

No. 676,130.

Patented June 11, 1901.

C. S. GOODFELLOW.  
DISPENSING APPARATUS.

(Application filed Aug. 16, 1900.)

(No Model.)

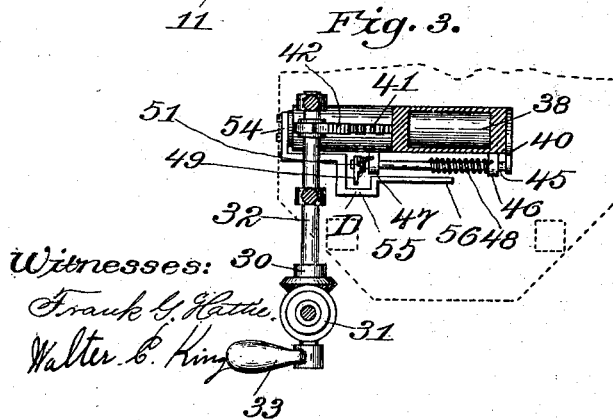
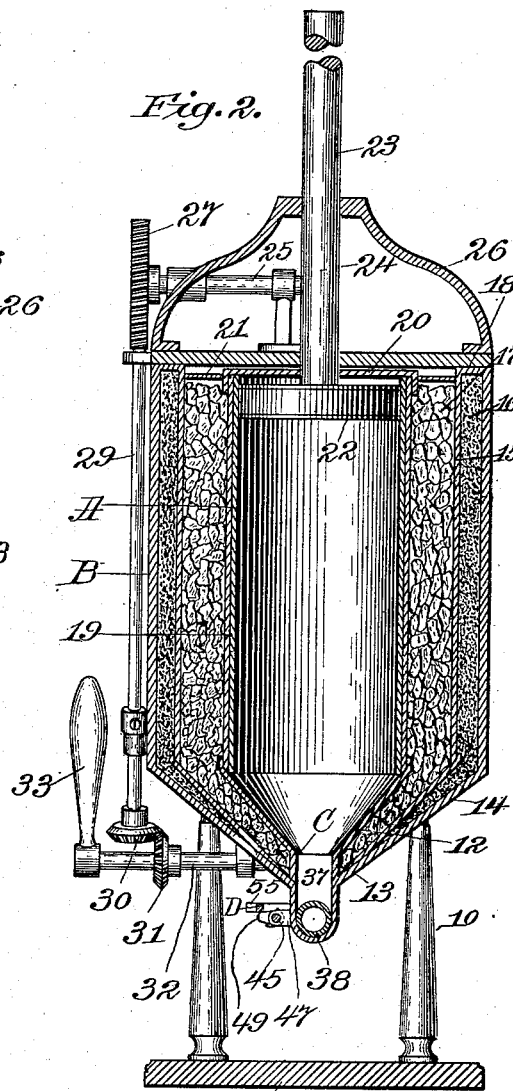
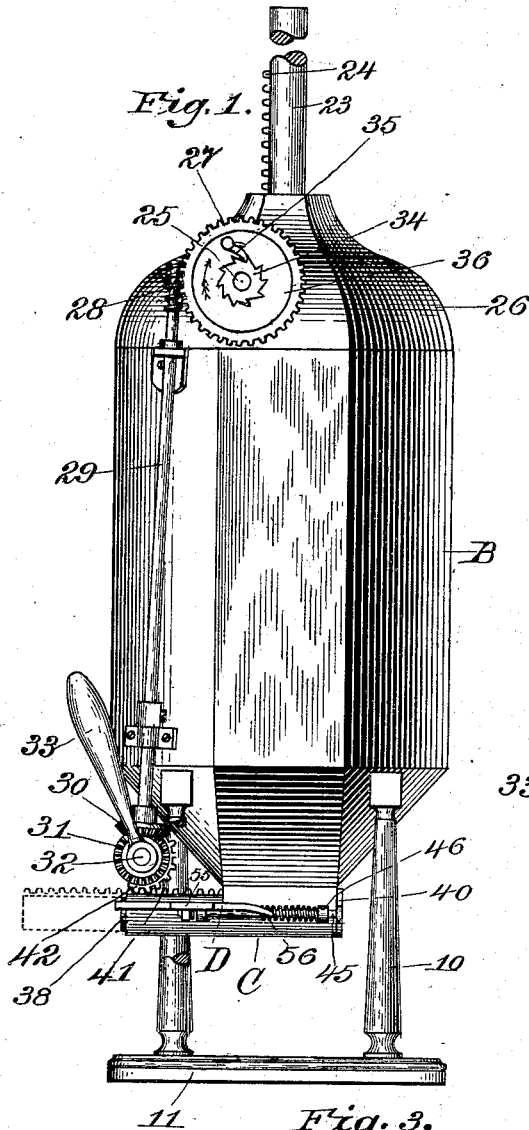
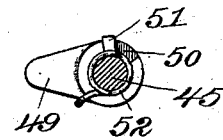


Fig. 4.



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# UNITED STATES PATENT OFFICE.

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## DISPENSING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 676,130, dated June 11, 1901.

Application filed August 16, 1900. Serial No. 27,010. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES S. GOODFELLOW, a citizen of the United States, residing at Lowell, county of Middlesex, State of Massachusetts, have invented an Improvement in Dispensing Apparatus, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to a dispensing apparatus, and though capable of containing and delivering many different substances it is of peculiar importance as a receptacle for ice-cream and material of a similar nature which is affected by warmth.

The apparatus represented in one convenient embodiment thereof is simple in construction and serves to maintain ice-cream, butter, or the like in a solid condition and to regulate with exactness the quantity to be supplied to a purchaser.

Figure 1 is a side elevation of a dispensing apparatus constructed in accordance with my invention in a simple form. Fig. 2 is a vertical central sectional view of the same. Fig. 3 is a sectional plan view of the discharge or delivery end of the appliance, showing part of the feeding mechanism and the actuating mechanism therefor and a receptacle in dotted lines; and Fig. 4 is a sectional detail of a projection adapted to be operated by an actuator.

The apparatus in the embodiment thereof illustrated includes in its construction two containers, a main one and an auxiliary one, in communication with each other, and these may be of any suitable character.

The main container is denoted by A, and it may consist of a cylindrical metal can inwardly tapered at its lower end, as at 12, the tapered portion merging into the reduced neck 13, adapted to rest upon the bottom of the tapered portion 14 of the receptacle B. The receptacle B is shown as polygonal in cross-section, and it may be made from sheet metal or any other suitable or desired material. The receptacle B is shown having a series of legs, as 10, secured to the base or platform 11, adapted to rest upon a counter or other support.

The main container A is supported centrally, or substantially so, within the receptacle B and is separated therefrom by the metallic jacketing 15. In the space between the jacket 15 and the receptacle B is a filling of heat-insulating material, as 16, and this ordinarily consists of ground cork, cork being well adapted for the purpose, and I prefer to pack around the main container A crushed or broken ice, as 17, or any other refrigerant. The jacket 15 is shown united with the receptacle B by the flange or web 18.

The main container receives the removable casing or cylinder 19, which can be taken therefrom and supplied with cream, butter, or the like, and it is covered with the flanged cap 20. The case or cylinder 19 is open at both ends, and after being supplied with cream from a freezer said ends are covered to retain the cream therein; but just before the case is inserted in the container both covers are taken off, so that the cream can be forced from the case into an auxiliary container, as will hereinafter appear. Access of air to the cracked ice 17 is prevented by the ring 21, fitted between the cap 20 and the jacket 15 at the upper side of the apparatus. The cream from the case 19 is forced therefrom by a suitable feed device, shown as a plunger 22 fitted snugly therein, the stem 23 of which extends through a central aperture or opening in the cap or cover 20. This feed device or plunger is advanced step by step by suitable mechanism, and as it is lowered it expels a quantity of the contents of the container A therefrom. Any suitable mechanism may be employed for actuating the feed device. The stem 23 is shown as having a rack 24 upon one side thereof, adapted to be engaged by the pinion 24' at the inner end of the shaft 25, supported by suitable bearings upon the detachable top 26. The shaft 25 carries loosely at its outer end the worm-gear 27, meshing with the worm or screw 28 upon the upright shaft 29, supported upon the outside of the receptacle B. The upright shaft 29 carries a beveled gear 30 at its lower end, meshing with a similar gear 31 on the horizontal shaft 32, carrying a handle, shown as a crank 33. The normal and shifted positions of the handle 33 are shown by full

and dotted lines in Fig. 1, and when it is swung down the worm-gear 27, through the intermediate connections, will be moved in the direction indicated by the arrow by said figure. The hand-lever 33 in the present case controls two feed devices, it being adapted through intermediate mechanism to simultaneously advance one and to retract the other. The first one always moves in the same direction, but the other one is reciprocatory, and hence to prevent the first one from being operated upon the return stroke of the second one I provide mechanism of a peculiar nature which will maintain the primary or main feed device in its advanced position during the return of the auxiliary feed device. This mechanism may be of any suitable character. That shown I will now describe. The shaft 25 carries at its extreme outer end the ratchet 34, fixed thereto, and the spring-actuated pawl 35 coöperates therewith, the latter being pivoted to the outer face of the worm-gear 27 and both of them being located in the recess or concavity 36 in said outer face. The substance is forced from the main container A into an auxiliary container, as C, shown as forming a rigid prolongation of the receptacle B and as being substantially in the form of a cylindrical trough open at its upper side and communicating with the main container through the throat or discharge-orifice 37 and extending rearward from said receptacle.

The auxiliary container C incloses an auxiliary feed device, shown as a cylindrical plunger 38. The action is such that this plunger 38 is retracted or drawn back when the main plunger 22 is moved down, so that a supply of cream can be delivered to the empty auxiliary container. Upon the forward movement of the auxiliary plunger 38 it serves to force the substance within the auxiliary container therefrom into a suitable vessel, the discharge-outlet of the auxiliary container being controlled by a suitable valve or gate, as 40. The auxiliary plunger 38 is retracted or drawn back by gearing, and it is illustrated as having upon its upper side a rack 41, meshing with the pinion 42 upon the rock-shaft 32. When the lever 33 is swung down in the manner previously specified, the plunger 22 will be forced down and the plunger 38 will be drawn back in unison therewith, which permits the first-mentioned plunger to eject a charge of cream from the container A into the communicating container C. When the lever is drawn back, the plunger 38 will be moved forward, whereby the cream in the container C is forced therefrom. During the forward movement, however, of the plunger 38 the plunger 22 does not operate, it being retained in its advanced position.

The valve 40, controlling the delivery-outlet of the auxiliary container, is fixed to the rock-shaft 45, supported by brackets, as 46 and 47, upon the apparatus, and is held normally closed by suitable means, as the coiled torsional spring 48, embracing said shaft and

connected, respectively, thereto and to the bracket 46. The valve is opened by means controlled by the hand-lever 33. The rock-shaft carries at the end opposite to that equipped with the valve 40 the by-pass projection 49, loose thereon and having a recess 50 in its hub, the upper wall of which is normally engaged by the stud 51 on said shaft, being held in such position by the torsional spring 52, bearing against the by-pass projection 49 and connected with the bracket 47. This projection 49 coöperates with the actuator D, shown as a longitudinal bar having a right-angular head 54, secured to the extreme outer end of the auxiliary plunger 38. Said actuator or bar also has an offset 55 intermediate its ends in which the projection 49 is normally disposed, as shown in Fig. 3, whereby the valve is held closed. The free end of the actuator or bar has a downwardly-deflected portion, as 56, adapted to coact with the projection 49. As the plunger 38 is drawn back the actuator D of course moves therewith, and just after the commencement of the stroke the upper end of the projection 49 will be engaged by the forward end of the actuator, the said projection being moved down for a slight distance and being still farther moved when it is encountered by the downward deflection 56. Upon the return movement of the plunger, however, the actuator operative therewith will be guided under the projection 49 by the deflected portion 56 and will raise the said projection, and the stud 51 being in contact with the upper wall of the recess 50 the shaft 45 can be rocked to open the valve 40, thereby to permit the discharge of the cream contained within the auxiliary container. When the offset 55 is reached, the projection 49 will be released and will pass out of contact with the actuator, whereby the valve 40 will be freed and instantly closed by the coiled spring 48.

Not only the valve 40 but the feed device or plunger 38 serves to exclude warm air from the interior of the apparatus, and the contents of the latter are thereby kept in a desirable and solid condition.

The apparatus previously described is simple in construction, and by regulating the stroke of the hand-lever 33 the quantity of substance to be supplied from the apparatus can be governed.

The invention is not limited to the exact construction previously specified, for this may be varied within the scope of the accompanying claims.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a dispensing apparatus, a main container, an auxiliary container communicating therewith, a feed device in each container, and operating mechanism for said feed devices arranged to give the feed device in the main container a forward movement and the

feed device in the auxiliary container a positive reciprocating movement.

2. In a dispensing apparatus, a main container, an auxiliary container communicating therewith, a feed device in each container, and means to give the feed device in the main container an intermittent, forward movement and the feed device in the auxiliary container a positive reciprocating movement.

3. In a dispensing apparatus, a receptacle having an ice-chamber, a layer of heat-resisting material surrounding said ice-chamber, a main container in said receptacle and surrounded by said ice-chamber, an auxiliary container communicating with the main container, a feed device in each container, and means to give the feed device in the main container a forward movement and the feed device in the auxiliary container a positive reciprocating movement.

4. In a dispensing apparatus, a receptacle having an ice-chamber, a layer of heat-resisting material surrounding said ice-chamber, a main container in said receptacle and surrounded by said ice-chamber, an auxiliary container communicating with the main container, a feed device in each container, and means to give the feed device in the main container an intermittent forward movement, and the feed device in the auxiliary container a positive reciprocating movement.

5. In a dispensing apparatus, a main container, an auxiliary container in communication therewith, feed devices in said containers, mechanism for operating said feed devices, a valve controlling the discharge of material from the auxiliary container, and means controlled by the mechanism which operates the feed devices, to effect the action of said valve.

6. In a dispensing apparatus, a main container, an auxiliary container, feed devices in each of said containers, means for advancing one and retracting the other feed device in unison, means for holding the first-named feed device in its advanced position while the other one is being positively retracted by said means.

7. In a dispensing apparatus, a main container, an auxiliary container, feed devices in each of them, a shaft having a driving member loose thereon, connections between the shaft and the main feed device, pawl-and-ratchet mechanism connected with said shaft, and mechanism for reciprocating the auxil-

iary feed device, operatively connected with said driving member.

8. In a dispensing apparatus, a main container, an auxiliary container, feed devices in each of them, means for advancing one and retracting the other feed device in unison, a valve controlling the discharge of material from the auxiliary container, mechanism actuated by the means which operate the feed devices for opening said valve, and means independent thereof to close said valve.

9. In a dispensing apparatus, a main container, an auxiliary container, feed devices in each of them, means for advancing one feed device and retracting the other one in unison, a valve controlling the discharge of material from the auxiliary container, means to hold said valve normally closed, a by-pass projection connected with the valve, and means operative with a feed device for engaging said projection to open the valve.

10. In a dispensing apparatus, a main container, a plunger therein, the stem of which has a rack, a pinion meshing with said rack, a shaft carrying the pinion, a gear loose on the shaft, a ratchet fixed to said shaft, a pawl on the gear to engage the ratchet, a shaft having means to operate the said gear, an auxiliary container in communication with the first-mentioned container, an auxiliary plunger in said auxiliary container, and means connected with the second shaft for reciprocating said auxiliary feed device.

11. In a dispensing apparatus, a main container, a plunger therein, the stem of which has a rack, a pinion meshing with said rack, a shaft carrying the pinion, a gear loose on the shaft, a ratchet fixed to said shaft, a pawl on the gear to engage the ratchet, a shaft having means to operate the said gear, an auxiliary container in communication with the first-mentioned container, an auxiliary plunger in said auxiliary container, a valve controlling the discharge from the auxiliary container, means to hold the valve normally closed, and means operative with the auxiliary feed device to open said valve.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES S. GOODFELLOW.

Witnesses:

GILBERT N. HARRIS,  
ALBERT D. McLEAN.