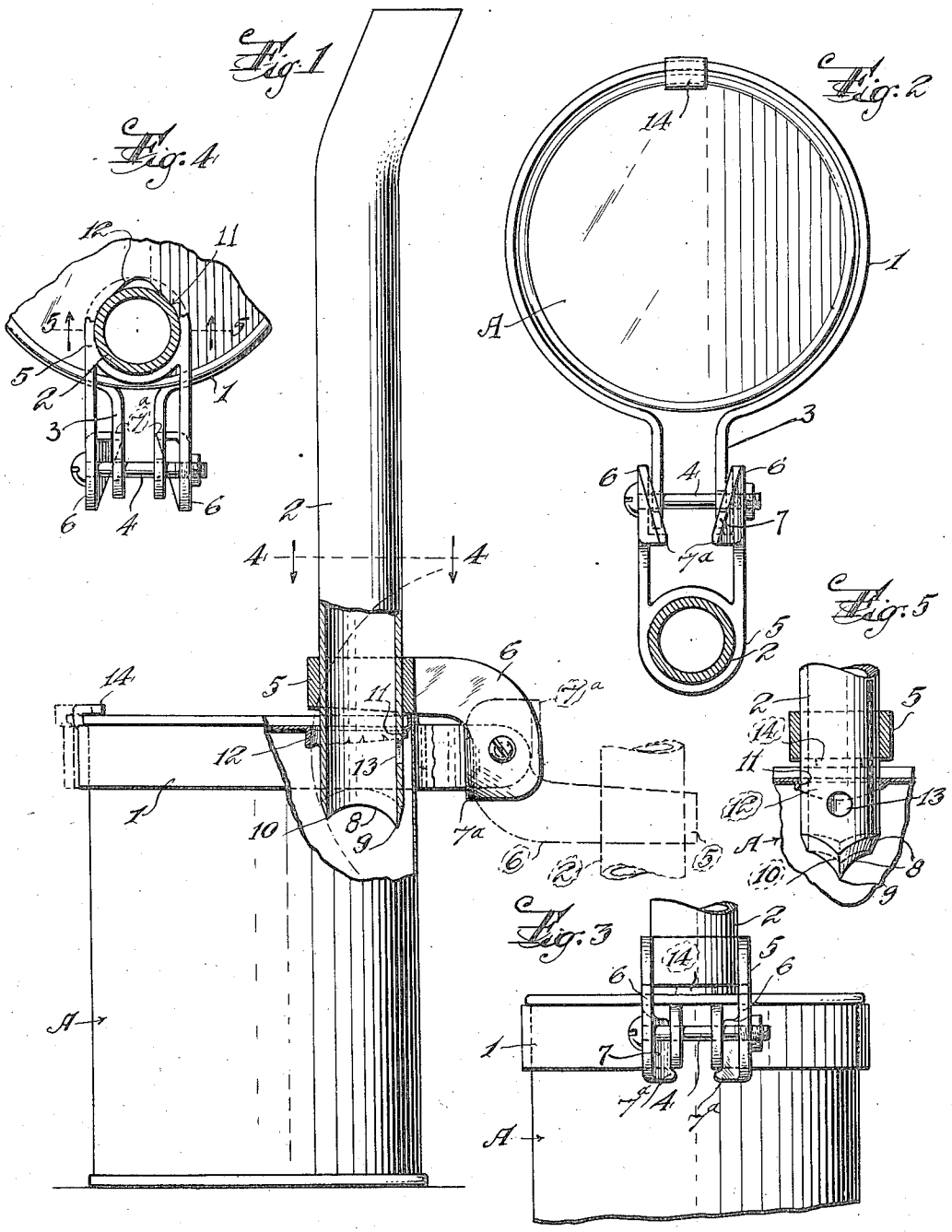
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POURING SPOUT ATTACHMENT FOR CANS

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## POURING SPOUT ATTACHMENT FOR CANS

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This invention relates in general to a pouring spout attachment for containers and more particularly to a spout attachment for sheet metal cans containing liquid, for example, lubricating oils, which can be removably clamped upon a can and will puncture the can to form a pouring aperture as the spout is moved into pouring position.

One object of the invention is to provide a device of the character described which shall comprise a clamp to removably encircle a can, and a pouring spout movably mounted on the clamp, for example by pivoting so that the clamp will be automatically actuated to grip and release a can as the spout is moved into and out of pouring position, respectively, whereby the device shall be simple in construction and operation and easy to apply to and remove from a can.

Further objects are to provide such a pouring spout attachment embodying novel and improved features of construction whereby the spout shall puncture the can to form a pouring opening as the spout is moved into pouring position; and to provide such a device wherein the spout shall form a vent opening simultaneously with the formation of the pouring opening.

Other objects are to provide a pouring spout attachment of the character described wherein the clamp and mounting means for the spout shall cooperate to releasably hold the spout in pouring position on the clamp and can; to provide such a device embodying a novel and improved construction of pouring spout whereby the spout may puncture a can to form simultaneously a pouring opening and a vent opening, and the spout shall snugly fit the pouring opening to prevent leakage of the contents of the can around the spout; and to obtain other advantages and results as will be brought out by the following description.

Referring to the accompanying drawing in which corresponding and like parts are designated throughout the several views by the same reference characters,

Figure 1 is a front elevation of a pouring spout attachment for a can constructed in accordance with my invention, showing the attachment applied to a can, portions of which are broken away.

Figure 2 is a plan view of the spout attachment and can showing the attachment in the inital position during the placing thereof on the can.

Figure 3 is a fragmentary side elevation of the spout attachment of the can.

Figure 4 is a fragmentary horizontal sectional view on the line 4—4 of Figure 1 and

Figure 5 is a fragmentary vertical sectional view on the line 5—5 of Figure 4.

Specifically describing the illustrated embodiment of my invention, the pouring spout attachment comprises means for securing the attachment on a can, which in the present instance is shown as an expansible band 1 in the form of a split resilient ring of a size to encircle the side walls of a can A to which the attachment is to be applied. A pouring spout 2 is movably mounted on the expansible band 1 so that movement of the pouring spout in one direction will automatically contract the band into gripping contact with the side walls of the can. As shown, the ends of the band 1 have lateral ears 3 in which is mounted a pivot bolt 4 by which a mounting means 5 for the spout is pivotally connected to the band. This mounting means is shown as having a bifurcation, the arms 6 of which straddle the ears 3 and are formed with cam portions 7 to cooperate with the ears. The spout 2 is rigidly connected to the mounting means 5, and the axis of the pivot bolt 4 is preferably at right angles to an axial plane of the band so that when the band is applied to a can, the pouring spout may swing in an axial plane of the can into engagement with the top end wall of the can.

The parts are of such size and so related that when the pouring spout is swung to one side of the plane of the band 1, as shown by dot and dash lines in Figure 1 the cam portions 7 of the arms 6 of the mounting means will clear the ears 3 of the band and permit the band to expand as shown in Figure 2, the band in this position being slightly greater in diameter than the can so that the band can be slipped over one end of the can, as shown in Figure 2. As the pouring spout is swung upwardly to the other side of the plane of the expansible band, the cam portions 7 press the ears 3 toward each other so as to contract the band into gripping contact with the side walls of the can as shown in Figure 4, and thereby securely mount the attachment on the can.

As shown, one end portion of the pouring spout is substantially straight and formed at its extremity with a knife edge 8 having two diametrically opposite points 9 and 10 disposed in the plane of swinging of the spout, the point 9 near the axis of the pivot bolt 4 being longer than the point 10. As the spout is swung upwardly, the point 9 will penetrate the end wall of the can and the knife edge will pierce or cut away a portion of the can to form a pouring opening 11 into which the end of the spout will enter as shown in

Figure 1. The point 10 as it penetrates the wall of the can and due to the arcuate movement of the end of the spout will form a notch 12 in the edge of the pouring opening to provide a vent between the spout and the edge of the pouring opening, and the sides of the pouring spout will tightly engage the edges of the pouring opening except at the notch 12 so as to prevent leakage of the contents of the can around the spout.

Preferably the cam portions 7 are formed with portions 7A that will snap past the lower edges of the ears 3 when the spout is in the pouring opening, so as to releasably hold the spout in this position, the inherent resiliency of the expansible band tending to restrain pivotal movement of the mounting means 5 in the direction to remove the spout from the opening.

With the attachment mounted as above described, the contents of the can may be removed by simply tilting the can so that the contents will flow through the pouring spout 2. The vent 12 will permit air to enter the can to prevent formation of a vacuum in the can. To ensure that all of the liquid in the can may pass through the spout 2, the spout may be provided with a drain opening 13 adjacent to the side wall of the can. The last drops of the liquid may flow into the spout through this drain opening 13.

To remove the attachment from the can it is simply necessary to forcibly swing the spout downwardly into the position shown by dot and dash lines in Figure 1 whereby the ends of the expansible band 1 are released and the band may expand so that it can be slipped from the end of the can.

If desired, the portion of the band 1 opposite the pivotal mounting of the pouring spout may be provided with an upstanding hooked lug 14 to engage the top wall of the can and to limit movement of the band downwardly on the can.

While I have shown and described my invention as embodied in certain details of construction it should be understood that this is primarily for the purpose of illustrating the principles of the invention and that the details of construction of the attachment may be modified or changed without departing from the spirit or scope of the invention. Also, the band 1 may be shaped to fit various sizes and shapes of cans. The last drops of the liquid may flow into the spout through this drain opening 13.

To remove the attachment from the can it is simply necessary to forcibly swing the spout downwardly into the position shown by dot and dash lines in Figure 1 whereby the ends of the expansible band 1 are released and the band may expand so that it can be slipped from the end of the can.

Having thus described my invention, what I claim is:

1. A pouring spout attachment for a can comprising an expansible band to encircle the side walls of a can, a spout pivotally mounted on said band and adapted to pierce the end wall of the can, and means actuated upon movement of said spout in the direction to pierce the can, for contracting said expansible band into gripping engagement with the can.

2. A pouring spout attachment for a can, comprising an expansible band to encircle the side walls of a can, a spout pivotally mounted on said band and adapted to enter a pouring opening in the end wall of the can, and means actuated by said spout to contract and release said band into and out of gripping contact with said can.

3. A pouring spout attachment for a can, comprising an expansible band to encircle the side walls of a can, a spout movably mounted on said band to enter a pouring opening in the end wall of the can, and means actuated by said spout to contract and release said band into and out of gripping contact with said can, one end of said spout having a knife edge to pierce the end of the can and form a pouring opening as the spout is moved in one direction.

4. A pouring spout attachment for a can comprising means to encircle and grip the side walls of a can, and a pouring spout pivotally mounted on said means and having a knife edge at one end to pierce the end wall of said can as the spout is pivotally moved in one direction, to form a pouring opening.

5. A pouring spout for a can, comprising a split expansible band to encircle the side walls and having lateral ears at its ends, a pouring spout to enter a pouring opening in the end wall of such can, and mounting means pivotally mounting said spout on said ears and having a bifurcation the arms of which straddle said ears and have cam portions to press them toward each other to contract said band into gripping engagement with said can as the spout is swung in the direction to enter said pouring opening.

6. The pouring spout attachment set forth in claim 4 wherein said end of the pouring spout is provided with a portion to form a vent opening in the end wall of the can simultaneously with the formation of said pouring opening.

7. A pouring spout for cans comprising means for releasably engaging the can, a spout pivotally mounted on said engaging means for swinging movement relative to the can, said spout having a knife edge at one end to pierce the wall of a can to form a pouring opening and provided with a portion to form a vent opening in the said wall at one side of said spout simultaneously with the formation of said pouring opening.

8. The pouring spout attachment set forth in claim 4 wherein said knife edge includes two diametrically opposite points in the plane of swinging of said spout, the point nearer the axis of pivotal movement being the longer, whereby the first-mentioned point will initially penetrate the wall of the can and the other point will make a notch at the edge of the pouring opening to form a vent between the spout and the edge of the pouring opening.

9. The pouring spout attachment set forth in claim 5 wherein said expansible band is resilient and portions of the arms of the bifurcation of said mounting means snap past the edges of said ears as the spout is moved into pouring position to releasably hold the spout in said position.

10. The pouring spout attachment set forth in claim 4 with the addition of means for releasably holding said spout in said pouring opening.

11. The pouring spout attachment set forth in claim 5 wherein said expansible band is resilient and upon movement of the spout in the other direction said arms of the bifurcation of said mounting means release said ears to permit said band to expand.

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