formed at its inner end with a mounting shank applicable to an opening in a container wall to receive contents from the container, and formed intermediate its inner and outer ends with an enlargement forming an expansion chamber having a restricted opening into the outer end portion.

2. A pouring spout for metal containers, comprising a tubular body formed intermediate its ends with encircling restrictions defining an expansion chamber within the tube; said body terminating at its inner end in a cylindrical shank comprising shearing points adapted to be pressed through a can wall to remove a cylindrical part thereof for reception of the shank; said shank having diametrically opposite shoulders outwardly formed thereon adapted to pass through the opening by outwardly deforming opposite edge portions thereof to provide an oval opening, and adapted, by partial rotation of the shank, to lock beneath the undeformed portions.

3. A pouring spout for cans, having a shank comprising two complementary, semi-cylindrical sections fitted together to form a tubular mounting through which contents is poured from the can, and an encircling collar fitted to the sections, and holding them in assembled relation.

4. A device as in claim 3, wherein there is an upper end pouring section formed about its base with an outwardly opening groove, and wherein the said shank portions are formed at their upper ends with inturned flanges seated within the said groove as a means of locking the parts together, and are held functionally assembled therewith by the said encircling collar.

5. A pouring spout for cans, comprising an outer end portion and a mounting shank; said shank comprising two complementary, semi-cylindrical parts fitted together to form a cylindrical mounting tube for the device and each of said parts being tapered at its inner end to a point adapted for shearing through a can wall to form a mounting opening for the device, and formed at their outer ends with enlargements together constituting an expansion chamber in the spout and forming a downwardly facing annular shoulder, for seating a sealing gasket.

6. A device as recited in claim 5, wherein each

part of the shank has an outstanding shoulder arranged to operate as a means of seating and retaining the device in place by engagement with the can wall about the opening.

5 7. A pouring spout for cans comprising a mounting shank and a tubular outer end portion forming a spout; said shank comprising two
10 complemental semi-cylindrical parts fitted together to form a cylindrical mounting tube for the device and each of said parts being tapered at its inner end to a point adapted for shearing
15 through a can wall to form a mounting opening for the device, and formed at its outer end with an enlargement; said enlargements being fitted together within the tubular outer end portion and together constituting an expansion chamber within the spout.

8. A device of the character described, comprising an outer end pouring part formed with an encircling groove about its base, a shank comprising opposite side parts fitted together to form a cylindrical mounting tube for the device
5 and enlarged to cooperate in forming an expansion chamber beneath the outer end portion, a collar fitted about the shank enlargement and having its edges clamped, respectively, beneath the enlargement and into said encircling groove
10 of the outer end part to hold the parts functionally assembled; said outer end part having notches in its lower edge portion and said shank parts having extensions seated in said notches
15 to prevent relative rotative movement of the shank and the outer end part.

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