July 16, 1929. A. R. THOMPSON 1,721,193

CAN FEEDER FOR VERTICAL COOLERS

Filed May 7, 1927

Fig. 1.

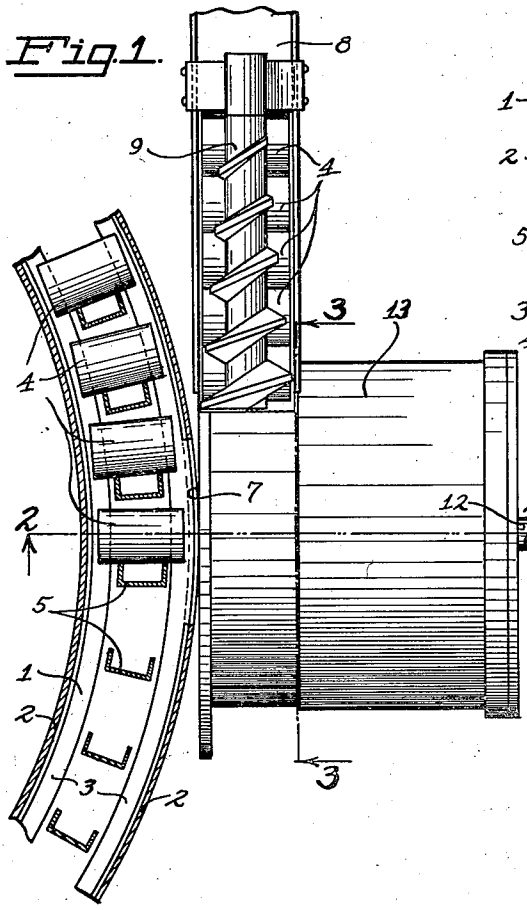


Fig. 2.

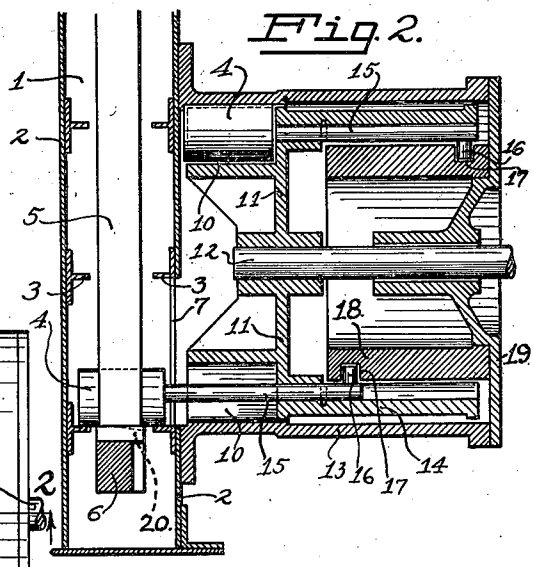
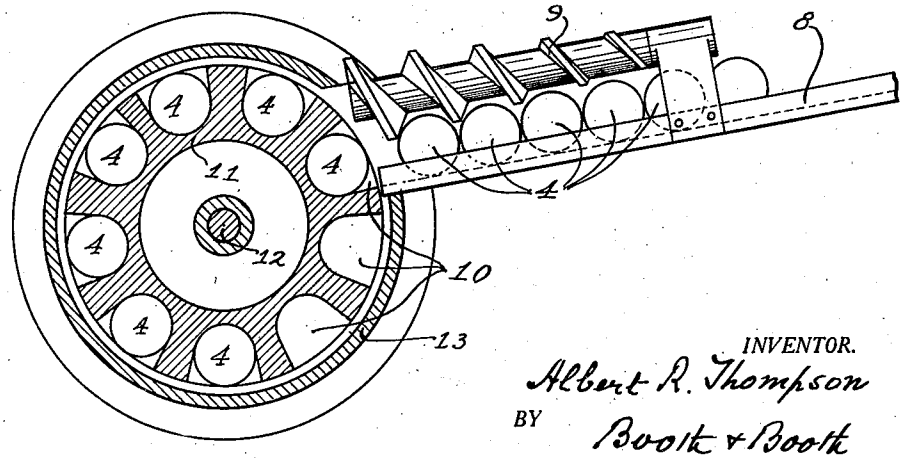


Fig. 3.



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UNITED STATES PATENT OFFICE.

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CAN FEEDER FOR VERTICAL COOLERS.

Application filed May 7, 1927. Serial No. 189,724.

My invention relates to an apparatus for feeding cans into that type of treating chamber described in my pending application for United States patent for vertical coolers, Serial No. 104,675, filed April 26th, 1926, said application having resulted in Patent No 1,651,912, issued December 6th, 1927.

The treating chamber described in said pending application comprises inner and outer concentric shells having a vertical axis and forming an annular chamber between them within which is an ascending helical track upon which the cans are adapted to roll on their sides. The track is formed of spaced rails and the cans are propelled along it by a reel comprising a series of parallel spaced pusher bars, said bars being disposed vertically, i. e., at right angles to the axes of the cans, and extending the entire length of the helix.

In order to obtain the maximum can carrying capacity in a treating chamber of this type, it is necessary to space the pusher bars by a distance only slightly greater than the can diameter. The arrangement of the track and the pusher bars requires that the cans be introduced into the chamber from the side, and the small clearance between the successive bars necessitates quick and accurate positioning of the cans therebetween. The bars are assumed to be continuously moving.

The object of my present invention is to provide a means for introducing the cans quickly and accurately through the side wall of a chamber of the above type, and positioning them on the helical track therein between the pusher bars.

A further object is to provide a feeder adapted to receive the cans from a chute along which they advance by rolling upon their sides, and to feed them into the feeding chamber by pushing them endwise without changing the direction of their axes.

Other objects and advantages of the invention will become apparent from the following specification which must be read with the understanding that the form, construction and arrangement of the several parts may be varied within the limits of the claims hereto appended without departing from the spirit of the invention as expressed in said claims.

A preferred embodiment of the invention will now be described with reference to the accompanying drawings, wherein:—

Fig. 1 is a plan view of my feeder showing in section a portion of the treating chamber to which it is applied.

Figs. 2 and 3 are vertical sections taken respectively on the lines 2—2 and 3—3 of Fig. 1.

In the drawings, the reference numeral 1 designates a portion of the annular treating chamber into which the cans are to be fed. 2 are the walls thereof, and 3 are the rails forming a helical track therein. The cans 4 roll on their sides along said track, and are propelled by a series of spaced pusher bars 5. 6 in Fig. 2 is a ring joining the lower ends of the bars 5, it being understood that their upper ends are joined by a similar member, not shown, to form a rigid reel. The outer wall of the chamber 1 is provided with an aperture 7 through which the cans are introduced.

A chute 8, Figs. 1 and 3, brings the cans, rolling upon their sides, to the apparatus. Overlying the end portion of said chute is a worm 9 adapted to space and time the advancing cans, and to feed them successively into the pockets 10 of a continuously rotating turret 11. The turret 11 is mounted upon a horizontal shaft 12, and is surrounded by a cylindrical housing 13 which retains the cans within the pockets 10. The housing 13 is secured to the outer wall of the chamber 1 in such a position that its lower portion is opposite the feed aperture 7.

The turret 11, as shown in Fig. 2, has an outward or rearward extension 14, in which are mounted slidable push rods 15, there being one such push rod aligned with the center of each pocket 10. The outer ends of the push rods 15 carry rollers 16 adapted to follow a grooved cam 17 formed in a fixed sleeve 18, which is secured to the end wall 19 of the housing 13. Thus as the turret 11 revolves the push rods 15 are moved in and out horizontally by the cooperation of their rollers 16 and the grooved cam 17, and said cam is so formed as to cause the push rods 15 to be retracted while passing the end of the feed chute 8, and to be moved inwardly when passing the chamber feed aperture 7.

The cans are, therefore, fed into the pockets 10 of the turret by the worm 9, and are

carried around in said pockets until opposite the chambered aperture 7. At this point in the rotation of the turret, the push rods 15 are moved inwardly, thereby pushing the cans endwise out of the turret pockets 10 and on to the chamber track 3 between the reel bars 5, as shown in Fig. 2. The upper surface of the bottom reel ring 6 is positioned at the level of the can track 3, and its outer edge is slightly beveled, as indicated at 20, to enable the cans to slide across it readily without catching. It is understood, of course, that the worm 9, the turret 11, and the reel carrying the bars 5, are all driven in the proper timed relation. Any suitable means may be employed for this purpose, but as such a drive mechanism is well known in the art, it has been omitted from the drawings to prevent confusion. The grooved cam 17 must be so formed as to cause the cans 4 to be pushed into the spaces between the reel bars 5 quickly and accurately.

It is to be noted that the cans are under positive control at all times during the feeding operation, and that the direction of their axes is not changed, the feeding into the chamber 1 being accomplished by sliding said cans endwise thereinto.

I claim:—

1. The combination with a track adapted for the rolling passage of a series of cans upon their sides, and a series of spaced pushers adapted to advance said cans along said track, of means for feeding the cans onto said track from the side thereof by sliding them endwise between said pushers.

2. The combination with a track adapted for the rolling passage of series of cans upon their sides, and a series of spaced pushers for advancing said cans along said track, of a moving member having pockets adapted to receive the cans successively; and means for sliding the cans endwise out of said pockets and onto said track between said pushers.

3. The combination with a track adapted for the rolling passage of a series of cans upon their sides, and a series of spaced pushers adapted to advance said cans along said track, of a rotating turret having pockets adapted to receive the cans successively; and means for sliding the cans endwise out of said pockets and onto said track between said pushers.

4. The combination with a treating chamber having a feed aperture in its wall, of a rotating turret positioned adjacent to said wall and provided with pockets adapted to receive a succession of cans; and means for sliding the cans endwise out of said pockets and through said aperture.

5. The combination with a treating chamber having a feed aperture in its wall, of a turret provided with a can receiving pocket; a push rod carried by said turret and adapted to engage the end of the can within said pocket; and means for operating said push rod to slide the can endwise out of said turret and through said aperture.

6. The combination with a treating chamber having a feed aperture in its wall, of a rotating turret having a can receiving pocket; a push rod carried by said turret and adapted to engage the end of the can in said pocket; and a stationary cam adapted to engage and operate said push rod to cause it so slide the can endwise out of said pocket and through said aperture.

7. The combination of a treating chamber having a feed aperture in its wall, of a rotating turret having a can receiving pocket; means for feeding a can into said pocket in timed relation to the movement of said turret; and means for sliding the can endwise out of said pocket and through said aperture.

8. The combination with a treating chamber having a feed aperture in its side wall, of a rotating turret having a horizontal axis, and provided with can receiving pockets; means for retaining the cans within said pockets; a chute adapted to feed a rolling series of cans upon their sides to said pockets; a worm overlying said chute for timing the entrance of the cans into said pockets; and means for sliding the cans endwise out of said pockets and through the feed aperture of said chamber.

In testimony whereof I have signed my name to this specification.

ALBERT R. THOMPSON.