March 30, 1954 L. C. SMITH 2,673,393

DEVICE FOR USE IN APPLYING AND REMOVING POURING SPOUTS FROM CANS

Filed April 3, 1950

2 Sheets-Sheet 1

Fig. 1.

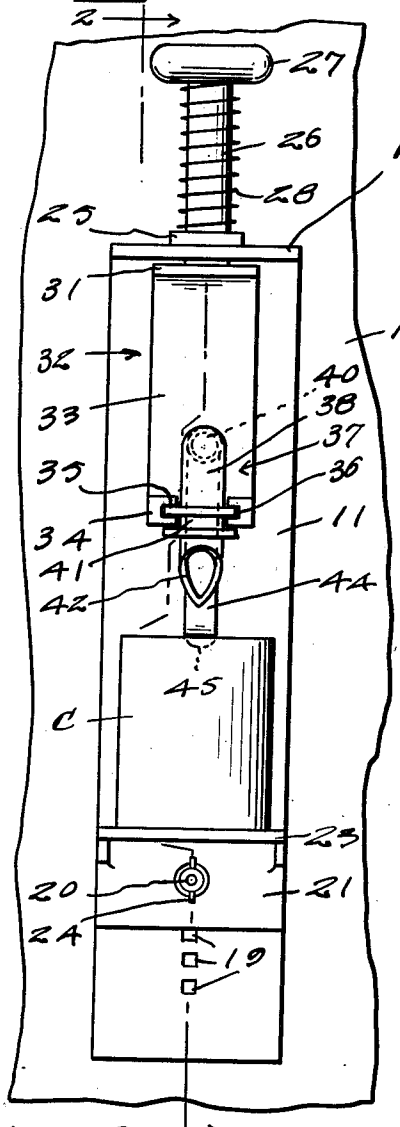
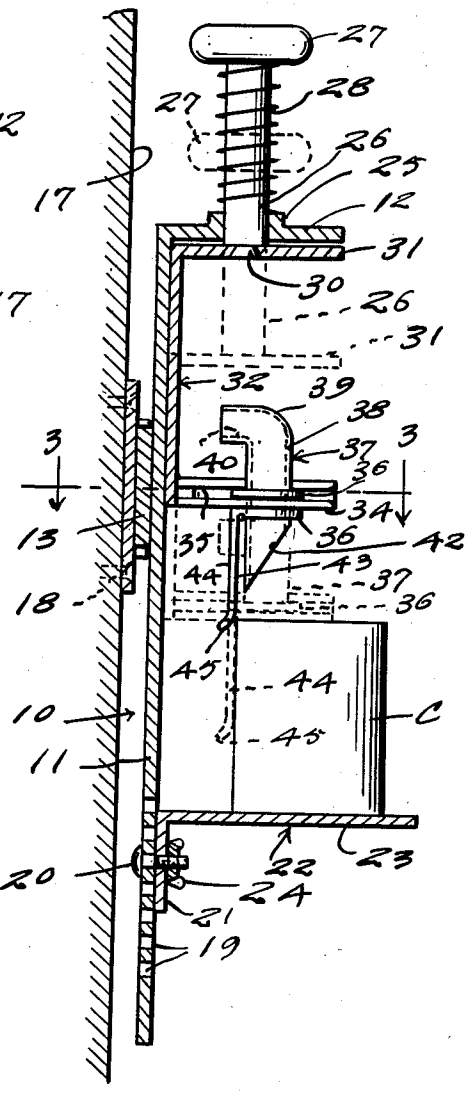


Fig. 2.



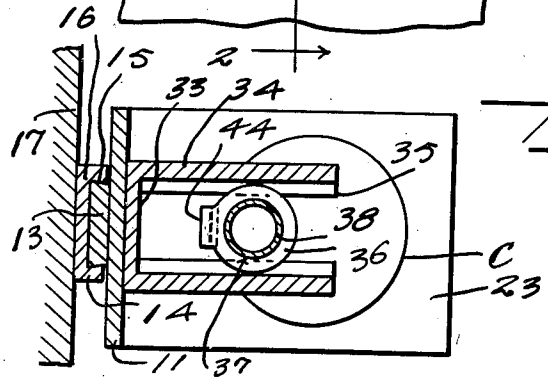


Fig. 3.

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FIG. 5.

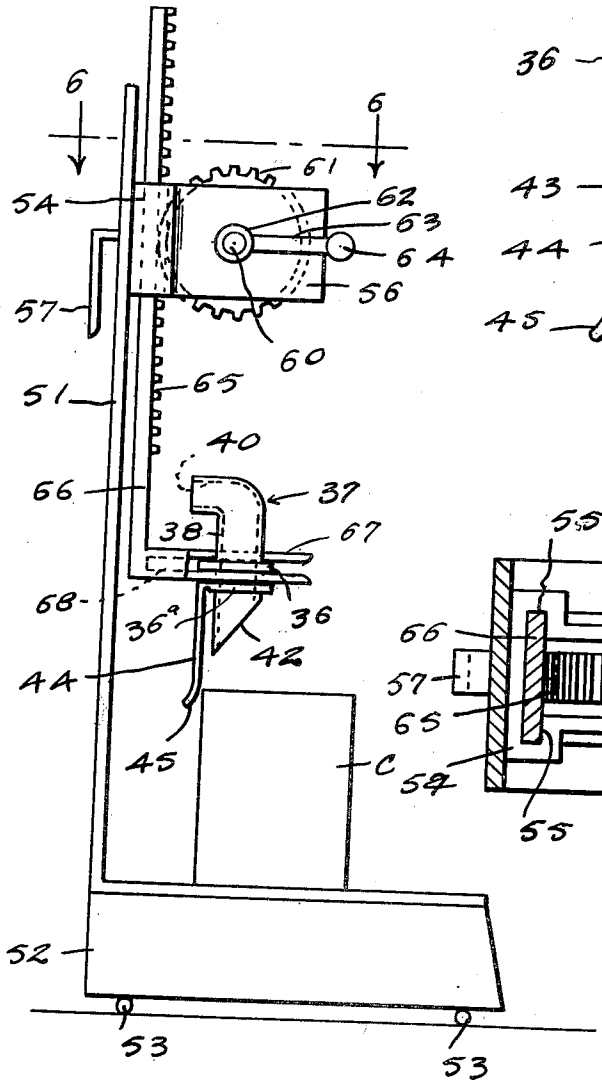


FIG. 4.

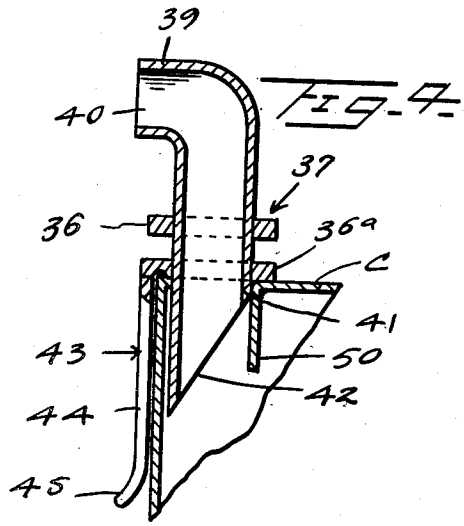
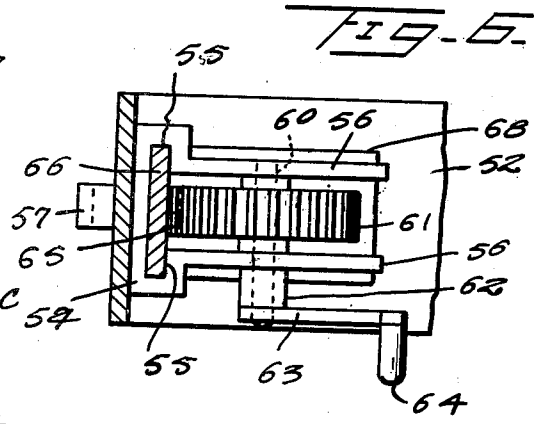


FIG. 6.



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DEVICE FOR USE IN APPLYING AND REMOVING POURING SPOUTS FROM CANS

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Application April 3, 1950, Serial No. 153,602

1 Claim. (Cl. 29—282)

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This invention relates to a can punch device, and more particularly, to a device adapted for punching an aperture in a can or similar container and inserting a pouring spout in the aperture.

A primary object of the invention resides in the provision of a device of this character whereby a can may be punctured and a pouring spout inserted in the aperture so formed with a minimum of effort and difficulty.

A further object of the invention resides in the provision of a device of this character which may be readily accommodated to a variety of sizes and shapes of cans or containers.

Still another object of the invention is the provision of a device of this character adapted for the removal of a spout from a can after the contents thereof have been emptied.

A more specific object resides in the provision of an improved pouring spout particularly adapted to be utilized with the can punch herein described.

Still other objects reside in the combination of elements, arrangement of parts, and features of construction, all as will be more fully pointed out hereinafter and disclosed in the accompanying drawings wherein there are shown preferred embodiments of this inventive concept.

In the drawings:

Figure 1 is a front elevational view of one form of device embodying features of the instant invention.

Figure 2 is a sectional view taken substantially along the line 2—2 of Figure 1 as viewed in the direction indicated by the arrows.

Figure 3 is a sectional view taken substantially along the line 3—3 of Figure 2 as viewed in the direction indicated by the arrows.

Figure 4 is an enlarged fragmentary sectional view showing one form of spout in position with relation to a can or container.

Figure 5 is a side elevational view, certain concealed portions thereof being indicated in dotted lines of a modified form of the invention.

Figure 6 is an enlarged fragmentary sectional view taken substantially along the line 6—6 of Figure 5 as viewed in the direction indicated by the arrows.

Similar reference characters refer to similar parts throughout the several views of the drawings.

Referring now to the drawings in detail and more particularly to the embodiment of the invention disclosed in Figures 1 to 3, inclusive, there is generally indicated at 10 a supporting member

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of generally L-shaped configuration which includes an elongated vertical leg 11 at the top of which is a horizontal leg or flange 12. Leg 11 is provided on its rear face with a V-shaped projection 13, undercut as indicated at 14, adapted to engage dovetailed grooves 15 in a supporting bracket 16, of conventional design, secured to a wall or similar support 17 as by means of screws 18 or the like, whereby the device may be mounted in any desired location in vertical alignment.

The lower portion of leg 11 is provided with a plurality of spaced vertically aligned apertures 19 centrally thereof, adapted for the reception of the shank of a bolt 20, which extends through a suitable aperture in a vertical leg 21 of an L-shaped supporting member generally indicated at 22, the horizontal leg of which is indicated at 23. A wing nut 24 is provided for securing bracket 22 to support 10 in a selected vertical position depending upon the aperture 19 through which the bolt 20 is passed, whereby to accommodate a variety of sizes of cans C.

The horizontal leg 12 of member 10 is provided with a bushing 25, having a centrally positioned aperture therein through which extends a tubular rod 26 having an enlarged head 27, a compression spring 28 being positioned between head 27 and bushing 25 normally biasing head 27, rod 26, and its associated mechanism, to be described hereinafter, upwardly.

Secured to the extremity of rod 26, as by a rivet 30 beneath flange 12 is one leg 31 of a U-shaped member generally indicated at 32 which includes a vertical plate 33, an outwardly extending bifurcated portion 34 in parallel alignment with the leg 31. The bifurcations of the member 34 are provided with opposed longitudinally extending grooves or channels 35, adapted for the reception of a peripheral flange 36 adapted to surround the intermediate portion of a tubular pouring spout generally indicated at 37. Spout 37 includes, as best shown in Figure 3, a vertical tubular portion 38, terminating in a right angularly disposed portion 39 having a pouring aperture 40 therein above the flange 36, and a vertically positioned portion 41 extending below the flange 36 and provided with an inclined relatively sharp perforating or cutting edge 42.

A depending guide member 43 is secured to a peripheral point on a second container sealing flange 36a which is disposed below flange 36, for aligning spout 37 in desired relation with the side of a can. The member 43 comprises an elongated plate 44 having an outwardly flared extremity 45 to facilitate the alignment and loca-

tion of the cutting edge 42 of the pouring spout.

From the foregoing, the use and operation of the device should now be readily understandable. Supporting member 43 is adjusted to a suitable height in the manner previously described and a can C positioned thereon. A spout 37 is then inserted with its flange 36 in channels 35 of member 34, and guide member 43 aligned with the edge of the can. Downward pressure is then exerted on the head 27 which causes cutting edge 42 to form an aperture in the top of the can, and at this time flange 36a will engage the top of can C to seal the opening, and cut flap 50 will be folded back to the position shown in Figure 4. A slight relaxation of pressure on handle 27 permits the can and the spout, which is now associated therewith to be slid in a horizontal position releasing the flange 36 from the grooves 35. The spout 37 will be in substantially fluidtight relation to the top of the can and may be used for pouring the contents thereof. Obviously, release of pressure on the head 27 will cause the parts to be returned to the operative position disclosed in full lines in Figure 2 whereupon the device is ready for re-use.

The removal of the spout from an empty can may be readily effected by a reversal of the above procedure, head 27 being first forced downwardly until grooves 35 are in alignment with flange 36, the can and its associated spout moved horizontally until the flange 36 engages in the grooves 35 whereupon release of the head 27 which may, if necessary, be supplemented by upward pressure thereon, will serve to remove spout 37 from its associated can.

A modified form of construction is disclosed in Figures 5 and 6 wherein a vertical upright 51 is mounted on a base 52, which may be carried on rollers 53 or the like for support on a horizontal surface, and has extending from an intermediate portion thereof a guide member 54 which includes oppositely disposed channels 55, and outwardly extending horizontal plates 56. The rear of member 51 is adapted to be provided with a V-shaped projection 57 whereby the same may be supported from a bracket similar to the previously discussed bracket 16 if desired.

Extending through suitable apertures in plates 56 is a shaft or axle 60, upon the central portion of which between the plates 56 is mounted a spur gear 61. A portion of the shaft 60 extends outwardly of one of the plates 56, and is surrounded by a collar 62 to which is affixed a crank arm 63 having crank handle 64 extending from the outer portion thereof, the arrangement being such that rotation of crank handle 64 will cause rotation of the gear 61. The teeth of gear 61 are adapted to engage the teeth of a rack 65 which is mounted in the center of a plate 66 adapted to be positioned within the channels 55 of bracket 54 for vertical movement therein. Extending from the lower extremity of plate 66 is a bifurcated portion 67 provided with channels 68 therein similar to the channels 35 discussed in the foregoing modification and adapted for the reception of the flange 36 of a spout 37 as previously described.

In the operation of this device, it will be understood that no adjustment of the base 52, which corresponds to the flange 23 of the foregoing modification, is necessary, the length of the rack 65 being of sufficient length to permit spout 37 to be inserted to any desired degree into the top of the can C.

It will be obvious that rotation of the gear 61 in the manner previously described will occasion upward or downward movement of the rack 65 and its associated mechanism in accordance with the direction of rotation of the crank handle 64.

From the foregoing, it will now be seen that there is herein provided an improved can punch device and spout for use therewith which accomplishes all the objects of this invention, and others, including many advantages of great practical utility and commercial importance.

As many embodiments may be made in this inventive concept and as various modifications may be made in the embodiments hereinbefore shown and described, it is to be understood that all matter herein is to be interpreted merely as illustrative, and not in a limiting sense.

What is claimed is:

Means for use in applying and removing a pouring spout from a can comprising a vertical supporting plate, an angle shaped can supporting bracket carried by the lower portion of said plate, a right angular guide plate extending from the upper end of said vertical plate, a slide member movably engaging the outer face of said vertical plate, said slide member comprising a vertical member confronting said vertical plate, an upper horizontal member projecting from said vertical member, a rod devoid of teeth fixed to said horizontal member and projecting upwardly through said guide plate, a knob at the upper end of said rod, a spring about said rod constantly urging said slide member upwardly, and a spout retainer fixed to the lower end of said vertical member and extending right angularly therefrom, said retainer being formed of a pair of parallel confronting channel members adapted to receive the flange of said spout, said spout retainer being spaced from the upper horizontal member of the slide member a distance ample to accommodate substantial spout structure located above the spout flange.

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