Oct. 18, 1932. J. R. SKOVERSKI 1,883,829

DISPENSING DEVICE

Filed Aug. 2, 1930 2 Sheets-Sheet 1

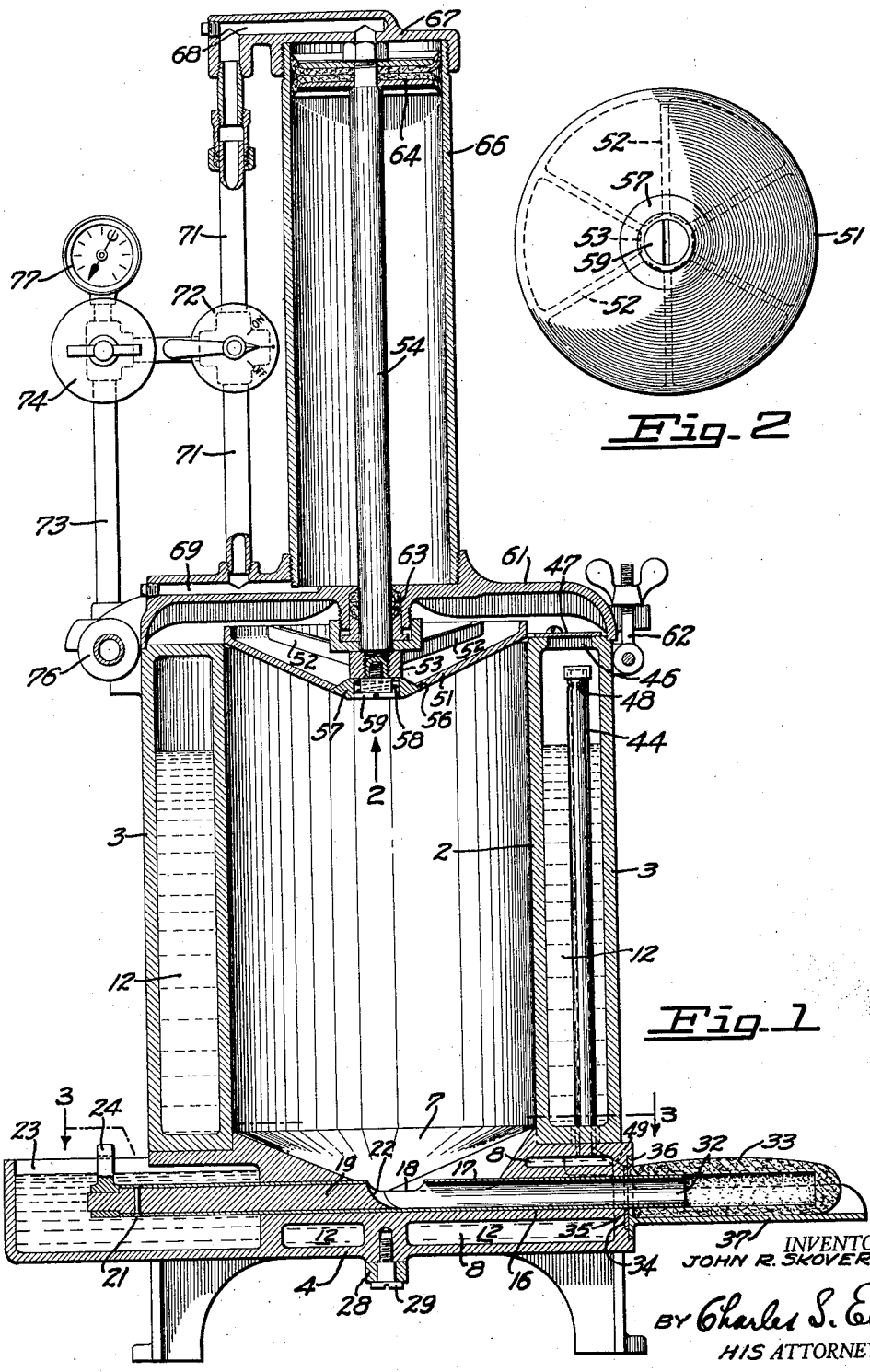


Fig. 2

Fig. 1

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Fig. 3

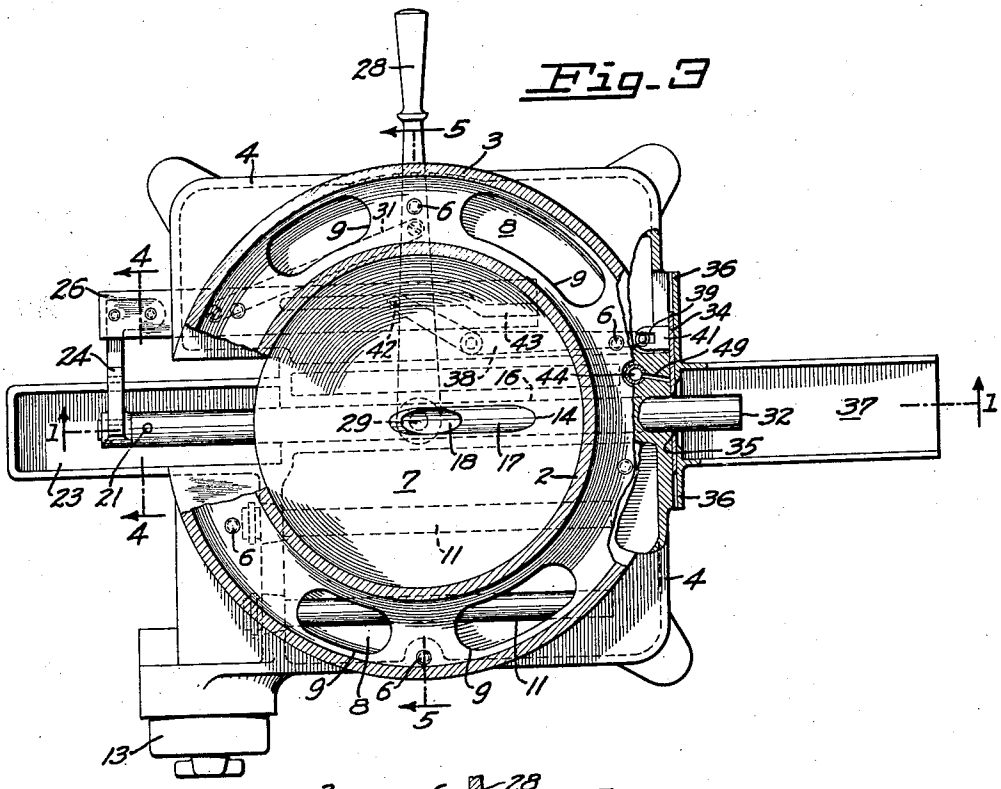


Fig. 4

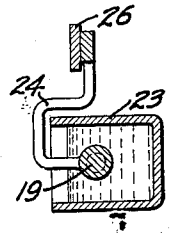
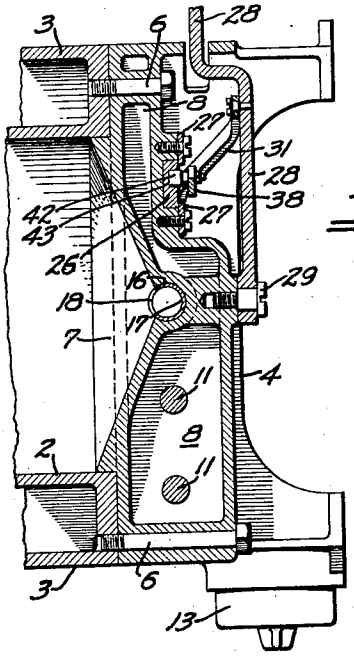


Fig. 5



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UNITED STATES PATENT OFFICE

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DISPENSING DEVICE

Application filed August 2, 1930. Serial No. 472,525.

My invention relates to a dispensing device, and particularly to such a device for dispensing an individual portion of sandwich food into a recessed bun.

It is among the objects of my invention to provide a dispensing device in which the movable parts are prevented from becoming clogged by hardened fatty matter reduced from the food materials being dispensed.

Further objects of my invention include the provision of a dispensing device which is easily kept clean and sanitary, and which protects the contained food product from contamination.

The invention possesses numerous other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of my invention. It is to be understood that I do not limit myself to this disclosure of species of my invention, as I may adopt variant embodiments thereof within the scope of the claims.

Referring to the drawings:

Figure 1 is a vertical sectional view of the dispensing device embodying my invention; the plane of section being indicated by the line 1—1 of Figure 3.

Figure 2 is a bottom view of the plunger, taken in a direction indicated by the arrow 2 of Figure 1.

Figure 3 is a horizontal sectional view of the dispensing device, taken in a plane indicated by the line 3—3 of Figure 1; portions of the view are broken away to disclose the construction.

Figure 4 is a detail vertical sectional view showing the water bath for the slidable tube, taken in a plane indicated by the line 4—4 of Figure 3.

Figure 5 is a vertical sectional view across the lower portions of the device; the plane of section being indicated by the line 5—5 of Figure 3.

In terms of broad inclusion, the dispensing device embodying my invention comprises a ported container for the material being dispensed. A ported tube, providing a discharge nozzle for the container, is slidably arranged adjacent the container port, and means are provided for extending and retracting the nozzle. Means, operable in time with the nozzle, are provided for closing the discharge orifice of the nozzle when it is retracted; and means are provided for cleaning the closing means to prevent its becoming clogged with fatty matter from the dispensed material.

Means are provided for protecting the normally exposed portions of the slidable tube from the air, so that fatty matter from the dispensed material will not become hardened on the tube to interfere with its operation. Means are also provided for applying a pressure to the material in the container; and means are provided for draining the pressure applying means when the pressure is released.

In its preferred form, the device is used for dispensing such materials as minced meats, hashes, or other flowable sandwich foods. A bun, previously recessed or hollowed out, is placed in front of the discharge nozzle, and the nozzle is then extended to enter the bun recess for injecting a portion of the food product therein. When the nozzle is retracted the operation is complete; the closing gate preventing further discharge of the material from the nozzle.

In greater detail, the dispensing device embodying my invention comprises a cylindrical container 2 surrounded with a water jacket 3. The container is seated on a base 4 and is secured by suitable bolts 6; a dished recess 7 being formed in the top of the base to provide a bottom wall for the container. Portions of the base 4 are hollowed out to provide a reservoir 8 communicating with water jacket 3 through suitable apertures 9; and a pair of electric heating elements 11 are mounted to project into the reservoir. By this arrangement, the heated water 12 is allowed to circulate completely about the bottom and sides of the container to keep a supply of the food material in a palatable heated condition. A snap switch 13 serves as a control for operating the heating elements 11.

Provided in the base 4, and opening into the interior of the container through a port 14, is a passage 16 in which a tube 17 is slidably mounted to provide a discharge nozzle

for the container. A port 18, in the tube 17, is adapted to register with the container port 14 when the tube is moved toward the extended position; thereby opening communication between the container and tube, as shown in Figures 1 and 3. When the tube is retracted, however, communication is cut off, due to the non-registration of the ports. A plug 19 closes the posterior end of the tube 17 and is secured by a suitable pin 21; the inner end 22 of the plug being shaped to form a smooth curved passageway into the discharge nozzle provided by the forward portions of the tube.

Since small amounts of fatty matter, reduced from the food material being dispensed, are bound to adhere to the tube 17, means are provided whereby this will not operate to clog or otherwise interfere with the operation of the tube. The plugged end of the tube projects rearwardly from the bottom wall of the container, and extends into a trough 23 providing a water bath for the projected end of the tube. This bath protects the normally exposed rear portions of the tube from the air, and prevents the fatty matter from hardening on the tube and interfering with its movement.

Hand operated means are preferably provided for moving the slidable tube 17. A rod 24 is bent to clear the side of the trough 23, and is secured to the rear end of tube plug 19. The other end of the rod is fixed to the end of a bar 26 slidably mounted on the under side of the base 4 in the guideways 27. A hand lever 28 is pivoted on the bottom of the base 4 by a suitable screw 29, and is operably connected to the slide bar 26 by a pivoted connecting link 31. By this arrangement, an axial movement, in either direction, may be imparted to the tube 17 by operation of the hand lever 28.

When the tube is in the retracted position, at which time its nozzle portion is wholly within the passage 16, the tube port 18 is not in registration with the container port 14, and communication between the container and its discharge nozzle is cut off. However, when the tube 17 is slid toward the extended position the ports come into registration and permit material to flow from the container and pass out through the discharge orifice 32 of the nozzle. If a previously hollowed out bun 33 be placed in front of the discharge nozzle, and the nozzle extended into the bun recess and then retracted, a portion of the food material will be transferred from the container and deposited to fill the bun.

Means are provided, operable in time with the slidable tube 17, for closing the nozzle discharge orifice 32 when the tube is in the retracted position; and for the sake of convenience, means are provided whereby the closing means is operated by the tube moving means. A slidable gate 34, having a circular aperture 35 for receiving the tube 17, is mounted on the base 4 to slide over the outer opening of the tube passage 16. The gate 34 is held slidable behind a cover-plate 36, on the forward side of which is mounted a trough 37 for holding a bun to be filled.

Movement is imparted to the gate 34 by a bell crank 38 pivoted on the bottom of the base 4. One arm of the bell crank carries a pin 39 engaged with a recessed tab 41 fixed on the inner face of the gate 34; and the other arm carries a pin 42 engaged with a camway 43 formed in the slide bar 26. The camway is in the form of a groove having two parallel portions connected by a short diagonal portion. This arrangement permits the gate 34 to be operated simultaneously and in time with the tube 17.

The disposition of the parts is such that, as the hand lever 28 is pulled forward, the camway engaging pin 42 passes through the diagonal portion of the camway to throw over the bell crank and slide the gate 34 until the gate aperture 35 is in line with the tube passage 16. At the same time, the tube 17 is slid forward, through the gate aperture 35, and into the bun 33. As the tube moves forward, the tube port 18 registers with the container port 14 and material flows out through the discharge nozzle and is injected into the bun.

When this operation is complete, a reverse movement of the hand lever 28 retracts the nozzle, and the pin 42 and camway 43 cooperate to slide the gate 34 over the end of the nozzle to close its discharge orifice 32; thus preventing leakage or contamination of the food material remaining in the nozzle.

The gate 34, sliding in front of the discharge nozzle, is prone to pick up fatty matter from the food material being dispensed. Since the gate is open to the air, the fats will dry or harden to gum up the slideway. To preclude this, heated means are provided for cleaning the gate; the steam liberated by the heated water within the water jacket being preferably utilized for this purpose.

Secured in the base 4, and extending upwardly through the heated water 12 contained by the water jacket 3, is a capped pipe 44. An aperture 46, covered by a removable plate 47, is provided in the water jacket above the pipe 44, so that the interior of the jacket will be accessible for assembly. The upper portions of the pipe project above the normal water level in the jacket; and a series of inlet holes 48 are provided in the pipe for permitting the entrance of steam, liberated by the heated water 12. A passage 49 connects with the lower end of the pipe 44 and opens on the side of the base 4 adjacent the inner face of the gate 34. It is thus seen that a duct is provided for conveying the steam to the gate. As will be readily understood, the steam will operate to clean the gate, and

render to liquid state any fatty matter that might adhere thereto.

On occasions, the materials being dispensed may be of such character as not to flow readily through the nozzle, and means are therefore provided for applying a pressure to assist in ejecting them. A cup-shaped plunger 51 is arranged to slidably fit in the container 2 for pressing upon the material. A series of radially extending webs 52 are formed in the cup of the plunger, and carry on their inner ends a centrally disposed hub 53. The hub in turn is threaded on the end of a plunger rod 54 adapted to move the plunger 51 up and down in the container 2.

Since the plunger must be removed when a new supply of food material is placed in the container, an exceedingly tight fit cannot be made between the plunger and container wall and still permit ready insertion of the plunger. As a result, a certain amount of juices and fats are permitted to pass by the plunger, via the sides of the container, and collect on the top of the plunger. If the plunger is removed under these conditions the collected liquids will spill out and mess up the device. To prevent this from happening, a drain is provided for the plunger.

An aperture 56 is cut in the center of the plunger 51, and is covered by a disk 57 adapted to seat along the sides of the aperture as shown in Figure 1. The disk is held to normally close the plunger aperture by the action of a spring 58, compressed between the disk and a plunger rod engaging screw 59. By this arrangement, a spring pressed valve is provided which is closed when a pressure is being applied to the material in the container, but which will open when the plunger is moved upward against the partial vacuum created thereby. Any liquids carried in the cup of the plunger will thus be permitted to run back into the container.

Means are provided for actuating the plunger 51. A demountable closure 61 is hinged on the container, and is held in closed position by a wingnut shackle bolt 62. A gland 63 permits the passage of the plunger rod 54 through the closure; and a piston head 64, mounted on the upper end of the plunger rod, is adapted to slide in a cylinder 66 secured on top of the container closure 61. The cylinder is closed by a cylinder head 67 provided with a duct 68 ported into the upper end of the cylinder.

A similar duct 69 is provided in the closure 61, and is ported in the lower end of the cylinder. These cylinder ducts are connected, by the pipes 71, with a three-way cock 72; the cock being arranged so that a pressure fluid, conducted thereto by a pipe 73 through a reducing valve 74, may be directed into either end of the cylinder at will; the duct at the other end being opened at the same time for exhaust. Any ordinary three-way cock may be used for this purpose; and any suitable fluid, such as air, water, or carbon dioxide may be used for the pressure fluid.

When the device is being operated, the cock 72 is adjusted to direct the pressure fluid continuously into the top of the cylinder to press the plunger 51 on the material in the container. After all the material in the container has been dispensed, a reversal of the cock 72 raises the plunger 51 so that the closure 61 may be demounted. The pressure fluid is fed to the pipe 73 through the closure hinge 76. A detailed showing of this hinge construction is not made, because it is shown and described in detail in applicant's copending application Serial No. 276,332, filed May 9, 1928. A pressure gauge 77 is mounted between the reducing valve 74 and the cock 72 for conveniently gauging the pressure.

I claim:

1. A dispensing device comprising a container, a water jacket for the container, means for heating the water in said jacket, a discharge means for the container, means for closing the orifice of the discharge means, and means for utilizing the steam liberated within the water jacket to clean the closing means.

2. A dispensing device comprising a container, a water jacket for the container, means for heating the water in said jacket, a discharge means for the container, a slidable gate for closing the orifice of the discharge means, and means for conveying steam liberated within the water jacket to the slidable gate for cleaning the same.

3. A dispensing device comprising a container, a water jacket for the container, means for heating the water in said jacket, a discharge means for the container, a slidable gate for closing the orifice of the discharge means, and a steam duct opening above the water level in the jacket and communicating with the slidable gate for cleaning the same.

4. A dispensing device comprising a container having a port, a ported tube providing a discharge nozzle slidably arranged adjacent the container port, means for moving said tube to open and close communication between the container and tube, and a liquid seal for protecting the normally exposed portions of the tube from the air.

5. A dispensing device comprising a container having a port, a ported tube providing a discharge nozzle slidably arranged adjacent the container port, means for moving said tube to open and close communication between the container and tube, and a water bath for the normally exposed portions of the tube.

In testimony whereof, I have hereunto set my hand.

JOHN R. SKOVERSKI.