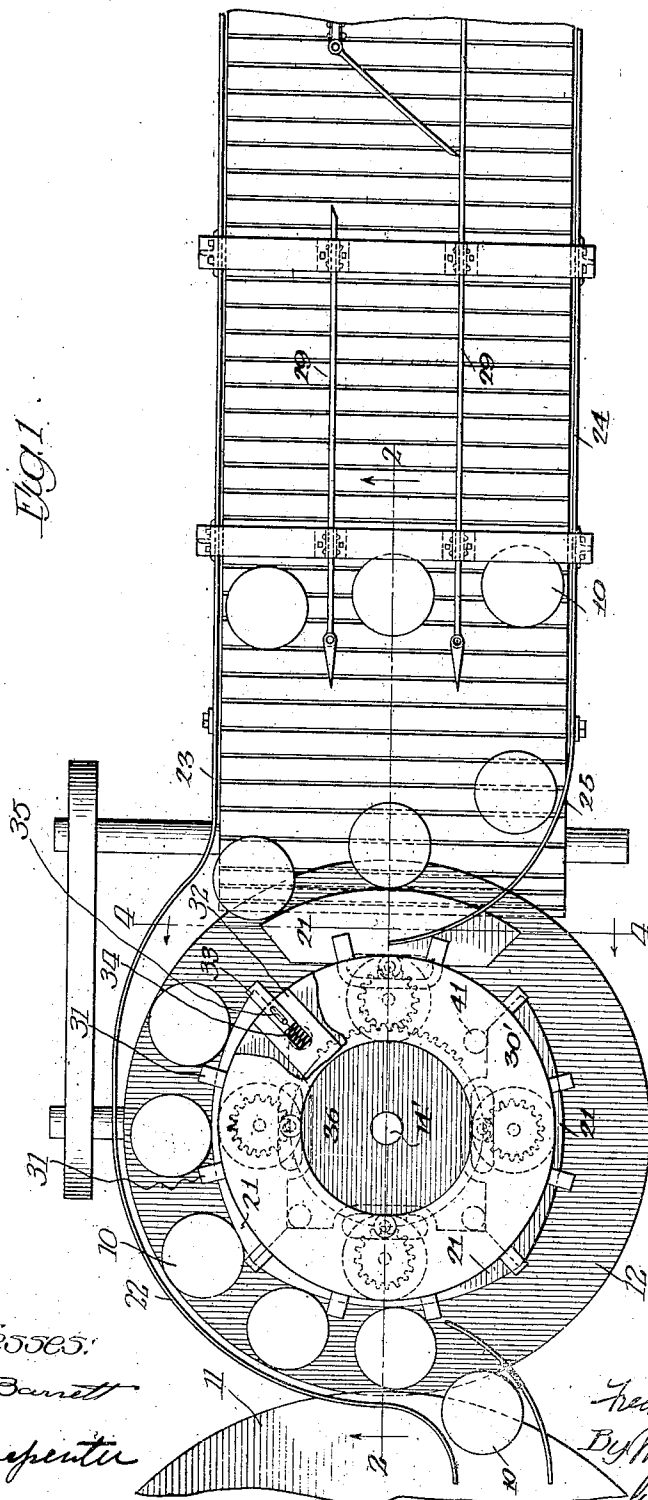


1,284,637.

F. G. FOSS.
CAN FEEDING MECHANISM.
APPLICATION FILED JUNE 1, 1915.

Patented Nov. 12, 1918.
2 SHEETS—SHEET 1.

Fig. 1.



Witnesses:

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J. C. Carpenter

Inventor:

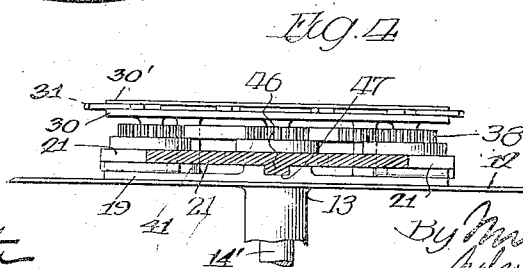
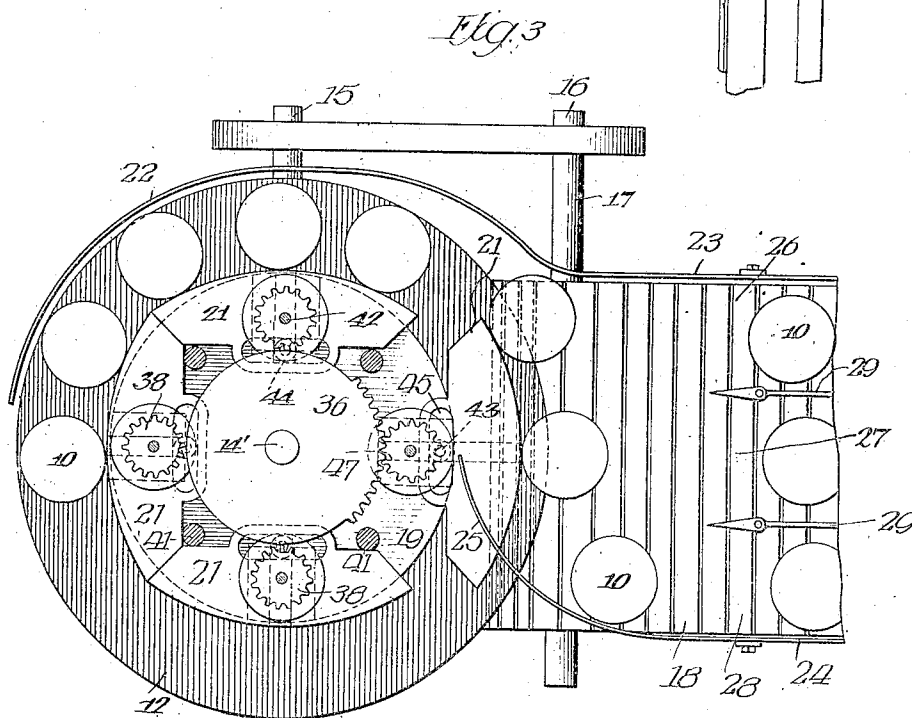
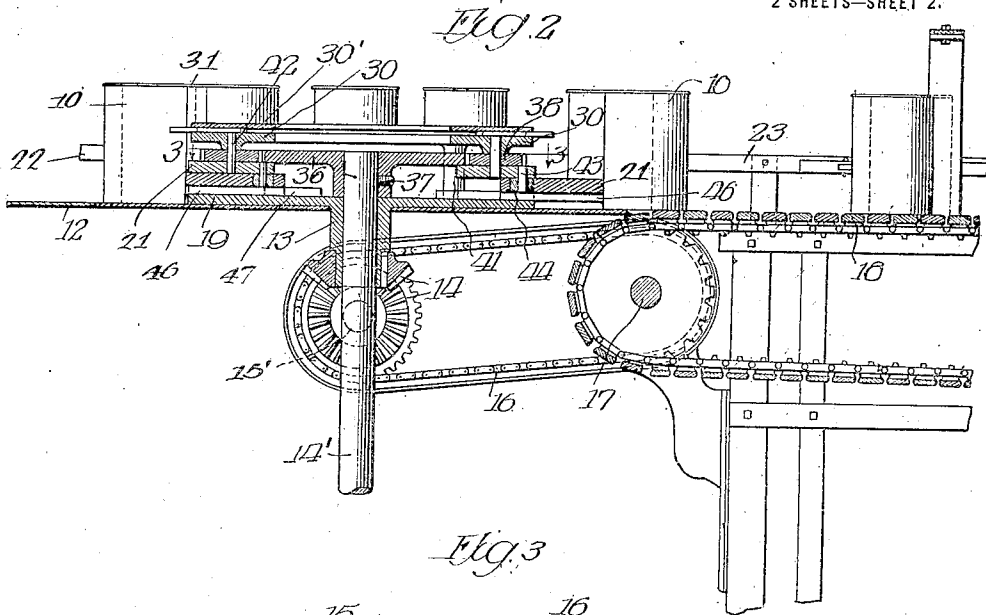
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

FRED G. FOSS, OF BROOKLYN, NEW YORK, ASSIGNOR TO AMERICAN CAN COMPANY,
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CAN-FEEDING MECHANISM.

1,284,637.

Specification of Letters Patent.

Patented Nov. 12, 1918.

Application filed June 1, 1915. Serial No. 31,349.

To all whom it may concern:

Be it known that I, FRED G. FOSS, a citizen of the United States, residing in Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Can-Feeding Mechanism, of which the following is a specification.

My invention relates in general to can-feeding mechanisms and has more particular reference to mechanisms of this character designed to transfer the filled and unheaded cans from the filling machines to the can-heading and closing machines, however as the invention is better understood it will be manifest that it has other and more general application. In mechanism of the character described it is particularly desirable that the can be moved from one machine to the other smoothly and without jars or shocks which will cause spilling of the contents.

A principal object of this invention is the provision of mechanism of the character described which will smoothly transfer the cans from a filling or other machine to a can-heading or closing machine or the like and this without appreciably jarring the contents.

A further object of the invention is the provision of such a mechanism which will receive cans from a single machine and deliver them to a number of other machines arranged appropriately.

A further object of the invention is the provision of a machine of the character described which will be of economical construction and simple, durable and efficient operation.

Other objects and advantages of the invention will be apparent as it is better understood from the following description when considered in connection with the accompanying drawing illustrating a preferred embodiment thereof.

Referring to the drawing,

Figure 1 is a top plan view of a mechanism embodying my present invention;

Fig. 2 is a section taken substantially on the line 2—2 thereof;

Fig. 3 is a section taken substantially on the line 3—3 of Fig. 2; and

Fig. 4 is a section taken substantially on the line 4—4 of Fig. 1.

The can-feeding mechanism embodying

my invention and shown on the drawing is adapted to receive cans 10 from a disk 11 or other part of a filling or other machine. The cans 10 are received into the feeding mechanism embodying my present invention upon a rotating disk or table 12. The disk 12 is secured to a collar 13 (Fig. 2) rotatably embracing a stationary shaft 14'. The collar 13 carries the moving parts and is rotated continuously by miter or bevel gears 14 the driving one of which is mounted upon a suitable shaft 15 and driven by a sprocket chain 16 from a shaft 17, which in turn receives continuous movement from a traveling conveyer 18, as seen in Fig. 2.

The disk 12 is secured to a plate 19 upon which slide can-ejecting devices 21, which devices are adapted to move some of the cans from the plate onto the conveyer at appropriate intervals. The ejecting devices are four in number and each constitute a segment of a continuous ring. As the cans are received on the plate they are disposed between the outer surface of this segmental ring and a fixed guide 22 extending about the side of the disk upon which the cans are disposed in moving from their point of reception from the plate 11 to the points of discharge onto the conveyer 18. The guide 22 forms a part of a guide 23 at the adjacent side of the conveyer. A guide 24 is provided at the other side of the conveyer and this guide is continued over the disk 19 as at 25 for a purpose to be later described. The conveyer is divided into three separate parts *i. e.*, 26, 27 and 28 forming lanes, and this by means of two intermediate guides 29. Viewing Fig. 1, it will be noted that the cans 10 are accurately positioned between spring plungers 31 sliding in blocks 32 fitting between annular plates or rings 30 and 30' which are carried upon posts 41 secured to the plate 19, as will be later described. Each of these plungers consists of a radially sliding finger 33 (Fig. 1) mounted in a recess in its block 32 and normally held outwardly by a spring 34, a slot connection 35 being provided between the block and finger to limit outward motion of the finger. The distance between the normal outer ends of these fingers and the guide 22 is such that the inter-position of a can will depress the spring and cause the can to be retarded by the outer guide until it rests be-

tween the fingers, in which position it will be retained by the outward protrudence of the finger behind it until it reaches the discharge position. Each segmental part 21 of the ring is disposed beneath three spaces between these plungers. This provides three can positions opposite each segmental part, this number being the number of lanes also on the conveyer, it being desirable that each segmental part shall carry in front of it a number of cans equal to the number of lanes upon the conveyer.

As each segmental part approaches the conveyer it starts to move radially outwardly and when immediately opposite the conveyer it is at the end of its outward stroke. It returns thereafter back to normal position before further cans may be positioned in front of it. These movements are imparted to the segmental parts of the ring by a fixed mutilated gear 36 which is fastened at 37 upon the end of the stationary shaft 14'. This gear engages pinions 38 mounted upon the ring 30 which is carried above the plate 19 on posts 41 so that the ring 30 moves with the plate 19 and with the disk 12. The pinions are secured to the under side of this plate on pivotal connections 42. Each pinion carries a crank 43 upon which is mounted a roller 44 which in turn is engaged in a slot 45 extending transversely of the rear of an appropriate segmental part 21. The pinions 38 engage the forward end of the mutilated gear 36 as they successively arrive at the discharging station and after engaging therewith, turning of the pinion moves outwardly the segmental part into the position shown in Fig. 3. This serves to discharge the two rear-most of the three cans carried by the segmental part, the other can being guided off by the extension 25 of the guide 24. The segmental parts are constrained to move in a true radial reciprocation by a rib 46 taking in an appropriate slot 47 in the plate 19.

It will be manifest that any number of lanes may be provided upon the conveyer, it being desirable that a corresponding number of cans be disposed opposite each segmental part.

It is thought that the invention and many of its attendant advantages will be understood from the foregoing description, and it will be apparent that various changes may be made in the form, construction and arrangement of the parts without departing from the spirit and scope of the invention or sacrificing any of its material advantages, the form hereinbefore described being merely a preferred embodiment thereof.

I claim:

1. A can-feeding mechanism comprising a traveling table upon which the cans are received, and circumferentially extending means carried by said table for ejecting a

plurality of cans located upon a portion thereof at a predetermined station in the rotation of said table.

2. A can-feeding mechanism comprising a rotating disk upon which the cans are received, and independent means upon successive portions of said disk each for ejecting a plurality of cans as they arrive at a predetermined station.

3. A can-feeding mechanism comprising a rotating disk upon which the cans are received, segmental members movable with said disk and forming a substantially continuous can-propelling means around the same, and means for moving outwardly each segment thereof as it arrives at a predetermined station in the travel of said disk to eject the cans upon the disk in front of said segment.

4. A can-feeding mechanism comprising a rotating disk upon which the cans are received, yielding members arranged radially above and rotary with said disk and adapted to receive cans therebetween for automatically spacing them upon the disk, and means rotary with the disk for engaging at once several circumferentially arranged and spaced cans for ejecting said cans from the disk at a predetermined station.

5. A can-feeding mechanism comprising a rotating disk upon which the cans are received, a segmental member mounted upon said disk and rotatable therewith, means for moving outwardly successive segments of said member at a predetermined point in the travel to eject cans from said disk, and means for positioning a predetermined number of cans opposite each segmental part.

6. A can-feeding mechanism comprising a rotatable disk upon which the cans are received, an ejecting member mounted thereon and operable at a predetermined point in its travel, and means for positioning a plurality of cans in position to be ejected by said ejecting member at each operation thereof.

7. A can-feeding mechanism comprising a rotating disk upon which the cans are received, a segmental member movable with said disk for ejecting cans therefrom, pinions movable relatively with the segments of said member and having a pin and crank connection therewith, and means for rotating said pinion at a predetermined point in the travel of said disk to impart to the segments an outward reciprocation to eject cans from said disk.

8. A can-feeding mechanism comprising; a horizontal rotating table; means for delivering cans in upright position on the top surface of said table; a plurality of can ejectors carried by said table above its top surface; means for positioning together a predetermined number of cans on said table and several cans in the path of each of said

can ejectors; means carried by said table for actuating said can ejectors; and means located in the paths of said can ejector actuating means whereby the said can ejectors are caused to operate successively at a predetermined station.

9. A can-feeding mechanism comprising a rotating table; a plurality of can ejectors carried by said table and having can-engaging faces substantially concentric with the table; means for positioning together a predetermined number of cans on said table and in the path of each of said can ejectors successively; means carried by said table for actuating said can ejectors; and means fixed in the paths of said can ejector actuating means whereby the said can ejectors are caused to operate at a predetermined station.

10. A can-feeding mechanism comprising a rotating table; a central substantially continuous can ejector carried by said table and comprising a plurality of separate can ejecting units; means for positioning together a predetermined number of cans on said table and in the path of each of said can ejecting units successively; means carried by said table for actuating said units; and means located in the path of said ejector unit actuating means whereby the said can ejector units are caused to operate successively at a predetermined station.

11. A can-feeding mechanism comprising a rotatable table; centrally located can ejector means carried by said table, said ejector comprising a plurality of segmental can ejector members; means for positioning a plurality of cans in front of each can ejector member; can ejector operating devices carried by said table and engaging said ejector members; and means located in the path of said operating devices whereby said operating devices may be successively actuated at a predetermined station.

12. A can-feeding mechanism comprising a rotatable table; centrally located can ejector means carried by said table, said ejector comprising a plurality of segmental can ejector members; means for positioning a plurality of cans in front of each can ejector member; can ejector operating devices carried by said table and engaging said ejector members, said operating devices comprising rotary members having crank members engaging said can ejector members; and means located in the path of said rotary members whereby said operating devices may be successively actuated at a predetermined station.

13. A can-feeding mechanism comprising a rotatable table; centrally located can ejector means carried by said table, said ejector comprising a plurality of separate segmental can ejector members; means for positioning a plurality of cans in front of each can ejector

member; can ejector operating devices carried by said table and engaging said ejector members; said operating devices comprising pinions having crank members engaging said can ejector members; and means fixed in the path of said operating devices whereby said operating devices may be successively actuated at a predetermined station.

14. A can-feeding mechanism comprising a rotatable table; centrally located can ejector means carried by said table, said ejector comprising a plurality of segmental can ejector members; means for positioning a plurality of cans in front of each can ejector member; can ejector operating devices carried by said table and engaging said ejector members; said operating devices comprising pinions having crank members engaging said can ejector members; and a stationary mutilated gear in the path of said operating devices whereby said operating devices may be successively actuated at a predetermined station.

15. A can-feeding mechanism comprising a rotatable table; adapted to receive and carry a succession of cans; a centrally located ejector element comprising a plurality of radially operating slotted segmental ejector members operating in radial guides in said table; means for positioning a plurality of cans in the path of said ejector members; can ejector operating pinions carried by said table and provided with crank members adapted to operatively engage the slots in said ejector members; and a centrally located stationary mutilated gear adapted to be successively engaged by said ejector operating pinions, whereby said ejector members may be successively operated at a predetermined station.

16. In a can-feeding machine, in combination: a can-transferring and distributing table rotary on a substantially vertical axis and arranged to deliver distributed cans from different points of its periphery; an endless belt conveyer leading away from the delivering part of the said table, to which conveyer the cans are delivered distributed at different parts of its width; means which form separate fixed longitudinal lanes over the can-carrying surface of the conveyer; and can-ejecting means for automatically forcing the cans from the table to the conveyer in such distributed arrangement and causing them to be received in separate lines in the said lanes of the conveyer.

17. A can-feeding mechanism comprising, in combination: a rotary can-distributing table; a plurality of can ejecting members carried by said table; means comprising a plurality of can spacing plungers carried by said table for arranging and retaining a plurality of cans in the path of each of said can ejecting members; a plurality of lanes

adjacent the delivery station of said table and adapted to receive in line cans ejected from said table; and means whereby said can ejecting members may be actuated when the cans are substantially in alinement with said lanes by the action of said plungers.

18. A can-feeding mechanism comprising a traveling table upon which the cans are received; means carried by said table for ejecting at once a plurality of cans located upon a portion thereof at a predetermined station in the rotation of said table; and a deflecting guide adjacent said table adapted to coact with said ejecting means in controlling the most advanced can as it is delivered.

19. A can-feeding mechanism comprising, in combination: a continuously rotatable horizontal table; a plurality of can ejecting members carried by said table; means whereby a plurality of cans may be arranged on said table together in front of each of said can ejecting members; and means by which said can ejectors may be successively, radially actuated at an accelerating and diminishing velocity at a predetermined station.

20. A can-feeding mechanism comprising, in combination: a continuously rotatable table; a plurality of can ejecting members carried by said table, means whereby a plurality of cans may be arranged on said table in front of said can ejecting members; means by which said can ejectors may be suc-

cessively radially actuated at an accelerating and diminishing velocity at a predetermined station; and means which receive the ejected cans from said table in separate parallel lines.

21. In a can feeding and distributing apparatus, in combination: a continuously traveling support having means for holding filled cans thereon in upright position; means for ejecting said cans from said support at several different points of a delivery station; and can receiving means at said station and leading away from said support and receiving said cans in separate lines of successive upright cans.

22. In a can-feeding mechanism for the distribution of a collection of cans into a plurality of rows, in combination: a traveling support or table which slidably supports and carries said cans in succession and in upright position; a can ejector above the table adapted to engage and eject a plurality of cans at once at a can delivery station; means for actuating said ejector to deliver the cans at said station; and means for receiving and maintaining the ejected cans in separated rows.

Signed in the presence of two subscribing witnesses.

FRED G. FOSS.

Witnesses:

W. D. FOSTER,
D. F. MENNIS.