Aug. 6, 1929. M. ZUCCHELLI 1,723,497

DISPENSING APPARATUS

Filed Sept. 4, 1928

Fig. 1

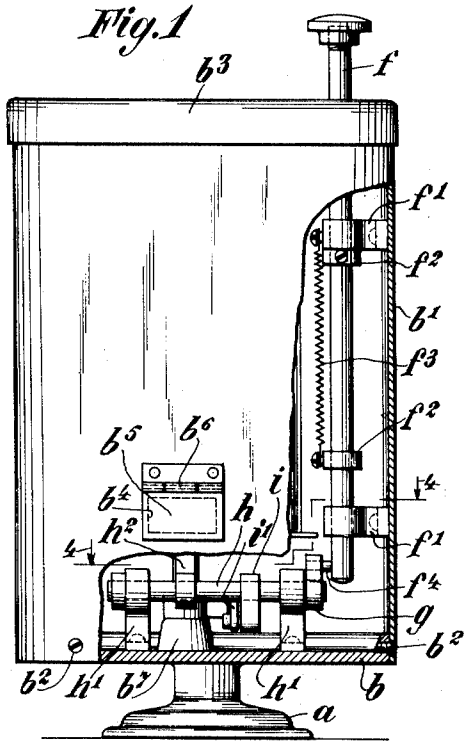


Fig. 3

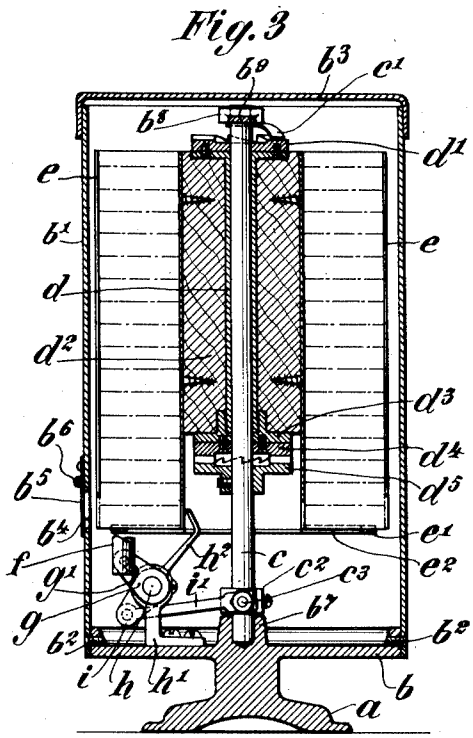


Fig. 2

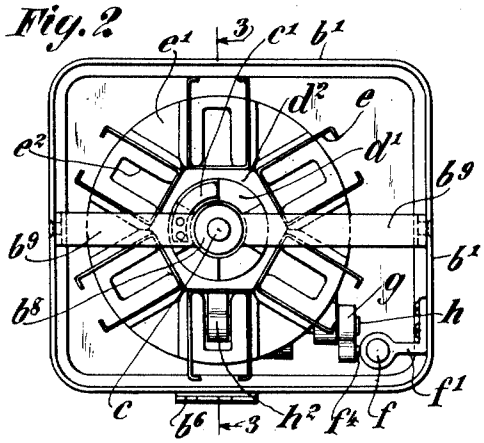


Fig. 5

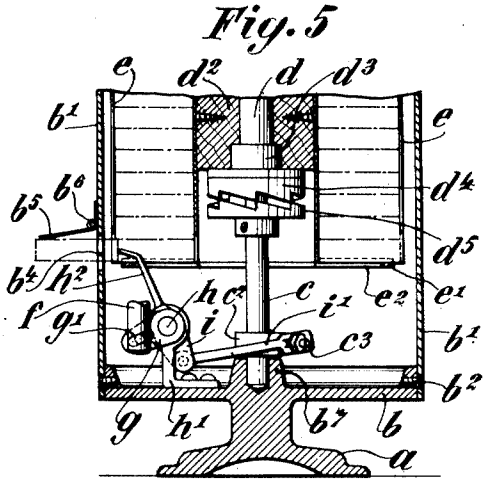
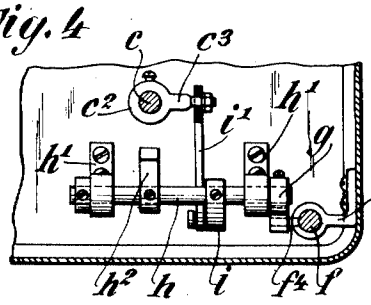


Fig. 4



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UNITED STATES PATENT OFFICE.

MARIO ZUCCHELLI, OF HILLSDALE, NEW JERSEY.

DISPENSING APPARATUS.

Application filed September 4, 1928. Serial No. 303,627.

The present invention relates to dispensing apparatus which is designed to dispense a substance which may be stacked in magazines and is to be used element by element. More specifically, the substance for which the machine has been designed is lump sugar which is available in cubes of uniform dimension.

As is well understood, it is highly desirable that the lumps of sugar be maintained in a sanitary and protected condition, particularly in public eating houses. Not only is the present device designed to protect the substance from dust and casual dirt, but it is also maintained in magazines which are inaccessible to the fingers of those desiring to use the sugar. At a single operation of the mechanism described hereinafter it expels only one lump of sugar from a magazine at a time. A further advantage lies in the conservation of the supply of sugar, since added effort is required to secure additional lumps.

In accordance with the above, an object of this invention is to provide a machine which, responsive to a manual operation, automatically dispenses a cube of lump sugar. A further object lies in the provision of a cabinet for maintaining the sugar in a sanitary condition and entirely inaccessible to the fingers of the user.

A further object of the invention is to provide a device of the above character which has great capacity, a plurality of magazines being provided capable of successive movement into a discharging position, thus multiplying the available supply by the number of magazines used.

Further objects and advantages will appear as the description of the invention proceeds and reference will now be had to the accompanying drawings, wherein:

Figure 1 is a view in elevation, partly in section, showing a prefererd form of the invention.

Figure 2 is a plan view of the device shown in Figure 1 with the top removed.

Figure 3 is a view in section, taken on line 3—3 of Figure 2, and looking in the direction of the arrows.

Figure 4 is a view in section, taken on line 4—4 of Figure 1, and looking in the direction of the arrows.

Figure 5 is a view similar to Figure 3, showing the dispensing mechanism in operating position.

Referring to the above drawings, a indicates a suitable base provided with a pedestal which is formed integral with the bottom b of the cabinet. In the form shown, the cabinet is generally recetangular in cross section and includes side walls b' which may be secured to the bottom by screws shown at b^2. The cabinet is provided with a cap b^3 which fits over the top thereof and is removable. At one side, an aperture b^4 is formed in the side wall of the cabinet and provided with a trap door b^5 pivoted at b^6 to the side wall.

A shaft c is mounted in a step bearing b^7 within the cabinet and secured at its upper extremity in a bearing b^8 formed in bracing member b' which extends between opposed side walls b^9. About the shaft is carried a sleeve d which is rotatable with respect thereto and formed with a ratchet d' at its upper extremity to engage a pawl c' mounted upon the brace b^9. The sleeve carries a block d^2 which, in the present instance, is of hexagonal cross section, each side carrying a magazine e for receiving stacks of lump sugar. The magazines carry a bottom disc e' which is formed with slots e^2 as clearly shown in Figure 2 for permitting a dispensing finger to eject the bottom lump of the magazine when a magazine has been moved to a predetermined position.

Sleeve d has secured thereto at one extremity, a nut d^3 to which is secured a ratchet disc d^4. This ratchet disc cooperates with a ratchet disc d^5 which is secured to the shaft c and rotation of the shaft c in the proper direction causes the teeth on the ratchet discs d^4 and d^5 to engage to move the sleeve d and magazines e with the shaft c. This movement continues for the length of a ratchet tooth, at which time, pawl c' engages in back of an adjacent ratchet tooth on the disc d' to prevent retrogressive movement of the magazine when the movement of the shaft is reversed. It will thus be seen that the shaft c may be returned to a given position from which the operation was initiated to cause the disc d^5 to move under the disc d^4 to engage the next series of teeth. The number of teeth on the several ratchet discs equals the number of magazines so that, as the shaft c is stepped around, the magazines will be moved successively into dispensing position to the rear of aperture b^4.

In order that the shaft c may be moved

in the above manner, a push rod f is slidably mounted in brackets f' within the cabinet. Stops f^2 may be secured to the rod to limit the movement thereof and a spring f^3 is provided to return the rod to a normal position, causing reverse movement of the shaft c. At the lower extremity of the rod f a pin f^4 is formed. This pin engages a slot g' in crank g, the latter being keyed to a countershaft h. Suitable brackets h' may be provided in the cabinet to mount the shaft h and an ejecting finger h^2 is carried by the shaft to engage the lowest lump of sugar in the magazine which has been moved to an ejecting position rearwardly of the aperture b^4. After engaging the lump the finger rides in the slot e^2 to continue the ejecting movement. The shaft h additionally carries a crank i which is pivoted to a link i' for transmitting the movement of the shaft h to the shaft c. A collar c^2 secured to the shaft c is provided with an arm c^3 to which the link i' is pivoted, thus completing the connection between the shaft c and the push rod f.

The operation of the device is as follows. Having filled the magazines with the substance to be dispensed, the push rod f is depressed. This causes the shaft h to be turned to cause the ejecting finger h^2 to move forwardly to engage the bottom lump in one of the magazines. At the same time, the shaft h is moved with respect to the disc d^4, the latter being held in position by the pawl c', until the teeth of the disc d^5 engage behind the next series of teeth on the disc d^4. After the lump has been ejected, the spring f^3 retracts the push rod f and the finger h^2 is moved rearwardly out of the slot e^2. Simultaneously therewith, the magazine is rotated to position the next chamber in back of the aperture b^4. Upon again depressing the push rod f, a lump is ejected from the next magazine and, in this manner, the several magazines are used successively.

It will be apparent that minor changes in design and arrangement of parts may be made without departing from the scope of the present invention save as defined in the appended claims.

I claim as my invention:

1. A dispensing device comprising a plurality of magazines, an ejecting arm, means to mount the arm pivotally for movement in opposite directions to cooperate with the magazines, and means to move the arm in one direction, and means to cause movement of the arm in the opposite direction to move the magazines.

2. A dispensing device comprising a plurality of magazines mounted upon a rotatable member, an ejecting arm, means to mount the arm for movement in opposite directions to cooperate with the magazines, and means to move the arm in one direction, and means to cause movement of the arm in the opposite direction to move the rotating member.

3. A dispensing device comprising a plurality of magazines mounted upon a rotatable member, an ejecting arm, means to mount the arm for movement in opposite directions to cooperate with the magazines, and common means to move the arm in one direction, and means to cause movement of the arm in the opposite direction to move the rotating member.

4. A dispensing device comprising a cabinet, a sleeve rotatably mounted within the cabinet, a shaft within the sleeve, a plurality of magazines carried by the sleeve, an ejecting finger, and means to operate the finger to eject a substance carried in the magazine, the movement in the reverse direction serving to rotate the sleeve.

5. A dispensing device comprising a cabinet, an aperture in the cabinet, a sleeve rotatably mounted within the cabinet, a shaft within the sleeve, a plurality of magazines carried by the sleeve and adapted to be positioned at the apertures successively, ratchet and pawl mechanism to prevent movement of the sleeve in one direction, ratchet mechanism between the shaft and sleeve to impart movement of the shaft to the sleeve in one direction, an ejecting finger cooperating successively with the magazines, and means to impart reciprocating motion to the shaft and finger to cause the finger to move into a magazine and subsequently move the sleeve.

This specification signed this 27th day of June, A. D. 1928.

MARIO ZUCCHELLI.