No. 848,736. PATENTED APR. 2, 1907.

G. G. GLASS.

CAN FEEDING MECHANISM FOR CANNING MACHINES.

APPLICATION FILED JUNE 22, 1905.

2 SHEETS—SHEET 1.

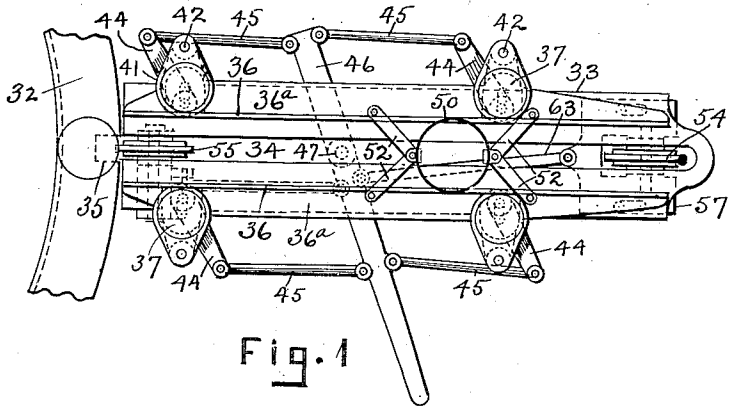


Fig. 1

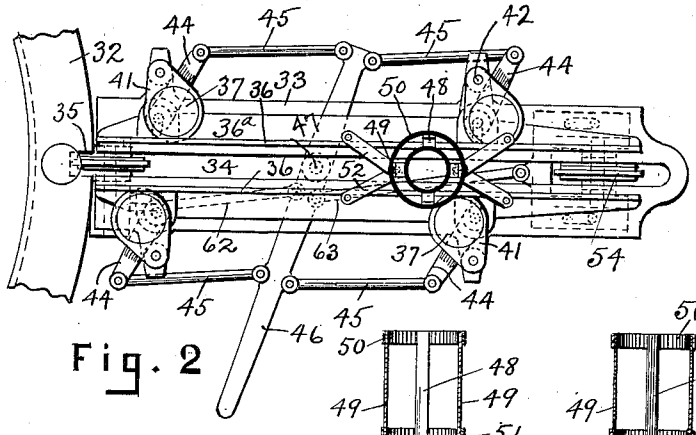


Fig. 2

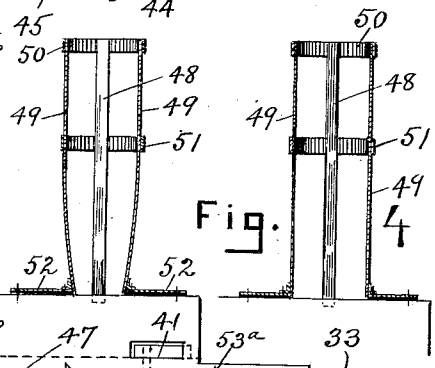


Fig. 4

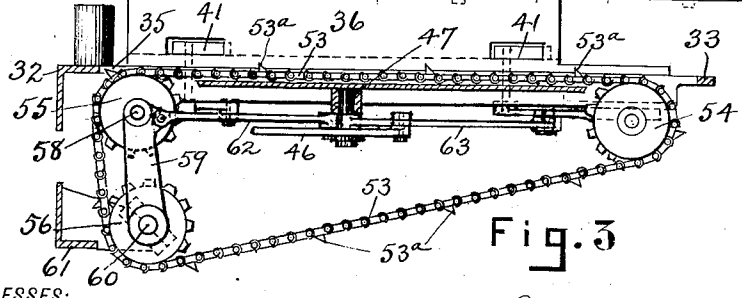


Fig. 3

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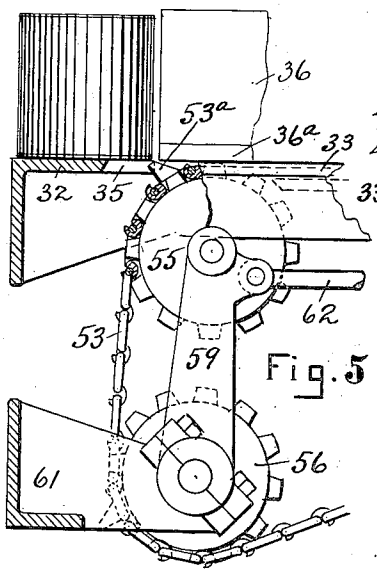


Fig. 5

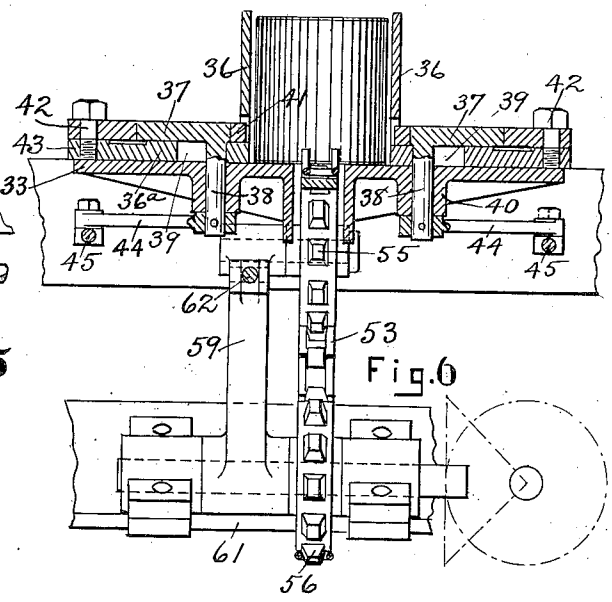


Fig. 6

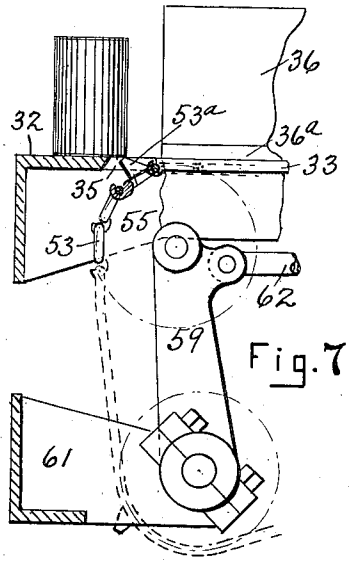


Fig. 7

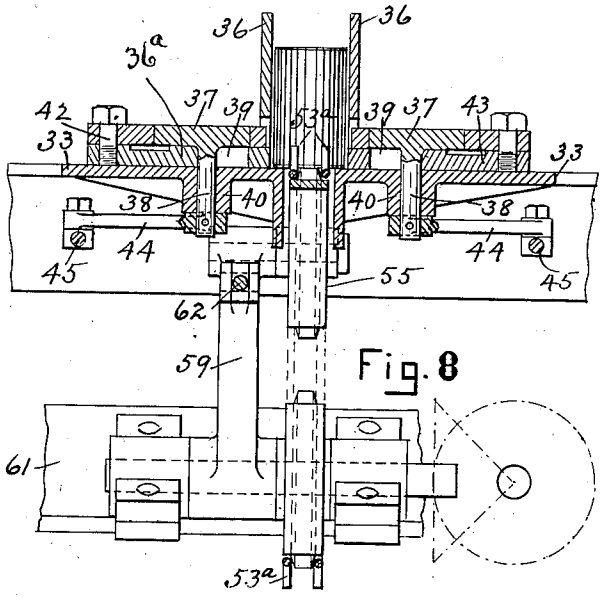


Fig. 8

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UNITED STATES PATENT OFFICE.

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CAN-FEEDING MECHANISM FOR CANNING-MACHINES.

No. 848,736. Specification of Letters Patent. Patented April 2, 1907.

Application filed June 22, 1905. Serial No. 266,535.

To all whom it may concern:

Be it known that I, GEORGE G. GLASS, a citizen of the United States, residing at Hoopeston, in the county of Vermilion and State of Illinois, have invented certain new and useful Improvements in Can-Feeding Mechanisms for Canning-Machines, of which the following is a specification.

My invention relates to machines employed in canning operations, and pertains more especially to a novel can-feeding mechanism for delivering the cans in succession to the operation of the machine.

The mechanism of my present invention is capable of application to any machine wherein the cans, whether empty or filled, are required to be fed thereto in succession, such as a filling-machine or a capping-machine; and the object of my invention is to provide an improved can-feeding mechanism capable of handling cans of considerably varying sizes by means of a simple adjustment and depositing them in the filling, capping, or other machine always in the same position relatively to the latter.

My invention has been designed more particularly for use in connection with machines of the rotary type wherein the cans are delivered in succession upon a rotary carrier, carried around by the latter and operated upon by the machine during such travel, and finally delivered by a suitable discharging mechanism usually located adjacent to the feeding-in mechanism, although the principles of my present invention are capable of application to canning-machines of other types.

My invention in an approved mechanical form is illustrated in the accompanying drawings, wherein—

Figure 1 is a top plan view of my feeding-in mechanism, with the parts shown adjusted to receive the largest size or diameter of cans adapted to be handled. Fig. 2 is a similar view showing the parts adjusted to receive the smallest size of cans designed to be used. Fig. 3 is a vertical longitudinal sectional view of the mechanism as shown in Fig. 2. Fig. 4 is a detail vertical sectional view of the spout or hopper, the same appearing in distended position. Fig. 5 is an enlarged broken detail, more particularly showing, in side elevation, the conveyer element of the feeding-in mechanism and, in part, the means for adjusting the same whereby to deliver varying sizes of cans to the same positions upon and relatively to the rotary carrier of the machine. Fig. 6 is a cross-sectional view through the feeding-in mechanism in a plane at right angles to that of Fig. 5. Fig. 7 is a view similar to Fig. 5, but showing the conveyer in its inwardly-thrown position to accommodate the smallest size of cans; and Fig. 8 is a cross-sectional view similar to Fig. 6, but showing the relative position of the conveyer mechanism when adjusted to the position shown in Fig. 7.

In the drawings, 32 may designate a portion of a can-receiving member of a rotary machine which may be, for instance, a filling-machine or a capping-machine or any other machine designed to effect any operation upon the cans during the canning process. The member 32 is in the nature of a horizontal annular or partly annular plate which may be either stationary or rotatable, according to the nature of the machine and its mode of operating upon the cans. Arranged radially opposite the receiving portion of said plate is a guide-chute for the cans consisting of the following instrumentalities.

33 designates a stationary frame member disposed opposite and radially of the receiving-plate 32, with a horizontal slot 34 extending the entire length thereof, the inner end of said slot registering with a notch 35 in the periphery of the plate 32. Mounted on the frame-plate 33 are a pair of parallel side walls 36, having horizontal base-flanges 36^a resting upon said frame-plate 33, said side walls constituting the vertically-guiding members of the chute. In order to adjust these side walls toward and from each other, so as to adapt the chute to cans of varying diameters, the following mechanism is employed.

37 designates eccentrics overlying the flanges 36^a of the side walls, said eccentrics having depending spindles 38, Figs. 6 and 8, that pass through slots 39 in the base-flanges of the side walls, and are journaled in depending bosses 40 of the frame-plate 33. Surrounding said eccentrics are eccentric-straps 41, that are pivoted at 42 to integral lateral extensions 43 of the base-flanges 36^a of the walls 36. Fast on the lower ends of the eccentric spindle 38 are arms 44, that are connected by links 45 to an actuating-lever 46, that is pivoted at 47 intermediate its ends beneath the frame-plate 33, coincident with the vertical plane of the longitudinal slot 34. Two of the links 45 connect the arms 44 on one side of the mechanism with one end of the lever 46, while the other two links 45 con-

nect the arms on the opposite side of the mechanism with opposite sides of said lever at a point equally distant from the pivot of said lever.

From the foregoing it will be seen that when the described parts are in the relative positions shown in Fig. 2 the walls 36 are at the extreme of their inward travel toward each other and the chute is adapted for the entrance of the smallest size of cans. By shifting the lever 46 laterally to the position shown in Fig. 1 the walls are carried outwardly or away from each other, thus adapting the chute to the entrance of the largest sizes of cans operated upon by the machine. By shifting the lever to intermediate points the width of the chute may be adjusted to suit intermediate sizes of cans.

In the mechanism last described the cans may be manually fed into the rear of the chute, if desired, but preferably this mechanism employs in connection therewith a vertical spout or hopper, into which the cans are fed manually at the top and which is adapted to drop the cans in close succession directly into and between the side walls of the chute, and where this spout is employed in connection with a guide-chute having adjustable side walls to suit varying diameters of cans it is desirable to provide means for simultaneously and equally adjusting the diameter of the can-spout. For this purpose I superpose on the upper edges of the vertical walls 36 a can-spout herein shown as comprising four flexible strips 48 and 49, that are suitably spaced and connected ninety degrees apart by upper and intermediate rings or hoops 50 and 51, respectively. The lower ends of the diametrically opposite flexible strips 48 are secured directly to the upper edges of the walls 36. The lower ends of the opposite strips 49 are each connected to said side walls through a pair of pivoted links 52. From this it follows that when the side walls 36 are drawn apart the lower ends of the vertical strips 48 and 49 of the spout are distended or separated, as shown in Fig. 4, thus allowing the larger sizes of cans to be fed therethrough. Conversely, when the side walls 36 of the chute are contracted or forced inwardly a similar contraction of the lower ends of the strips 48 and 49 occurs, as shown in Fig. 3, thus adapting the spout to the feeding of the smaller sizes of cans.

In connection with the adjustable guide-chute above described I employ a conveyer mechanism for carrying the cans inwardly and depositing them upon the receiving-plate 32 as fast as they are fed into the guide-chute. This conveyer, as herein shown, comprises an endless sprocket-chain 53, mounted in a vertical plane beneath the bottom of the guide-chute, said chain operating over an outer sprocket-wheel 54 and upper and lower inner sprocket-wheels 55 and 56, respectively. Said conveyer-chain 53 has on its outer face a series of equally spaced flights 53^a, adapted to contact with the lower ends of the cans and move them inwardly, it being observed that the upper carrying-section of the conveyer operates in the slot 34 in the bottom wall of the chute. In machines of this character it is important in order to insure the proper registration of the cans with the can-actuating devices of the machine that the said cans be delivered by the feeding-in mechanism in such a manner that the vertical axes of different sizes of cans will always be coincident. This means that the conveyer of the feeding-in mechanism must carry the adjacent edge of a smaller can slightly farther in upon the receiving-plate 32 than it carries a larger size of can, and vice versa, this difference in all cases equaling one-half the total difference between the diameters of such different-sized cans. Accordingly I have so mounted the endless conveyer and connected the same to the adjusting-lever 46 as that the upper horizontal carrying-section of the conveyer will be shifted inwardly or outwardly, accordingly as a small or large size of can is to be filled, to an extent proportional to the adjustment of the side walls of the chute to accommodate such different-sized cans, as already described. To effect this adjustment of the conveyer 53, I mount the outer sprocket 54 in a horizontal slide 57, engaging ways on the under side of the frame-plate 33, and I mount the upper inner sprocket-wheel 55 on a shaft 58, journaled in the upper end of a rock-arm 59, mounted on a shaft 60, suitably journaled in a stationary support 61. The upper end of arm 59 is connected to lever 46 a short distance from the pivot 47 of the latter by a link 62, and, similarly, the inner end of the slide 57 is connected by a link 63 to the other edge of said lever 46. Accordingly, when the lever 46 is moved in a direction to contract the width of the guide-chute and spout the upper section of the conveyer is moved bodily inwardly toward the rotary carrier, thus adapting the mechanism as a whole to the delivery of cans of small diameter. When the lever 46 is moved to expand the width of the guide-chute and can-spout, the upper section of the conveyer is simultaneously moved outwardly through a limited distance, thus adapting the mechanism to the delivery of larger sized cans, which latter may be so positioned upon the receiving-plate 32 that their vertical axes will occupy a vertical line coincident with the line occupied by the vertical axes of other and smaller sized cans when the mechanism is adjusted for the feeding-in of the latter. This latter feature of adjusting the conveyer simultaneously and proportionately with the adjustment of the guide-chute and can-spout constitutes a very important feature of my in-

vention, as it dispenses with the necessity of employing independent can-positioning means upon the machine to accommodate cans of varying diameters.

It being evident that the mechanism as described and shown may be modified in respect to details of construction and relative arrangement of parts by those skilled in the art without sacrificing any of the advantages thereof, I do not limit the invention to the particular mechanism shown except to the extent indicated in specific claims.

I claim—

1. A mechanism for guiding and feeding cans of varying diameters into a machine, comprising a chute having side walls so mounted as to be movable laterally relatively to each other, means for effecting such relative lateral movement of said side walls, a conveyer in said chute, and means for bodily adjusting the can-engaging portion of said conveyer, substantially as described.

2. A mechanism for guiding and feeding cans of varying diameters into a machine, comprising a chute having side walls so mounted as to be movable laterally relatively to each other, means for effecting such relative lateral movement of said side walls, a conveyer in said chute, and means for bodily adjusting the can-engaging portion of said conveyer longitudinally of said chute, substantially as described.

3. A mechanism for guiding and feeding cans of varying diameters into a machine, comprising a chute having side walls so mounted as to be movable laterally relatively to each other, means for effecting such relative lateral movement of said side walls, an endless chain conveyer operating in and longitudinally of said chute, and means for bodily adjusting the can-engaging sections of said conveyer inwardly and outwarlly of said chute, substantially as described.

4. A mechanism for guiding and feeding cans of varying diameters into a machine, comprising a chute having side walls so mounted as to be movable laterally relatively to each other, a transversely-expansible and contractible can-spout secured to and mounted upon said side walls, a conveyer in said chute, and means for effecting relative lateral movement of said side walls, substantially as described.

5. A mechanism for guiding and feeding cans of varying diameters into a machine, comprising a chute having laterally-movable side walls, a conveyer in said chute, a transversely-expansible and contractible can-spout disposed above said side walls, a manually-operable member, actuating connections between the latter and said side walls, and connections between said side walls and can-spout whereby the contraction or expansion of the latter is effected simultaneously with the narrowing or widening of said chute, substantially as described.

6. A mechanism for guiding and feeding cans of varying diameters into a machine, comprising a chute having laterally-movable side walls, a conveyer in said chute, a transversely-expansible and contractible can-spout disposed above said side walls, a manually-operable member, actuating connections between the latter and said side walls, other actuating connections between said manually-operable member and the can-engaging section of said conveyer whereby the latter may be moved bodily inwardly and outwardly of the chute, connections between said side walls and can-spout whereby the contraction or expansion of the latter is effected simultaneously with the narrowing or widening of said chute and with the inward or outward movement of said conveyer, substantially as described.

GEORGE G. GLASS.

Witnesses:
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CHARLES W. SPARHAWK.