W. MILLS AND C. PERCY.

MACHINE FOR REFLANGING CANS.

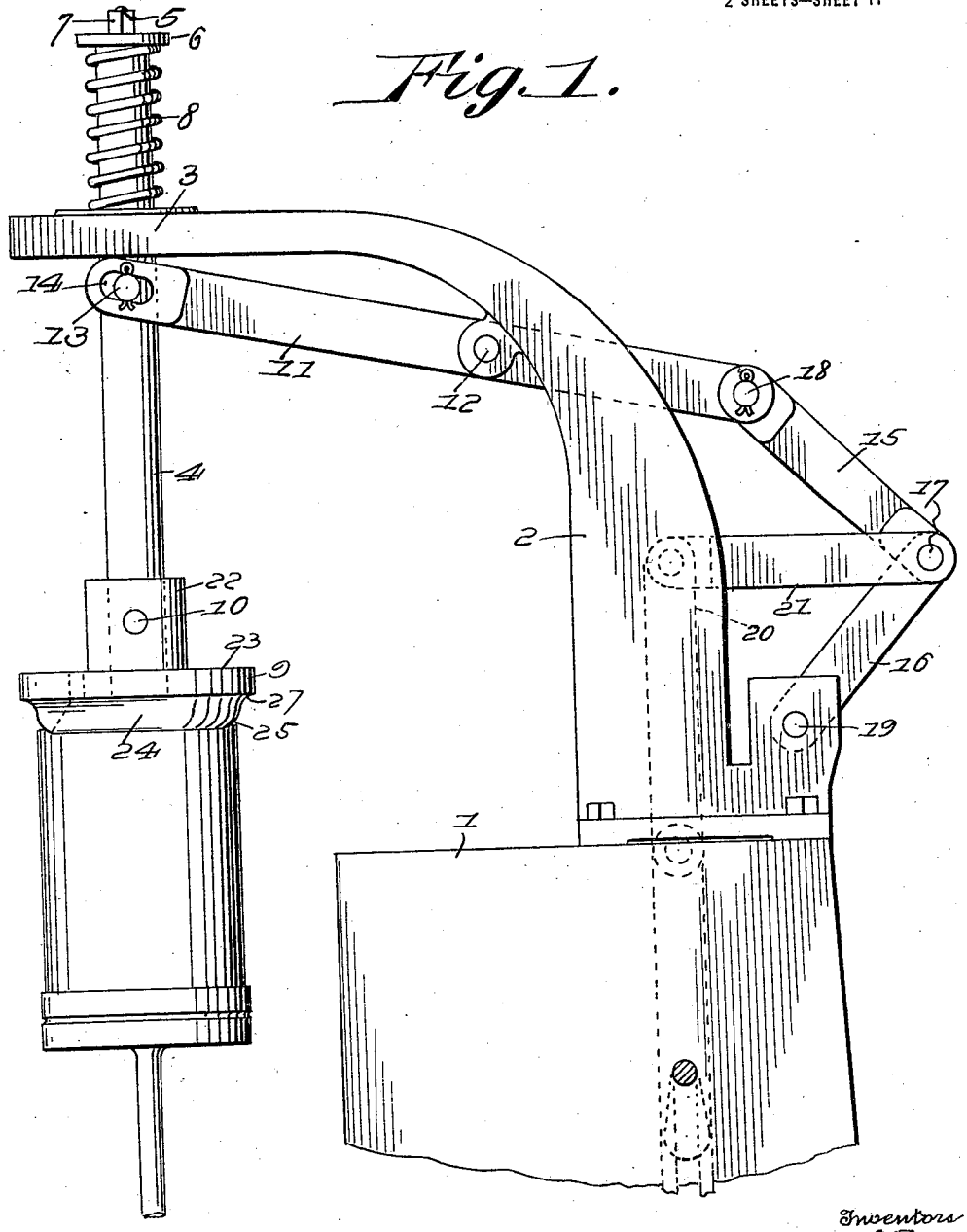
APPLICATION FILED SEPT. 9, 1920.

1,407,076.

Patented Feb. 21, 1922.

2 SHEETS—SHEET 1.

Fig. 1.



Inventors

William Mills and

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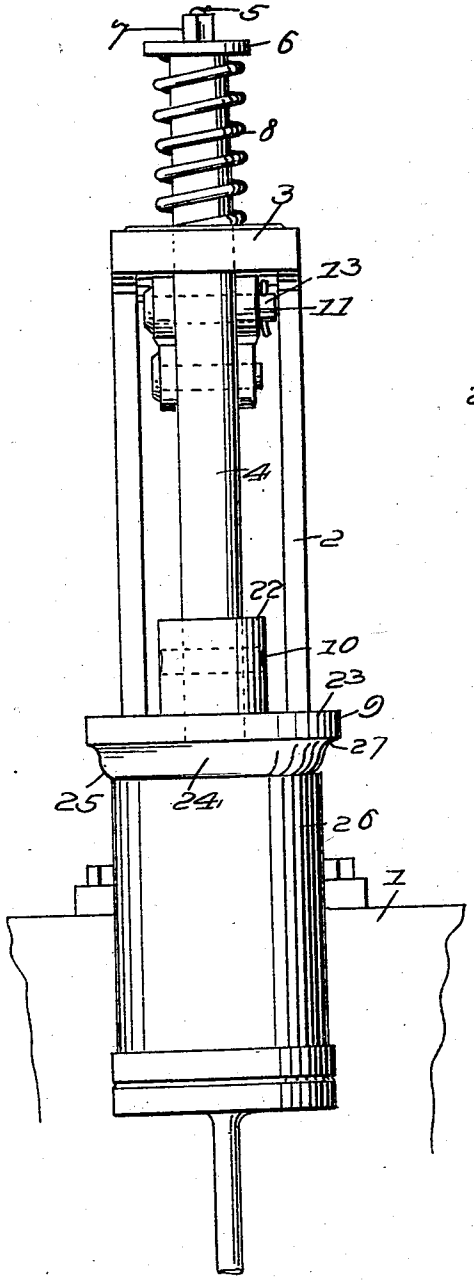


Fig. 2.

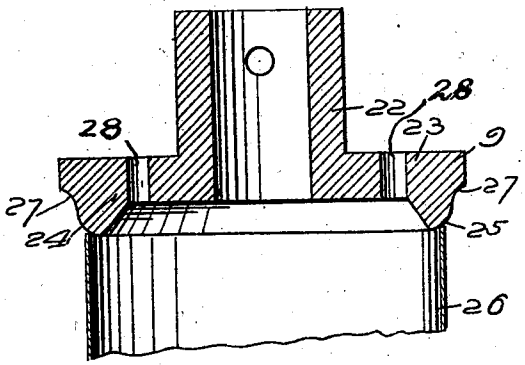


Fig. 3.

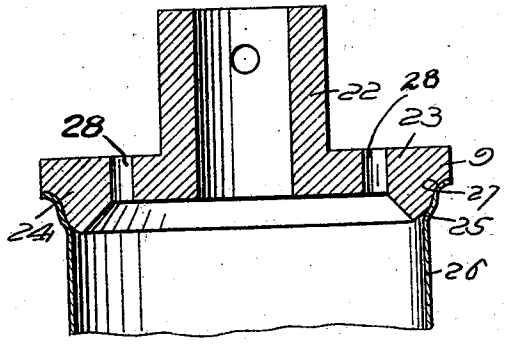


Fig. 4.

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UNITED STATES PATENT OFFICE.

WILLIAM MILLS, OF ANACORTES, AND CLARK PERCY, OF BELLINGHAM, WASHINGTON, ASSIGNORS OF ONE-THIRD TO CLARENCE H. KENT, OF SEATTLE, WASHINGTON.

MACHINE FOR REFLANGING CANS.

1,407,076. Specification of Letters Patent. Patented Feb. 21, 1922.

Application filed September 9, 1920. Serial No. 409,275.

To all whom it may concern:

Be it known that we, WILLIAM MILLS and CLARK PERCY, citizens of the United States, residing at Anacortes, in the county of Skaget and State of Washington, and at Bellingham, in the county of Whatcom and State of Washington, respectively, have invented certain new and useful Improvements in Machines for Reflanging Cans, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to an improved machine for reflanging cans.

Canned foods in considerable quantities have been condemned owing to improper canning or, in other words, the improper application of the can tops, and instead of destroying the cans and allowing the food to go to waste, it is the aim to renew the tops of the cans by first removing the top of the condemned can, as may be accomplished by the apparatus of the co-pending application filed the ninth day of September, 1920, in the names of William Mills and Clark Percy, Serial No. 409,274, allowed March 26, 1921, and after removing the top of the condemned can, it is the aim of the present invention to reflange the can so that a new top may be applied.

Another object of the invention is to provide a can flanging member having a marginal curved surface terminating in an upper outwardly curved annular portion, whereby when the marginal curved portion is forced within the can, the marginal edge of the can will engage the upper outwardly curved annular part of the flanging device and cause the wall of the can to flange outwardly.

Still another object is the provision of a machine wherein means is afforded for forcing the flanging device within the can.

A further object embodies the provision of a flanging device having openings to permit the level of the liquid or the contents of the can to rise when the flanging device is forced within the can.

While the design and construction at present illustrated and set forth is deemed preferable, it is obvious that as a result of a reduction of the invention to a more practical form for commercial purposes, the invention may be susceptible to changes, and the right to these changes is claimed, provided they are comprehended within the scope of what is claimed.

The invention comprises further features and combination of parts, as will be hereinafter set forth, shown in the drawings and claimed.

In the drawings:

Figure 1 is a view of the improved can flanging machine constructed in accordance with the invention, showing parts in elevation,

Figure 2 is a view in elevation at right angles to that illustrated in Figure 1,

Figure 3 is an enlarged detail view of the flanging device illustrating its first step in entering the wall of the can,

Figure 4 is an enlarged detail view of the flanging device, as having sufficiently entered the can and caused the formation of the flange.

Referring more especially to the drawings, 1 designates a frame, upwardly from which an arm 2 rises. This arm has a guide bearing 3 for the reception of a plunger 4 adapted to move vertically. The upper end of the plunger has a reduced extension 5 on which the washer 6 is held by means of a nut 7. A coil spring 8 is interposed between the washer 6 and the upper face of the lateral portion of the arm 2. This spring 8 acts to hold the plunger normally raised. The flanging device 9 is secured to the lower end of the plunger by means of a pin 10. It is possible to remove the pins so as to detach the flanging device for repairing it or for the purpose of attaching a new device.

An oscillatory lever 11 is pivotally mounted at 12 on the arm 2. One end of this lever 11 is pivotally connected to the plunger 4 by means of the forks of the lever. The pivotal connection comprises the transverse pin 13 and the elongated or elliptical openings 14 of the forks of the lever 11. By this connection, it is possible for the plunger to have movement relatively to the lever 11 as the lever is oscillated. Toggle links 15 and 16 pivotally united, as at 17, operatively connect the other end of the lever, as at 18, and the stationary pivot 19 of the frame 1. An operating lever 20 is pivotally mounted upon the frame 1 and is in turn operatively connected to the pivotal connection 17 by means of the links 21.

The can to be reflanged, after severing the top therefrom by means of the machine disclosed in the aforesaid application, is first placed upon the frame 1 of the present machine, after which the operating lever 20 is manipulated. The movement of the lever 20 will cause the links 15 and 16 to straighten out, causing the lever 11 to oscillate which will in turn move the plunger 4 downwardly. The plunger will move axially concentric with the can which is held on the base of the frame 1 in any suitable manner and as the plunger approaches the can, the flanging device will telescope within the can and cause the outward spreading of the wall of the can.

The flanging device consists of a cylindrical body 22 having at its lower portion a circular flange 23. Extending downwardly from the flange 23 is an annular rib 24, the marginal outer surface of which is curved inwardly and downwardly, as indicated at 25, so that the annular rib may telescope the can 26. The curved surface of the rib of the flanging device terminates at its upper portion in an outwardly curved annular portion 27. In other words, the upper part of the curvature 25 flares outwardly, acting to cause the marginal edge of the wall of the can to flare outwardly as the flanging device telescopes the can. It is to be noted that when the top of the can has been severed so as to reflange the can, the upper level of the fluid or contents of the can will be very close to the marginal edge of the can, hence it is the aim to provide the flanging device with openings 28 to permit the fluid or contents of the can to rise instead of oozing from the can as the flanging device telescopes the same. This also prevents the can from overflowing as the flanging device telescopes the can. After the can has been reflanged, a new top may be applied by any suitable can topping machine. The operating lever 20 may be manually operated or automatically operated.

The invention having been set forth, what is claimed as new and useful is:

1. In a can flanging machine, a frame, means for supporting a can to be flanged on the frame, a plunger mounted for vertical movement on the frame and axially concentric with the can, tensioning means for the plunger, a flanging device carried by the lower end of the plunger and adapted to telescope the can to cause the marginal flaring of the marginal edge of the wall of the can, an oscillatory lever pivoted on the frame and connected to the plunger, toggle link connections connected to the frame and in turn to the oscillatory lever, and means operatively connected to the toggle links for straightening the same to cause an oscillatory movement of the oscillatory lever, thereby moving the plunger against its tensioning means.

2. In a can flanging machine, the combination with a can flanging device, of a plunger carrying said device, tensioning means for the plunger, a support in which said plunger is mounted for vertical movement, an oscillatory lever pivoted on the support and loosely connected to said plunger, a member mounted for reciprocating movement in said support, movable means connecting the support and one end of said lever, and a link connecting the movable means at a point substantially intermediate where said means connects the lever and the support, and in turn connected to the reciprocating member, whereby an oscillatory movement may be imparted to said lever, thereby moving the plunger against its tensioning means.

3. In a can flanging machine, the combination with a can flanging device, of a plunger carrying said device, tensioning means for the plunger, a support in which said plunger is mounted for vertical movement, an oscillatory lever pivoted on the support and loosely connected to said plunger, a member mounted for reciprocating movement in said support, oscillatory movable elements pivotally united, one connected to the oscillatory lever, the other to the support, and means connected to said elements where they are pivotally united, and in turn to said reciprocating member, whereby oscillatory movement may be imparted to said lever, thereby moving the plunger against tensioning means.

In testimony whereof we hereunto affix our signatures.

WILLIAM MILLS.
CLARK PERCY.