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DISCHARGE MECHANISM FOR CONTAINER HANDLING VESSELS

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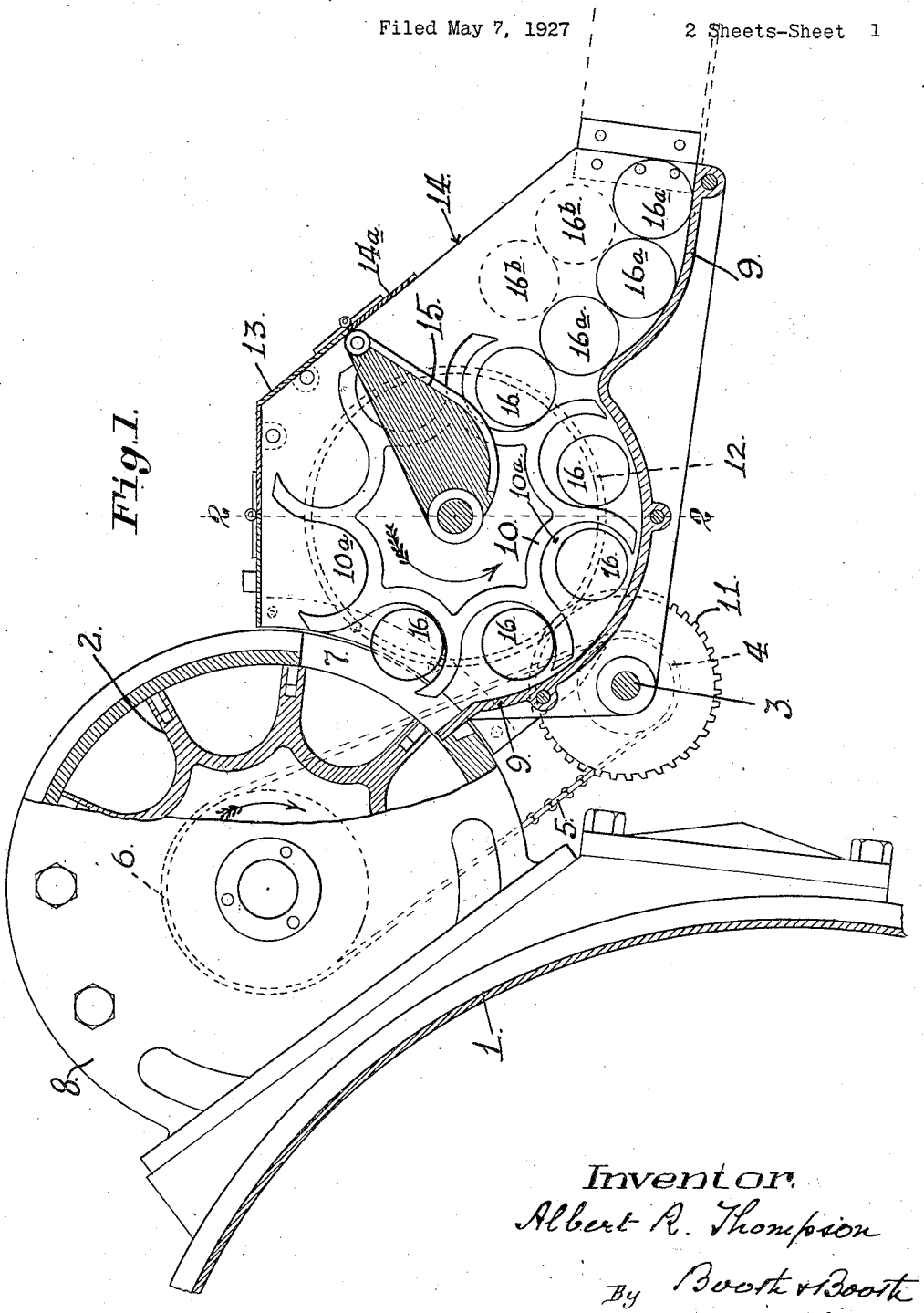


Fig. 1.

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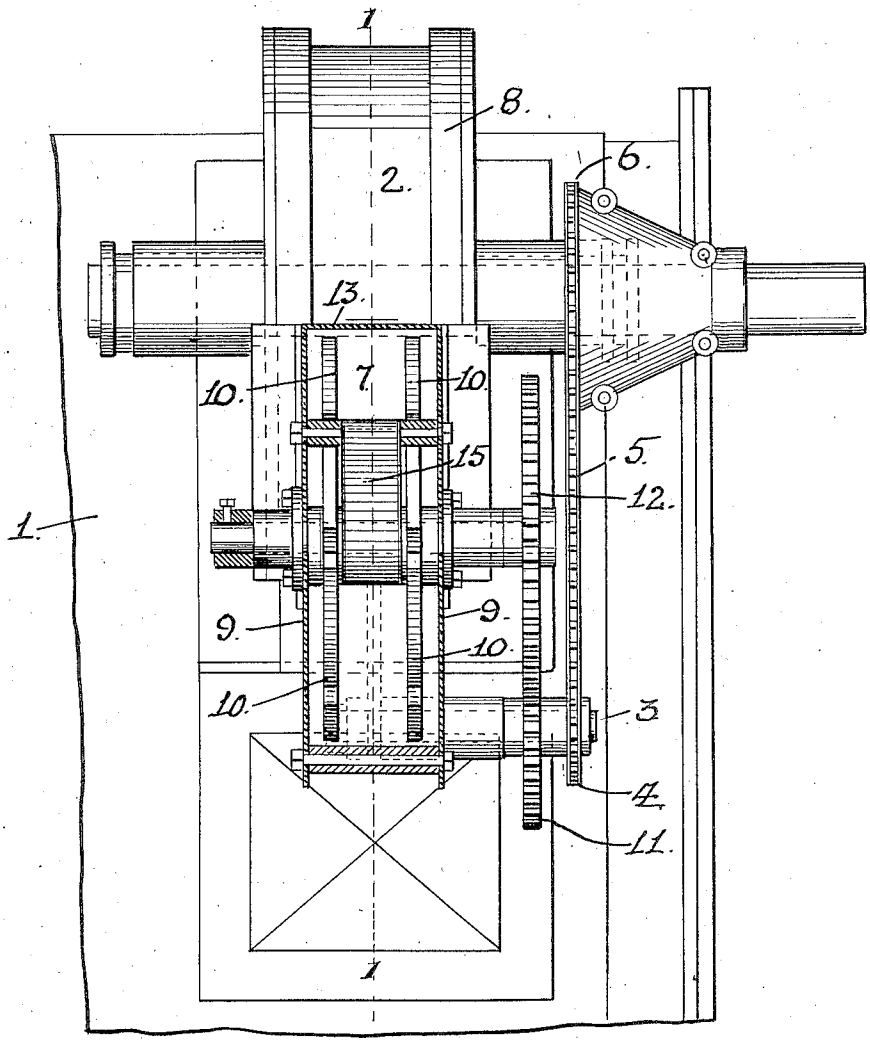
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Fig. 2.



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UNITED STATES PATENT OFFICE.

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DISCHARGE MECHANISM FOR CONTAINER-HANDLING VESSELS.

Application filed May 7, 1927. Serial No. 189,723.

My invention relates, in general, to the canning art, and, in particular, to vessels through which the containers pass for treatment; especially such vessels which, on account of internal conditions, such, for example, as pressure, are provided with valves to maintain such conditions. Such vessels are commonly known as pressure cookers, pressure coolers, and the like.

My invention consists in a novel discharge mechanism in association with such vessels; and its object is to provide for the continuous and safe delivery of the containers, despite the possible contingency of an interruption of the container flow beyond the vessel.

To better understand this object and its necessity, it may be stated that in modern practise the containers pass in continuous procession through the several treating vessels of the line, and their discharge from the pressure valve of say, for example, the pressure cooler, leads the procession to a point where subsequent manipulations may interrupt the flow and thus back the line of containers up and clog the discharge from the pressure valve, thereby throwing the whole line into disastrous confusion.

My invention herein contemplates in particular the provision, in association with the pressure valve and the discharge runway, of a pressure cooler, of a continuously rotating turret, adapted to receive the containers from the valve and deliver them to the runway; and, upon a stoppage of the normal container line in the runway, to continue to receive the containers and by lifting them to a higher plane to establish a fresh layer or line of containers riding upon the lower or normal layer or line, and so on to a possible final delivery of the containers, in case the trouble continues, over the walls of the runway onto the floor. Thus the stoppage of the procession is not communicated to the cooler, the valve of which continues its normal discharge.

In the accompanying drawings, to which reference is made, I have shown my discharge mechanism in connection with the pressure valve of a treating vessel which, for example, may be referred to herein as a pressure cooler, though it is to be understood that said mechanism may be used in association with other handling vessels in the operation of which it is of importance that the discharge of the containers shall not suffer vital interruption. It will also be understood that changes may be made in the device without departing from its spirit, as defined in the claims hereunto appended.

In the drawings, Fig. 1 is a side view partly in section, on the line 1—1 of Fig. 2, of my discharge mechanism.

Fig. 2 is a section on the line 2—2 of Fig. 1.

1 indicates a treating vessel which, for this description, may be a "cooler" in which the temperature of the containers is safely reduced, the interior of the vessel being under pressure, for which reason said vessel is provided with a fluid-tight discharge valve indicated by 2. This valve, as shown in Fig. 1, is of standard pocket-type and is mounted and driven in the usual manner, the driving mechanism being herein indicated by the shaft 3, sprocket 4, chain 5 and sprocket 6.

With the discharge opening 7 in the housing 8 of the valve 2, the upper end of the runway 9 communicates. Within the head of the runway 9 is fitted the turret 10 preferably, as shown in Fig. 2, of the double flange type, having peripheral pockets 10^a, which are in such relation to the discharge opening 7 of the valve as to receive a container from the pockets of said valve. The turret 10 is rotated in timely relation to the valve rotation, suitable driving mechanism being here indicated by the gears 11 and 12. Over the head of the runway and the turret is a hood 13, the foot of which is open at 14, the opening being partially controlled by a gate 14^a. 15 is a stripper arm mounted in association with the turret to push the containers from the turret pockets 10^a into the runway 9.

In order to fully show the operation of the device, I have indicated containers 16, in Fig. 1, passing from the valve to the turret and being carried by the latter to pass in procession down the runway. Normally this procession will be a continuous one due to the delivery and rolling of successive containers. But, now, let it be assumed that some untoward accident has occurred at the foot of the runway, by which the orderly container flow is arrested. In such case the line of containers will back up in close array in the runway, as indicated by 16^a, all the way to the turret. But this line will not stop the rotation of the turret which continues to receive containers from the valve, and these containers will be lifted by the turret to build up a second line 16^b, lying

on top of the first line 16ª; and still another line, if the trouble is not remedied; but in any case, if the trouble continues, the curret, after the height capacity of the runway is exhausted, will deliver the containers through the open foot 14 of the hood 13 and throw them on to the floor.

Thus there will be no stoppage in the delivery of the containers from the cooler, which is the object sought.

It may also be pointed out that as the stripper 15 serves to positively eject the container from the pocket of the turret, it will insure the normal flow of the containers whether there is no stoppage or only a slight or temporary one which a vigorous push will remedy, or in case a container, due to some distortion, tend to stick in the pocket.

I claim:—

1. In combination with a discharge means of a container-handling vessel, and a delivery runway in communication therewith, a member adapted to receive the containers from said discharge means and deliver them to the runway in orderly succession during normal continuance therein of the container flow, and means for continuously removing said containers from said member in case said flow is arrested.

2. In combination with a discharge means of a container-handling vessel, and a delivery runway in communication therewith, a member adapted to receive the containers from said discharge means and deliver them to the runway in orderly succession during normal continuance therein of the container flow, said member having means for lifting said containers to and delivering them at a higher level to continue their discharge in case said flow is arrested.

3. In combination with a rotatable discharge valve of a container-handling vessel and a delivery runway in communication with said valve, a rotatable member mounted in the head of said runway adapted to receive the containers from the valve and to pass them in normal flow to the runway, said member having means for lifting said containers to and discharging them at a higher level in case the normal flow is arrested.

4. In combination with a rotatable discharge valve of a container-handling vessel and a delivery runway in communication therewith, a rotatable turret mounted in the head of the runway adapted to receive the containers from the valve and pass them in normal flow to the runway, said turret having pockets for lifting said containers to and discharging them at a higher level in case the normal flow is arrested.

5. In combination with a rotatable discharge valve of a container-handling vessel and a delivery runway in communication therewith, a rotatable turret mounted in the head of the runway adapted to receive the containers from the valve and pass them in normal flow to the runway, said turret having pockets for lifting said containers to and discharging them at a higher level in case the normal flow is arrested, and a stripper member associated with said turret for forcing the containers from said pockets.

6. In combination with a pocket discharge valve of a container-handling vessel, and a delivery runway in communication therewith, a rotatable turret in said runway, having pockets adapted to timely register with the pockets of the discharge valve to receive the containers therefrom and deliver them to the runway, and a stripper member associated with said turret for positively ejecting the containers from the turret pockets.

7. The combination with a discharge means of a container-handling vessel, and a delivery runway in communication therewith, of means adapted to remove the containers positively and continuously from said discharge means under all conditions of container flow in said runway and to deliver them to said runway under normal conditions of container flow therein.

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

ALBERT R. THOMPSON.