Feb. 12, 1929. 1,702,111

G. FLOOK

PACKING DEVICE FOR FILLED CAN CLOSING MACHINES

Filed July 24, 1925 3 Sheets-Sheet 1

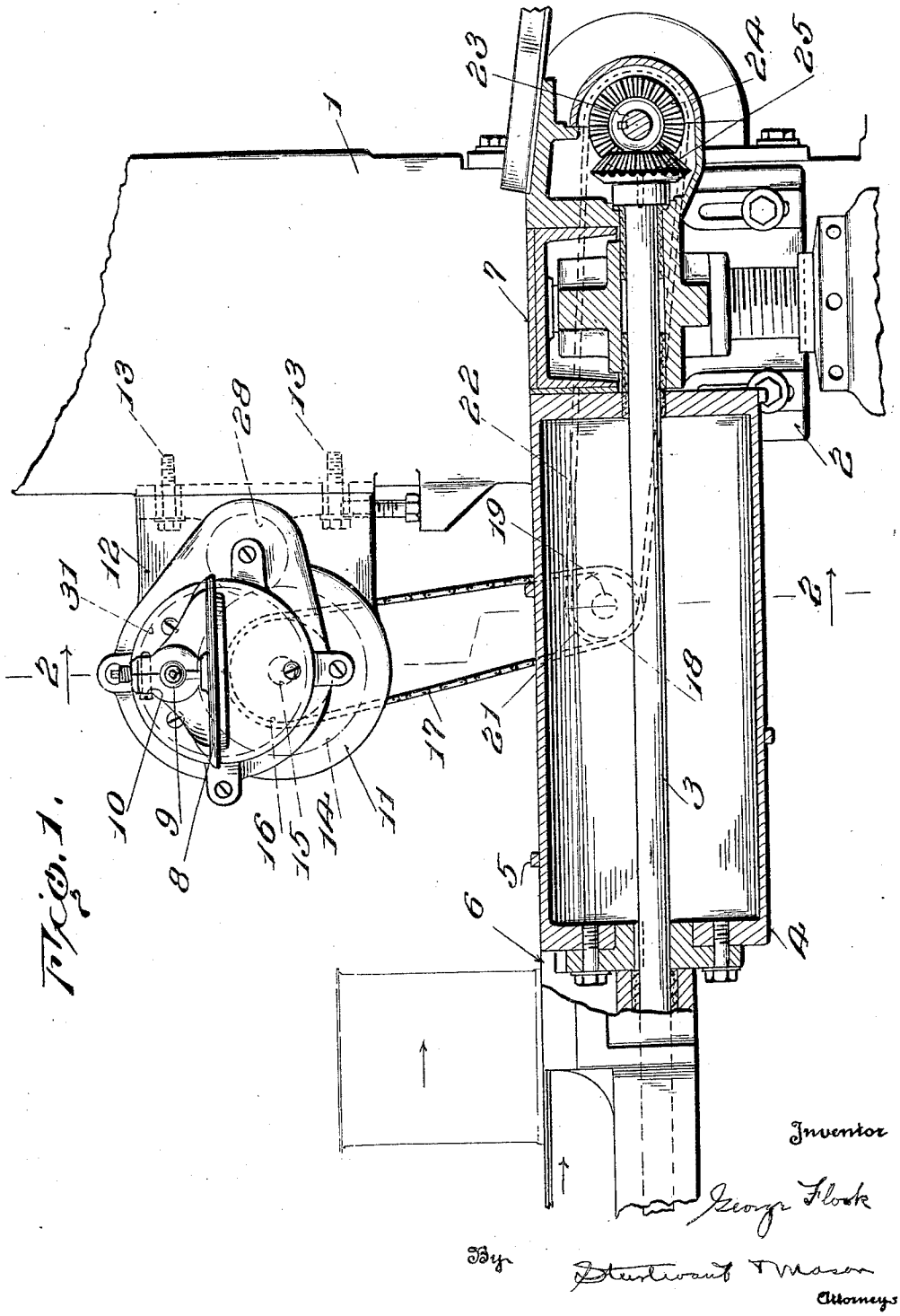


Fig. 1.

Inventor
George Flook

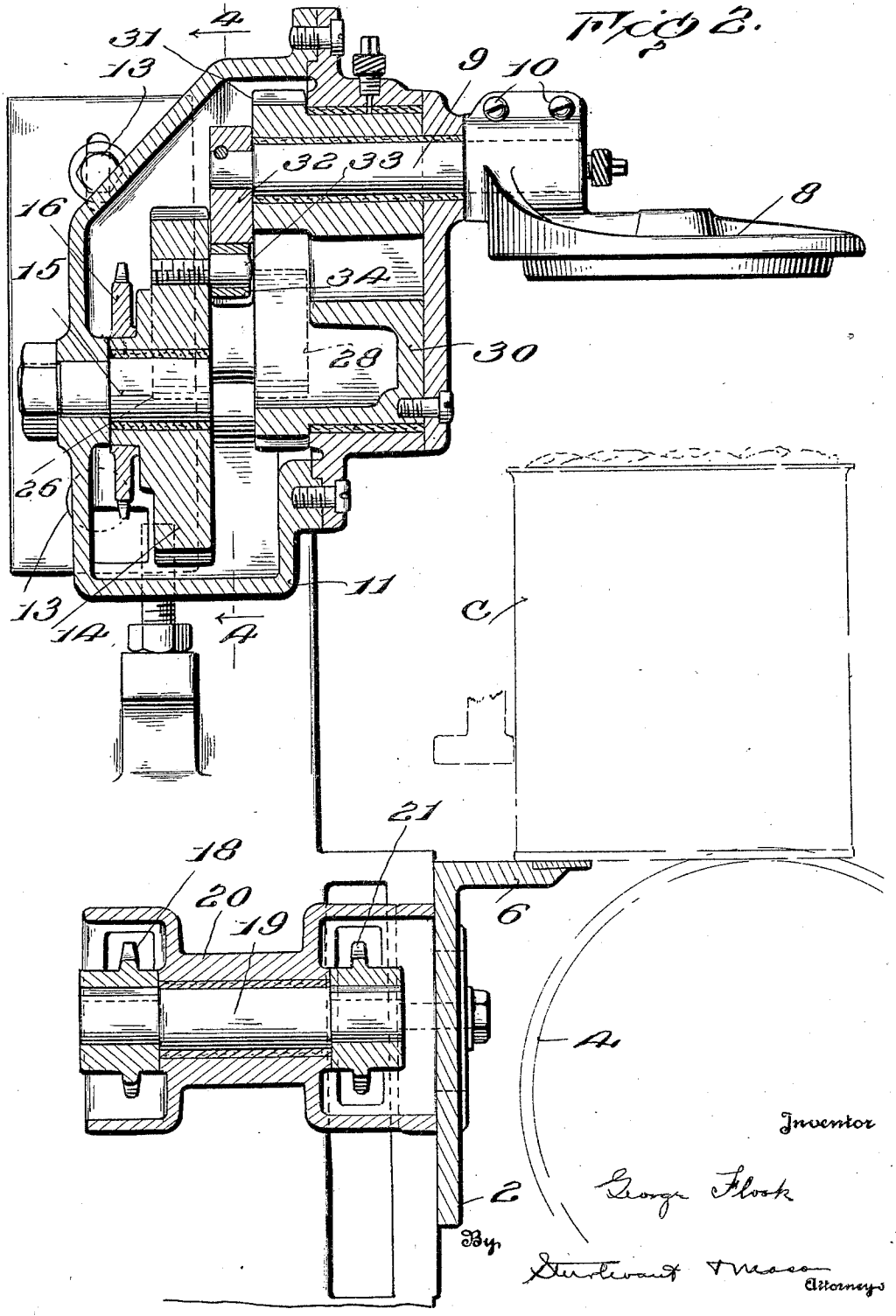
By Stewart & Mason
Attorneys

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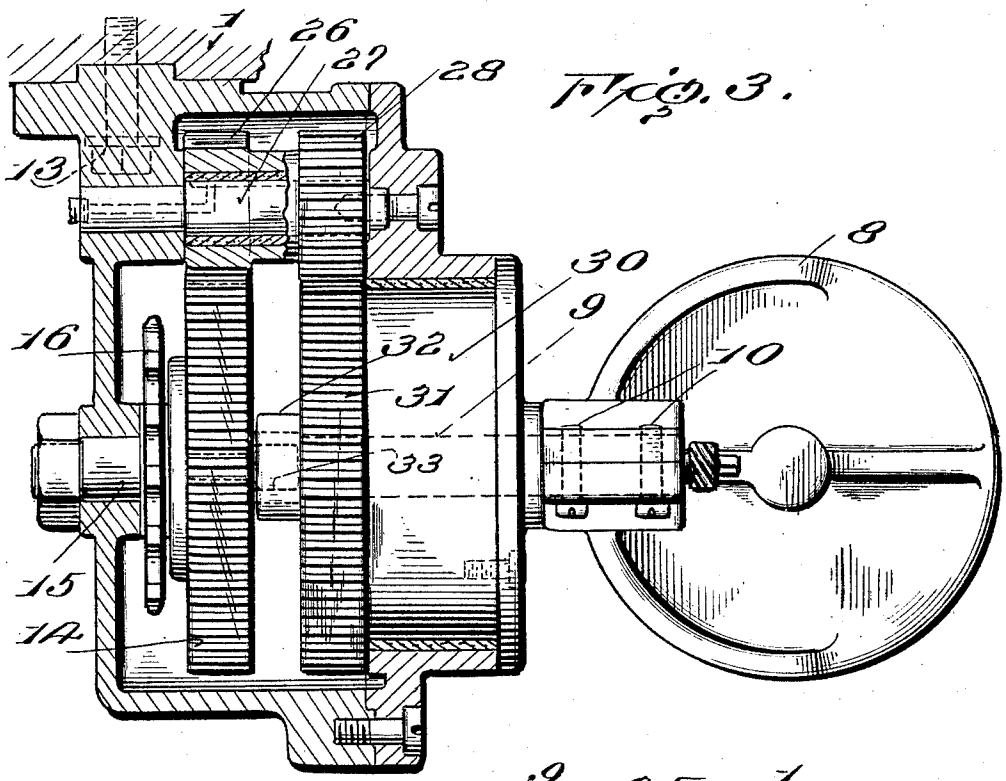


Fig. 3.

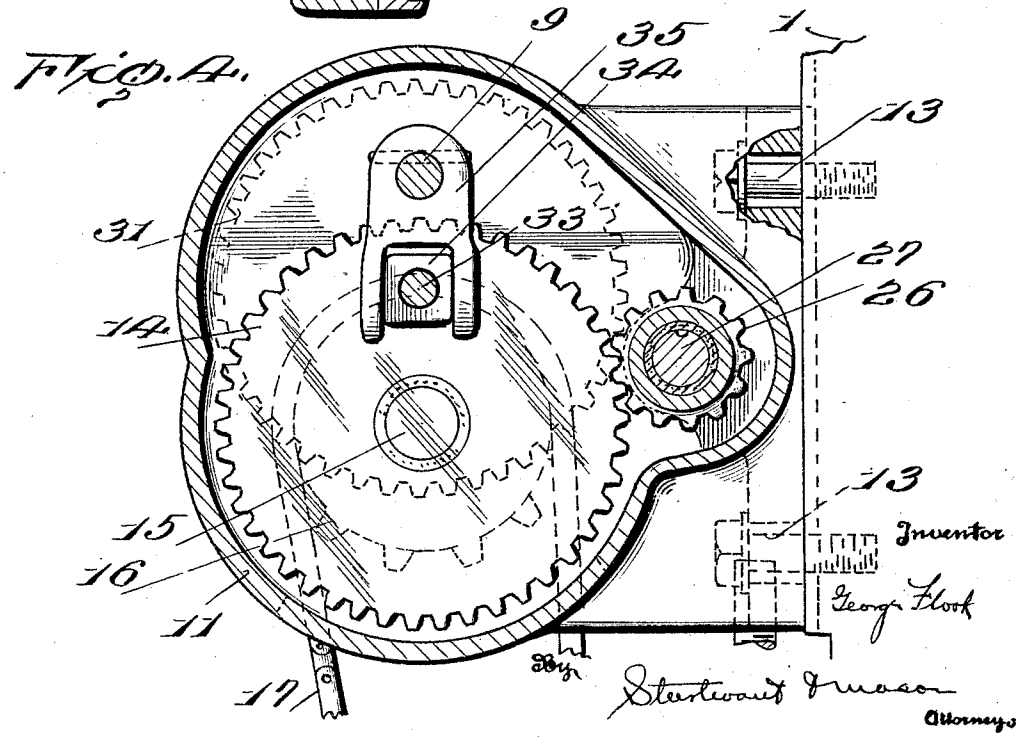


Fig. 4.

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UNITED STATES PATENT OFFICE.

GEORGE FLOOK, OF SYRACUSE, NEW YORK, ASSIGNOR TO CONTINENTAL CAN COMPANY, INC., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

PACKING DEVICE FOR FILLED-CAN-CLOSING MACHINES.

Application filed July 24, 1925. Serial No. 45,896.

The invention relates to new and useful improvements in packing devices for filled can closing machines and more particularly to a packing device which is positively operated and which cooperates with the filled can while the filled can is moving into the closing machine.

An object of the invention is to provide a packing device wherein the overflowing pad is positively moved into cooperative relation with the moving can and is positively maintained in horizontal position throughout the entire movement thereof.

A further object of the invention is to provide a packing device of the above type wherein the overflowing pad is mounted on a positively rotated support and is maintained in horizontal position by a similar positively rotated support set eccentrically to the first-named support and carrying a pin cooperating with a crank arm mounted on the shaft carrying the pad so that as the two supports are rotated one support positively rotates the pad into cooperative relation with the can while the other support maintains the pad in horizontal position.

These and other objects will in part be obvious, and will in part be hereinafter more fully disclosed.

In the drawings which show by way of illustration one embodiment of the invention—

Figure 1 is a view partly in front elevation and partly in section, showing a portion of a filled can closing machine having my improvement applied thereto,

Fig. 2 is a sectional view on the line 2—2 of Fig. 1.

Fig. 3 is a sectional view through the casing for the rotating members and showing the manner of positively rotating one member from the other.

Fig. 4 is a sectional view on the line 4—4 of Fig. 2.

The invention is directed broadly to a packing device for a filled can closing machine, that is, a machine wherein open ended cans after they are filled are closed by the seaming of the top end to the body portion of the can.

Prior to my invention it has been common to provide a closing machine with a rotating drum having a thread wound thereon, which drum becomes a feeding mechanism for feeding the filled cans to the machine where they are closed. The thread on this drum slides the cans one after another along a horizontal stationary support. Located above this support for the cans is a packing device which includes a pad adapted to move down onto the filled can for the purpose of depressing any floating fruit or vegetables down into the can, and thus properly overflowing the can so that it is in condition to be closed with a minimum amount of spill.

The present invention is directed particularly to the means of supporting and operating this overflowing pad.

This means includes a rotating disk or traveling member in which the supporting shaft for the pad is mounted and on the rear end of said shaft is a depending arm. Located in the rear of the supporting disk is another traveling disk having a stud adapted to engage the free end of the crank arm. This last-named disk is positively rotated and becomes the driving disk for actuating the pad. There is a countershaft which connects the two disks together so that one rotates the other.

Referring more in detail to the drawings, the machine includes a main frame 1 on which is adjustably mounted a table or bracket 2. Carried by this table 2 is a shaft 3, which is mounted in suitable bearings supported on the table. Mounted on this shaft 3 is a drum 4, having a spirally wound thread 5. Associated with the drum 4 is horizontal support 6, and the can which is indicated at C in the drawings rests in part upon this horizontal support 6 and in part on the drum 4 and is moved along continuously by the thread on the drum. Thus it is the cans are delivered one after the other onto a support 7 which cooperates with the closing mechanism, wherein the end is seamed onto the can body. As the cans are moved along the support therefor, an overflowing pad 8 is moved down into cooperative relation with the filled can so that any floating contents in the can is pressed down into the liquid content of the can, thus causing an overflowing if the can is too full.

The pad works in a well known way and the invention is directed more particularly to a means for actuating the pad. There is only one pad in the machine. This pad is secured to a short shaft 9 by means of clamping screws 10—10 which clamp the sleeve of the pad onto the end of the shaft. The mecha-

nism for supporting and operating the pad is carried by a casing 11 which is formed as a part of the bracket 12 secured to the machine by suitable means 13—13, see Fig. 1.

Located in this casing 11 is a rotated support 14 which as shown in the drawings is in the form of a gear wheel. This gear or support is mounted on a short stub shaft 15 which is in turn mounted in the casing 11. Secured to the rear side of the support or gear 14 is a sprocket wheel 16. This sprocket wheel is driven by a sprocket chain 17 which runs over a sprocket wheel 18 on a short shaft 19 carried in a housing 20, which is secured to the table 2 supporting the drum. This shaft 19 also carries a sprocket wheel 21 and a sprocket chain 22 runs over this sprocket wheel 21 and also over a sprocket wheel on the cross shaft 23. The cross shaft 23 carries a beveled gear 24 which meshes with a beveled gear 25 on the end of the shaft 23. The cross shaft 23 therefore becomes a common driving means for the drum 4 and for the pad actuating mechanism. It is by this means that the pad is driven in proper timing with the drum.

The gear 14 meshes with a gear 26 carried by a cross shaft 27 mounted in suitable bearings in the casing 11. This cross shaft carries a gear 28 which is of the same diameter as the gear 26.

The shaft 9 carrying the packing pad is mounted in a rotatable disk or support 30 as clearly shown in Fig. 2 of the drawings. This disk 30 carries a gear wheel 31 which meshes with the gear wheel 28. The train of sprocket gears will therefore positively rotate the support or gear 14 and this gear 14 will in turn through the cross shaft 27 rotate the front gear 31 and supporting disk carried thereby. The two gears are driven in the same timing and have a one-to-one motion.

On the end of the shaft 9 there is a depending crank 32. This depending crank is rigidly connected to the shaft 9. Mounted on the gear or support 14 is a stud 33. This stud carries a rectangular block 34 which is free to turn on the stud. The rectangular block 34 is located in the forked end 35 of the crank 32.

As the support 30 rotates, the shaft 9 will bodily travel about the center of the support and this will give the pad a bodily travel in an upright circular path. The timing of this pad is such that the pad will move down into proper cooperative relation with the can. The pad preferably carries a projecting member on the under face thereof which is of substantially the same diameter as the can, and this projecting portion moving into the can will depress the floating contents of the can and if the can is too full will bring about a slight overflowing of the same. The pad travels in a counter-clockwise direction as viewed in Fig. 1, and the can moves from left to right. Therefore, the pad will come down into the can for a moment and move along with it and then be lifted from the can.

In order to maintain the pad in a horizontal position, I have provided the crank arm 32 which has been referred to above. The rotating support 30 is eccentrically set relatively to the gear wheel 14. The stud 33 engaging the crank arm and moving in the same timing as the supporting shaft 9 for the pad will keep the pad in horizontal position. The stud maintains the crank 32 in a vertical position throughout the entire rotation of the support for the pad, and this, of course, keeps the pad in horizontal position.

From the above it will be apparent that I have provided a device wherein the means for moving the pad is a positively operating means, operating in timing with the means which cause the bodily travel of the cans with which the pad cooperates.

It will also be apparent that I have provided a positively operating member moving in the same timing as the support for the pad, for maintaining the pad in horizontal position.

It will also be apparent that I have provided a very simple mechanism, as the gear wheel, which keeps the pad in horizontal position, becomes the driving means for the support for the pad, and the only additional means for driving and maintaining the pad in horizontal position is the cross shaft, which transmits the motion of the disk or gear wheel which maintains the pad horizontal to the traveling support which moves the pad bodily in its circular path of travel.

It is obvious that minor changes in the details of construction may be made without departing from the spirit of the invention as set forth in the appended claims.

Having thus described my invention, what I desire to cover by United States Letters Patent, is:

1. A packing device for can closing machines, including in combination, a support rotating in a vertical plane, a shaft mounted in said support, a pad carried at one end of said shaft, said shaft being eccentrically mounted relative to the center of rotation of said support, a rotating member mounted eccentrically relative to said rotating support, means for positively rotating said member, means positively actuated by the rotation of said member for rotating said support for the pad, a part carried by said rotating member, and means carried by the shaft supporting the pad and cooperating with said part whereby said pad is maintained in horizontal position throughout the entire rotation of the support.

2. A packing device for can closing machines, including in combination, a support rotating in a vertical plane, a shaft mounted in said support, a pad carried at one end of said shaft, said shaft being eccentrically mounted

relative to the center of rotation of said support, a rotating member mounted eccentrically relative to said rotating support, means for positively rotating said member, means positively actuated by the rotation of said member for rotating said support for the pad, a stud carried by said rotating member, a fixed crank carried by the shaft supporting the pad, said crank being connected to said stud whereby said stud operating through the crank will positively maintain said pad in horizontal position throughout the entire rotation thereof.

3. A packing device for can closing machines, including in combination, a support rotating in a vertical plane, a shaft mounted in said support, a pad carried at one end of said shaft, said shaft being eccentrically mounted relative to the center of rotation of said support, a rotating member mounted eccentrically relative to said rotating support, means for positively rotating said member, means positively actuated by the rotation of said member for rotating said support for the pad, a stud carried by said rotating member and a crank fixed to the shaft carrying the pad, said crank having a forked end engaging the stud whereby said stud operating through the crank will maintain said pad horizontal throughout the entire rotation of the support therefor.

In testimony whereof, I affix my signature.

GEO. FLOOK.