

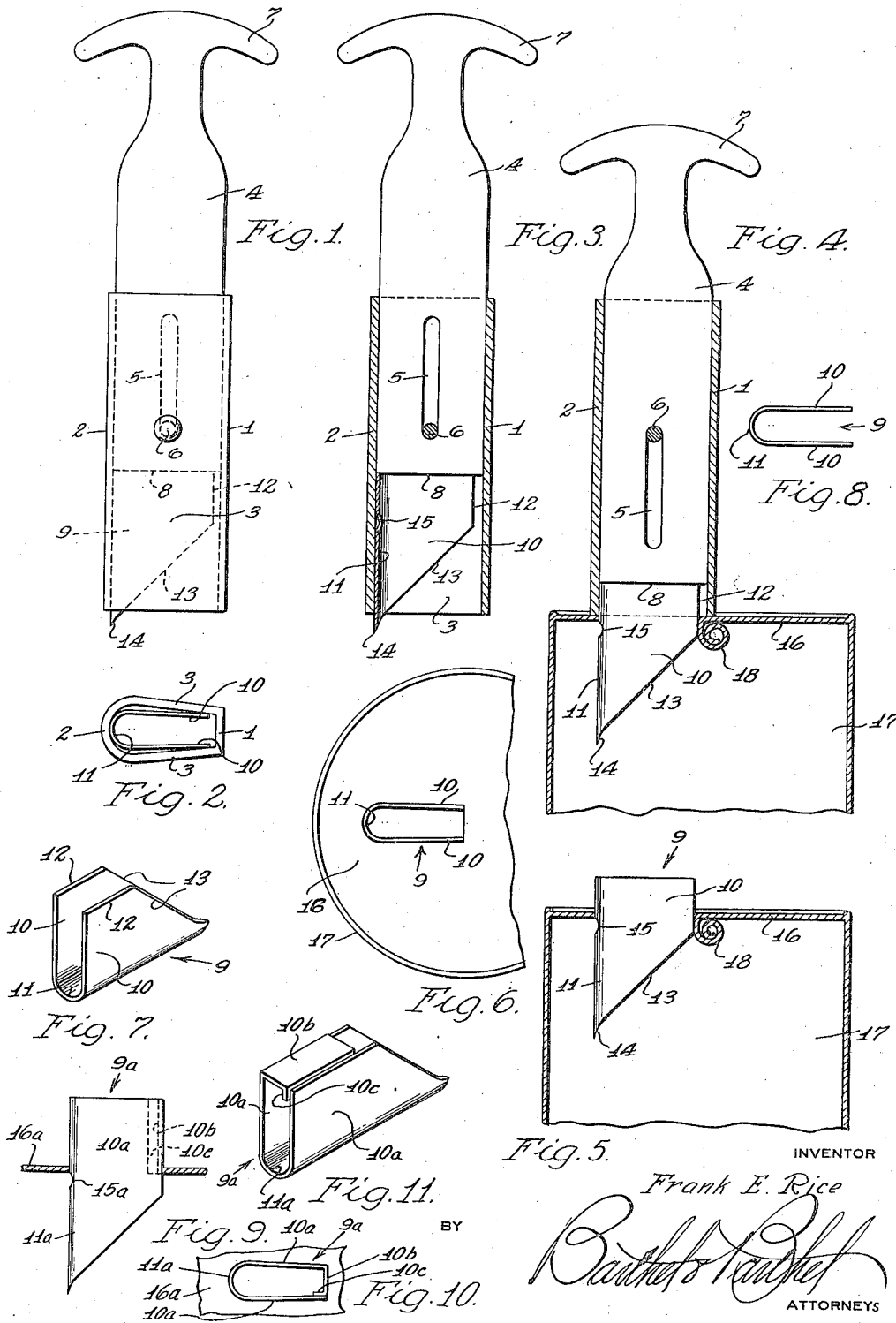
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POURING SPOUT FOR CANS

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POURING SPOUT FOR CANS

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The present invention relates to pouring spouts for cans or containers for removing fluid contents therefrom and to a novel device for inserting the pouring spouts in a wall of a can or container.

5 The spout and inserting device are designed with a view to making easy the emptying of liquid contents from cans or similar containers, particularly cans containing beverages such as beer.

The primary object of the present invention 10 is to provide a pouring spout which is adapted to be forced through a wall of a can or like container and which embodies means for frictionally engaging the wall into which it is inserted whereby it holds itself in a position for pouring operations. The frictional holding means permits the 15 spout to be removed from one can and re-used in connection with other cans.

Another object of the present invention is to provide a pouring spout with metal cutting portions so designed that upon forcing the spout 20 through a wall of the can the metal displaced by the spout is severed from the remaining wall in such manner as to form a tab, the spout having portions so arranged that they engage the tab so 25 formed to cause it to be rolled into a spiral formation. The excess metal deformed from the wall by inserting the pouring spout therein is, therefore, treated whereby it does not interfere with the flow of liquid from the can or the 30 entrance of air into the can to displace the liquid. In addition, the wall severing means on the spout forms an opening in the wall in such manner that the edges thereof are not jagged and which fit snugly against the sides and bottom of the 35 spout to prevent liquid leaking between the outside of the spout and the opening in the wall.

Another object of the present invention is to provide a device for inserting spouts, of the character above referred to, into the wall of a 40 can, the device being compact in nature so that it may be conveniently carried in a person's pocket. Further, the device includes means for holding resiliently flexible portions on the spout in a slightly compressed condition so that upon re- 45 lease thereof after inserting the spout in the wall of the can the resilient portions tend to expand and in so doing frictionally engage the sides of the opening in the wall.

Still another object of the present invention is 50 to provide a device with a hollow body into the end of which a pouring spout of the character above referred to may be inserted and held thereby in a slightly compressed condition, the friction induced by compression of the spout 55 functioning to retain it in the end of the hollow

body. In the hollow body is a plunger having an outwardly projecting end provided with means whereby a person may strike the same by hand, to reciprocate the plunger, and to cause the plunger to force a pointed end of the spout 5 through a wall of a can. After the spout has been forced through the wall of the can the friction between the can wall and the spout is greater than that between the spout and the hollow body so that upon removal of the hollow 10 body the spout remains in the can wall.

With the above and other objects in view the invention consists in matters hereinafter more particularly set forth with reference to the accompanying drawing, in which— 15

Figure 1 is a side elevation;

Fig. 2 is an end elevation;

Fig. 3 is a vertical section;

Fig. 4 is a vertical section illustrating the device 20 at the completion of the spout inserting operation;

Fig. 5 is a fragmental section of a can with the spout therein;

Fig. 6 is a fragmental plan of a can with the spout therein;

Fig. 7 is a perspective of the spout; 25

Fig. 8 is an end elevation of the spout;

Fig. 9 is an elevation of a modified spout supported in a wall of a can, the can wall being shown in section;

Fig. 10 is a plan of the modified spout inserted 30 in a can wall, and

Fig. 11 is a perspective of the modified spout.

Like characters of reference are employed throughout to designate corresponding parts.

The spout inserting device comprises a hollow 35 body, open at both ends, having a straight rear wall 1 and a semi-circular front wall 2 united by side walls 3. Upon reference to Fig. 2 it will be seen that the two side walls 3 converge as they extend from the front wall to the rear wall. 40 Slidably mounted in the hollow body is a plunger 4 having a cross sectional contour corresponding to the shape of the hollow body, as above described. The plunger 4 has a lengthwise extending slot 5 through which a pin 6, supported by 45 the side walls 3, extends. Upon its upper end the plunger 4 is provided with an enlarged head 7.

As may be observed by comparing Figs. 3 and 4, the slot 5 is formed of a length whereby the ends thereof engage the pin 6 to restrict movement of 50 the plunger, Fig. 3 showing the limit of the upward movement of the plunger, and Fig. 4 showing the plunger at the limit of its downward movement. It will be noted that the inner end of the plunger, designated 8 always remains 55

within the hollow body. As shown in Figs. 1 and 2 the position of the plunger represents the condition of the device in which it is ready for insertion of the pouring spout into the end of the hollow body adjacent the end 8 of the plunger.

As viewed in end elevation (see Fig. 8) the spout 9 is of U-form, being composed of two, parallel side walls or wings 10 united by a substantially semi-circular portion 11. The outer edges of the wings 10 extend parallel to the semi-circular portion 11, as designated at 12, and the remaining edge portions are angularly disposed, as at 13, and converge in a sharp point 14. In the portion 11 of semi-circular section is formed an aperture 15.

The spout 9 is manually inserted in the end of the hollow body as shown in Figs. 1 and 3. In order to so insert the spout it is necessary to slightly deform the same, that is, the two wings 10 must be slightly compressed in order that they may be placed between the converging side walls 3 of the hollow body. The natural resiliency of the wings 10 causes sufficient friction between the same and the walls 3 to retain the spout within the end of the hollow body. The wings 10 are shown in their compressed condition in Fig. 2.

With the spout 9 inserted in the hollow body and having its end in engagement with the plunger end 8, the pointed end 14 projects slightly from the end of the hollow body.

This projecting, pointed end 14 is placed in contact with a wall 16 of a can 17 while the hollow body is held with its axis substantially normal to the wall 16. The head 7 is then struck a blow by hand, and the force of the blow causes the plunger 4 to move downwardly and to drive the spout 9 into the wall of the can as shown in Fig. 4. During insertion of the spout in the wall in this manner the point 14 first penetrates the wall 16 and the two inclined edges 13 then sever the metal to form a tab 18 which as it is formed is rolled into a substantially spirally coiled form. The tab 18 is thus disposed whereby it does not block the opening in the wall 16 in which the spout is disposed.

After the spout 9 has been driven through the wall 16 the hollow body is removed, and because the friction between the wall 16 and the spout 9 is greater than that between the spout and the hollow body the spout remains in the can wall. The compression of the wings 10 of the spout therefore provides for two functions, one being the retention of the spout in the hollow body prior to movement of the plunger and the other being that upon removal of the confining hollow body the tendency of the wings to expand to their original position forces the same into firm engagement with the wall 16 so as to preclude leakage of fluid around the spout.

When the plunger 4 is moved to the position shown in Fig. 4 it does not completely expel the spout from the end of the hollow body, with the result that the portion of the spout which remains in the hollow body projects outwardly from the wall 16 after completion of the spout inserting operation. The projecting portion of the spout provides for convenient pouring operations. The aperture 15 is disposed just beneath the wall 16 when the spout is inserted in the wall 16 and makes possible the complete emptying of fluid from the can 17.

The spout 9 is, as may readily be seen, open at its top. By way of modification the invention also provides a spout in which the portion which projects outwardly of the can wall is closed at the top, and yet all the characteristics of the

above described spout 9 are retained. Such a spout 9a is shown in Figs. 9, 10 and 11 and comprises two resiliently flexible wings 10a united by a substantially semi-cylindrical portion 11a. The spout 9a has a pointed end 14a and two inclined edges 13a merging into the point. One of the wings 10a has an integral part formed at right angles to the normal plane thereof to provide a wall 10b which extends in the direction of the other wing 10a, the wall 10b having an end flange 10c which is normally spaced from the other wing 10a, as may be seen in Fig. 11. When the spout 9a is inserted in the wall 16a by means of a device, such as above described, the wings 10a are held in a slightly compressed condition, as may be seen in Fig. 10, in which case the adjacent free wing 10a rests in contact with the flange 10c.

In connection with the spout 9a it is contemplated that the stroke of the inserting plunger will be shortened so that the spout will be inserted in the wall 16a a distance corresponding to the length of the wall 10b. The spout is thus disposed so that the closed portion thereof does not extend into the can. The spout 9a also has an aperture 15a in the semi-cylindrical portion thereof which is disposed immediately below the wall 16a when the spout is inserted.

Although specific embodiments of the invention have been illustrated and described it will be understood that various changes may be made within the scope of the appended claims without departing from the spirit of the invention, and such changes are contemplated.

What I claim is:—

1. In combination, a pouring spout having a pointed end adapted to pierce the wall of a can and resiliently flexible means adapted to frictionally engage edges of the opening formed by piercing said wall, means for holding said resilient means in a compressed condition, a manually movable plunger in said holding means adapted to engage and eject said spout therefrom in a compressed condition to force it into the wall of a can, and means for restricting movement of said plunger to determine the depth of insertion of said spout.

2. In combination, a pouring spout, said spout having a pointed end and adapted to pierce the wall of a can, said spout having resiliently yieldable side walls with portions thereon for forming an opening in the can wall, means for forcing said spout into the wall of a can, and means for holding the resiliently yieldable side walls compressed during insertion into the wall of a can whereby the opening formed by said walls is of less width than the normal spacing of said walls and the tendency of said walls to resume their normal position when released from said holding means induces friction to hold the spout in the opening.

3. In combination, a pouring spout, said spout having a pointed end adapted to pierce the wall of a can, said spout having resiliently yieldable side walls with portions thereof for forming an opening in the can wall, means for forcing said spout into the wall of a can, positive means for restricting movement of said forcing means to regulate the depth of insertion of the spout into the can wall, and means for holding the resiliently yieldable side walls compressed during insertion into the wall of a can whereby the opening formed by said walls is of less width than the normal spacing of said walls and the tendency of said walls to resume their normal position when released from said holding means induces friction to hold the spout in the opening.

4. In combination, a hollow body, a plunger
slidable in said body, one end of said plunger being
extended outwardly of said body, means on said
extended end for manually moving said plunger,
5 a spout having resiliently yieldable side walls
spaced apart a normal distance less than the space
between side walls of said hollow body, said

plunger being movable to a position permitting
insertion of said spout into the end of said hollow
body, and said plunger being adapted to engage
the end of the inserted spout whereby movement
of the plunger expels the spout from said hollow 5
body.

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