Nov. 30, 1943. R. D. FOX 2,335,588

FEED VALVE FOR CONTINUOUS COOKERS

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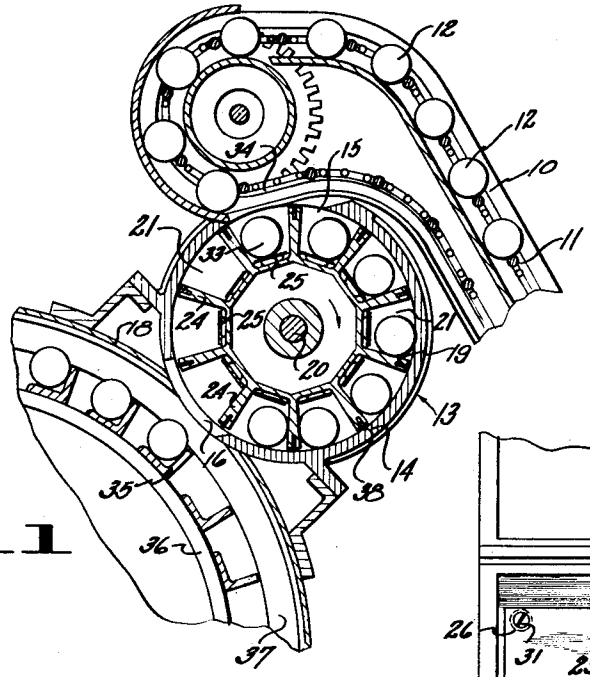


FIG_1

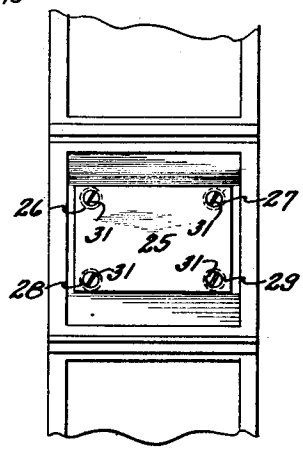


FIG_3

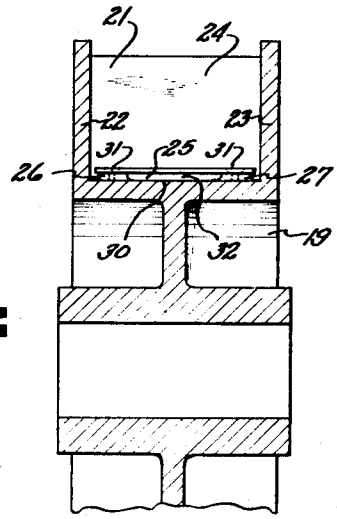


FIG_2

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FEED VALVE FOR CONTINUOUS COOKERS

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4 Claims. (Cl. 198—211)

This invention relates to the art of canning and is particularly concerned with the provision of an improved feed mechanism suitable for use in connection with machines, such as continuous cookers, for processing commodities packed in glass containers.

The principal object of the invention is to provide a feed valve for use in connection with continuous cookers or the like, which is adapted to handle glass containers without danger of breaking the glass when the containers are introduced into the valve.

A more specific object of the invention is to provide a feed valve of the character referred to in which the valve pockets are provided with suitable shock absorbing means which permits glass containers to be dropped into the pockets without danger of breakage.

The invention will be disclosed as applied to a continuous cooker of the general type disclosed in the patent to A. R. Thompson, Reissue No. 15,334, dated April 11, 1922.

In the drawing:

Fig. 1 is a vertical transverse section through the feed valve of the cooker.

Fig. 2 is an enlarged fragmentary section through one pocket of the valve.

Fig. 3 is a detail view in plan of the interior of the pocket.

As shown in Fig. 1, the cooker is provided with an elevator 10 having an endless conveyor 11 which carries the containers 12 up to the feed valve 13. The feed valve comprises a cylindrical casing 14 having an inlet 15 at the top thereof and an outlet 16 disposed in registry with an opening provided in the shell 18 of the cooker. A valve turret 19 mounted on a shaft 20 rotates within the casing 14. The turret has a series of pockets 21 formed in the periphery thereof for receiving the containers. Each pocket 21 has four walls, the outside walls 22, 23 (Fig. 2) being disposed parallel to each other and perpendicular to the axis of the turret. The other two walls are provided by partitions 24 which, as shown in Fig. 1, extend radially from the axis of the turret.

Disposed in the bottom of each of the pockets 21 is a thin flexible brass plate 25 which is supported on four pads 26, 27, 28, 29 (Fig. 3) formed integrally with the turret 19 and projecting above the level of the floor 30 (Fig. 2) of the pocket. The plate is rigidly secured to the pads by means of screws 31. It will be noted by reference to Figs. 2 and 3 that the pads on which the plate is supported are disposed at the four corners thereof, leaving a space (indicated by the numeral 32 in Fig. 2) under the central portion of the plate. This is an important feature of the invention because it is essential that the center of the plate be free and unsupported to permit the plate to flex.

In operation the turret 19 is driven in timed relationship with the elevator conveyor 11 so that one of the pockets 21 is presented to the inlet 15 in time to receive a container dropped from the conveyor. For example, as shown in Fig. 1, the container 33 has just dropped from the space 34 in the conveyor into the pocket. The thin brass plate 25 by yielding slightly serves to cushion the impact of the container when it lands in the bottom of the pocket and thus prevents breakage thereof. The container is then carried around clockwise by rotation of the turret until it arrives at the outlet 16 in the casing through which it gravitates to the pusher rails 35 on the reel 36 which rotates within the shell of the cooker. As is well known in machines of this type, the canway 37 secured to the interior of the shell guides the continers in a helical path through the cooker while the contents of the containers are being subjected to the heat treatment. Cookers of this type are usually operated under pressure, particularly when handling glass containers where the pressure serves to maintain the covers on the containers while the contents are cooking. Accordingly, as is necessary in pressure cookers, the turret 19 is provided with seals 38 which are carried by the partitions 24 and which contact the casing 14 to prevent the escape of steam through the valve.

I prefer to make the plate 25 of thin sheet brass, brass being the preferable material on account of its ability to withstand corrosion. The plate should be relatively thin so that it will have sufficient elasticity to permit it to yield when the glass container strikes it. I prefer also to rigidly mount the plate at its extremities, as shown, so that it will be securely held in place in the pocket of the turret. This construction, which does not involve the use of any moving parts or elements which might be subject to fatigue or fracture, makes for durability and reliability in operation.

In actual operation I have found that the embodiment of my invention in a pressure cooker eliminates the breakage difficulty experienced with glass containers, whereas if the glass containers are introduced into the feed valve 13 and are allowed to fall directly onto the floor 30 of the pocket, they frequently break.

An advantage of the construction herein dis-

closed is that it provides just sufficient cushioning to keep the containers from breaking, without, however, introducing any undesirable complications, such as excessive bouncing and rebounding of the container, which might result in chipping and cracking the containers, upsetting the containers in the pockets, and possibly interfering with the proper operation of the machine.

Having thus described my invention and in what manner the same may be used, what I claim as new and desire to protect by Letters Patent is:

1. A feed valve for a continuous cooker comprising a casing having an inlet in the upper portion thereof, a turret rotatable in said casing having pockets therein adapted to be successively presented to said inlet upon rotation of said turret, each of said pockets having a depressible cushioning means therein, said cushioning means comprising a flexible sheet of material, and means to support said sheet in said pocket so that the central portion thereof which comes in contact with the container is spaced apart from the pocket wall so as to be free to yield when the container falls thereon.

2. A feed valve for a continuous cooker comprising a casing having an inlet in the upper portion thereof, a turret rotatable in said casing having pockets therein adapted to be successively presented to said inlet upon rotation of said turret, each of said pockets having a depressible cushioning means therein, said cushioning means comprising a thin sheet of metal, and means to secure the extremities of said sheet to the pocket with the central portion of said sheet spaced apart from the wall of said pocket.

3. A feed valve for a continuous cooker comprising a casing having an inlet in the upper portion thereof, a turret rotatable in said casing having pockets in the periphery thereof adapted to be successively brought under said inlet, depressible cushioning means in the bottom of each pocket to break the fall of the container into the pocket from said inlet, said cushioning means comprising a thin metal plate, means to support said plate spaced apart from the bottom of said pocket, said supporting means being disposed on either side of a plane containing the axis of the container when the container is in contact with said plate whereby the central portion of said plate is free to yield when the container is dropped thereon.

4. A feed valve for a continuous cooker comprising a casing having an inlet in the upper portion thereof, a turret rotatable in said casing having pockets in the periphery thereof adapted to be successively brought under said inlet, depressible cushioning means in the bottom of each pocket to break the fall of the container into the pocket from said inlet, said cushioning means comprising a thin metal plate, means to support said plate spaced apart from the bottom of said pocket, said supporting means being disposed on either side of a plane containing the axis of the container when the container is in contact with said plate whereby the central portion of said plate is free to yield when the container is dropped thereon, and means to rigidly attach said plate to said supporting means.

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