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CAN HANDLING APPARATUS  
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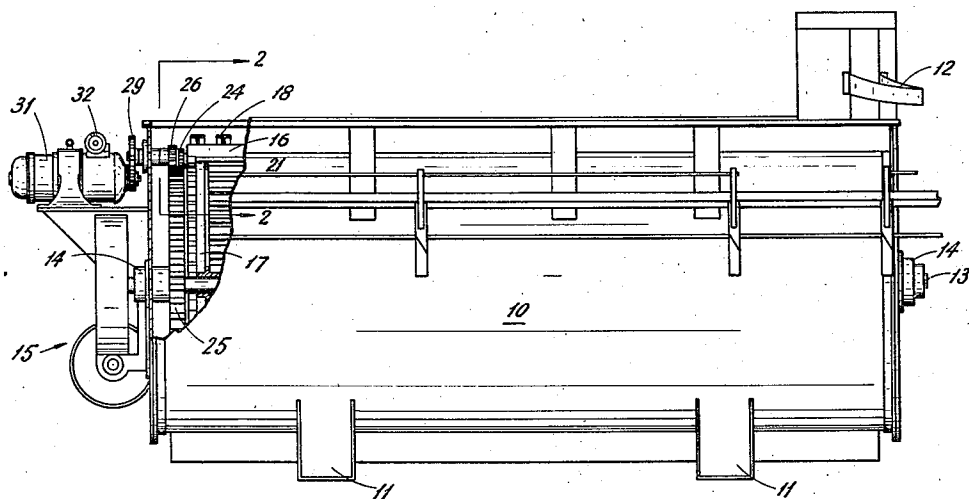


Fig. 1

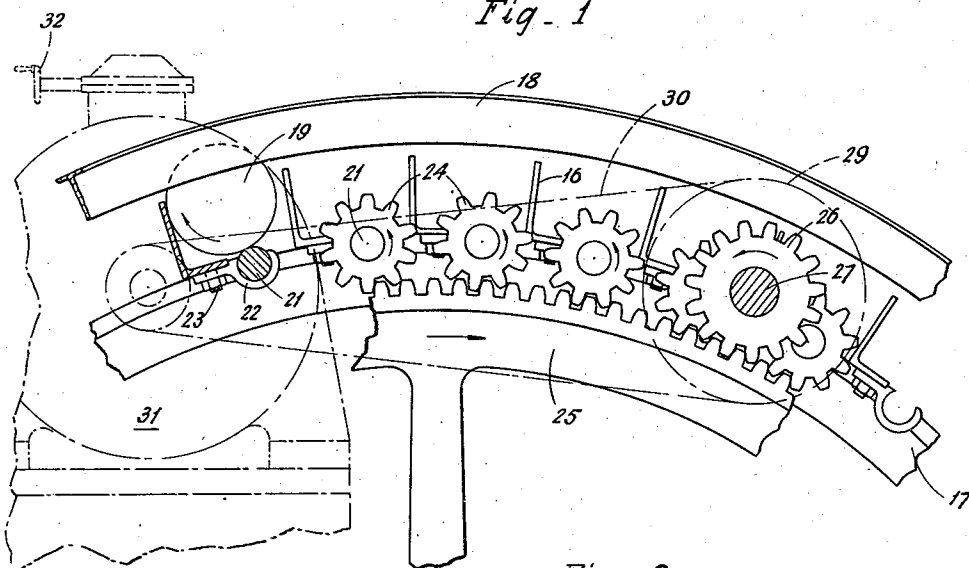


Fig. 2.

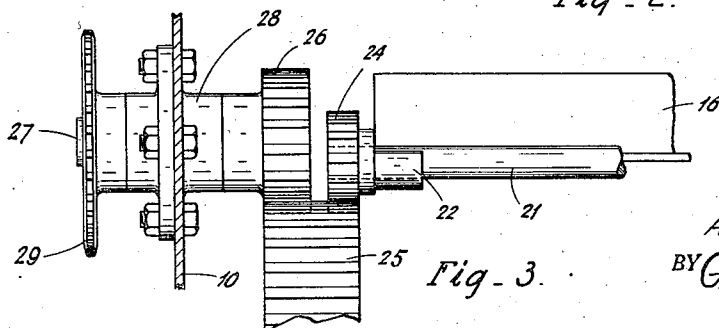


Fig. 3.

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## UNITED STATES PATENT OFFICE

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## CAN HANDLING APPARATUS

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11 Claims. (Cl. 259—54)

The present invention is concerned with treating apparatus for canned goods, such as cookers, coolers, and the like, of the rotating reel and spiral canway type, and is concerned more particularly with the provision of apparatus of this character in which the cans are subjected to agitation and movement during their travel through the apparatus.

It is a general object of the invention to provide improved treating apparatus for canned goods in which the cans may be agitated during the treating operation.

Another object of the invention is to provide improved treating apparatus of the rotating reel and spiral canway type in which the cans are agitated in traveling through the apparatus, and in which the amount of agitation can be controlled.

Other objects of the invention will be apparent from the following description of a preferred embodiment thereof as disclosed in the accompanying drawing, in which:

Fig. 1 is an elevational view of a cooler embodying the invention, with the casing partially broken away to illustrate details of construction.

Fig. 2 is a sectional elevation of a part of the apparatus, the view being taken in the plane of the line 2—2 in Fig. 1.

Fig. 3 is an enlarged fragmentary sectional elevation of a part of the mechanism shown in Fig. 1.

Generally, the apparatus may comprise a cylindrical shell 10 suitably supported by feet 11, and having a suitable can inlet (not shown) and a suitable can discharge means 12. Within the shell 10, a can propelling reel is mounted on a longitudinal shaft 13 which is supported in suitable bearings 14 in the end walls of the shell and is driven by drive means 15 of conventional construction. The reel comprises a series of angle shaped pusher bars 16 carried by a plurality of suitable heads 17 secured on the reel shaft 13, the bars 16 being arranged to provide longitudinal can receiving pockets therebetween. The pusher bars 16 of the reel rotate within a spiral canway formed by the convolutions of a T-bar 18 suitably secured within shell 10 so that as the cans are propelled by the pusher bar 16 they are moved endwise as they progress around the successive convolutions of the canway formed by the T-bar 18. As is well known, the operation of this type of apparatus is such that during substantially the lower half of the travel of the cans around the convolutions of the canway, they are rolled therealong, while during the upper portion

of their travel they are carried bodily by the pusher bars as shown, for example, at 19 in Fig. 2.

In order to provide for agitation of the cans during their progress through the apparatus, means are provided for rotating the cans at a desired rate while they are supported by the reel, and preferably such means is adjustable to vary the rate of rotation or the amount of agitation so that it can be selected in accordance with the product being processed. The can agitating means associated with each pusher bar 16 preferably comprises a longitudinal shaft 21 which is supported parallel to and adjacent the horizontal flange of the pusher bar by a plurality of bearings 22 suitably secured as by fastening bolts 23 to the respective pusher bars 16. At one end of each shaft 21, a pinion 24 is provided to mesh with a large drive gear 25 which is journaled for rotation on the shaft 13 within the shell. The gear 25 as shown in Fig. 3, is sufficiently wide to engage a drive pinion 26 in addition to the agitating shaft pinions 24. The drive pinion 26 is secured on a stub shaft 27 journaled in a bearing 28 mounted in the casing 10 and having a drive sprocket 29 mounted thereon outside of the shell. The drive sprocket 29 may be driven through a suitable chain and sprocket drive 30 from a variable speed motor 31 of conventional construction suitably mounted on the casing 10 and having a control handle 32 to determine the speed drive transmitted thereby.

In operation, the motor 31 drives the gear 25 in a clockwise direction as viewed in Fig. 2, so that all the agitating shafts 21 will be driven in a counter-clockwise direction as indicated by the arrow. The gear 25 may be driven in the same direction as the reel, but at a differential speed, as shown and described, or it may be driven in the opposite direction if desired. As will be evident from the position of the can 19 shown in Fig. 2, rotation of the associated shaft 21 will effect rotation or agitation of the can 19 and the amount of such agitation will be in proportion to the speed of rotation of the shaft 21 about its axis whereby the contents of the can can be subjected to the desired amount of agitation.

While I have shown and described a preferred embodiment of the invention, it will be apparent that the invention is capable of both variation and modification from the form shown, and its scope therefore should be limited only by the scope of the appended claims.

I claim:

1. In can handling and treating apparatus of the type having a spiral canway and a can pro-

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 5 pelling reel rotatable within said canway, a plurality of can supporting and agitating shafts extending along the periphery of said reel, and means for driving said agitating shafts including gears secured thereon, and a driving gear for said shaft gears mounted coaxially with said reel.

10 2. In can handling and treating apparatus of the type having a spiral canway and a can propelling reel rotatable within said canway, can agitating shafts journaled around the periphery of said reel in parallel relation to the axis thereof, each shaft having a gear to transmit a drive thereto, a common drive gear for said shaft gears mounted co-axially with said reel, and variable speed drive means for said drive gear.

15 3. In can handling and treating apparatus of the type having a spiral canway and a can propelling reel rotatable within said canway, a series of pusher bars on said reel, a can agitating shaft extending along each bar, a gear at an end of each shaft, and a common drive gear for said shaft gears mounted coaxially with said reel.

20 4. In a can handling and treating apparatus of the type having a spiral canway and a can propelling reel rotatable within said canway, a series of pusher bars on said reel, can agitating means extending along each bar, and a common drive means for said agitating means mounted coaxially with said reel.

25 5. In can handling and treating apparatus of the type having a spiral canway and a rotatable reel for propelling cans along said canway, a can propelling bar on said reel having its can engaging surface formed at least in part by can shifting means mounted for rotation on said reel for effecting agitation of cans engaged therewith.

30 6. In can handling and treating apparatus of the type having a spiral canway and a rotatable reel for propelling cans along said canway, a can propelling bar on said reel having its can engaging surface formed at least in part by movable

can agitating means mounted for movement relative to said reel, and means for effecting movement of said can agitating means.

5 7. In a can handling and treating apparatus of the type having a spiral canway and a rotatable reel for propelling cans along said canway, a series of pusher bars on said reel, and can agitating means cooperatively related to said bars and carried by said reel for movement relative thereto.

10 8. In a can handling and treating apparatus of the type having a spiral canway and a rotatable reel for propelling cans along said canway, a support for cans carried by said reel, and means to move said support relative to said reel to agitate the cans.

15 9. Can handling and treating apparatus of the type having a spiral canway and a rotatable reel provided with means for propelling cans along said canway, can agitating means carried by said reel, and means for selectively controlling the operation of said can agitating means.

20 10. In can handling and treating apparatus of the type having a spiral canway and a rotatable reel for propelling cans along said canway, a can propelling bar on said reel having its can engaging surface formed at least in part by can shifting means mounted for rotation on said reel for effecting agitation of cans engaged therewith, and means for controlling the rate of rotation of said can shifting means.

25 11. In can handling and treating apparatus of the type having a spiral canway and a rotatable reel for propelling cans along said canway, a can propelling bar on said reel having its can engaging surface formed at least in part by movable can agitating means mounted for movement relative to said reel, and means for effecting movement of said can agitating means, including means for varying the rate of movement thereof.

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