

June 29, 1926.

1,590,926

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DISPENSING MACHINE

Filed Oct. 9, 1924

2 Sheets-Sheet 1

Fig. 1.

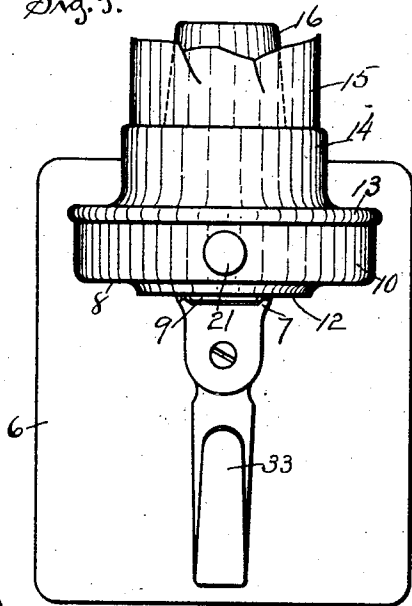


Fig. 2.

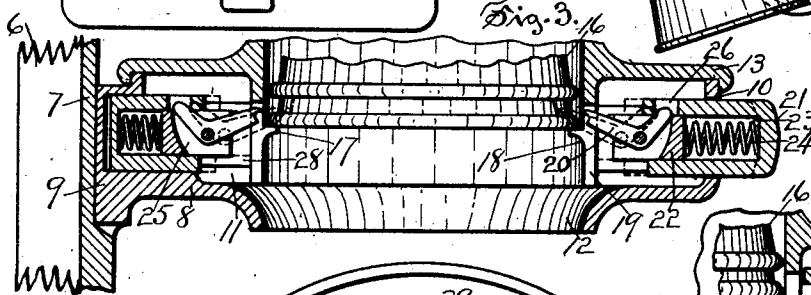
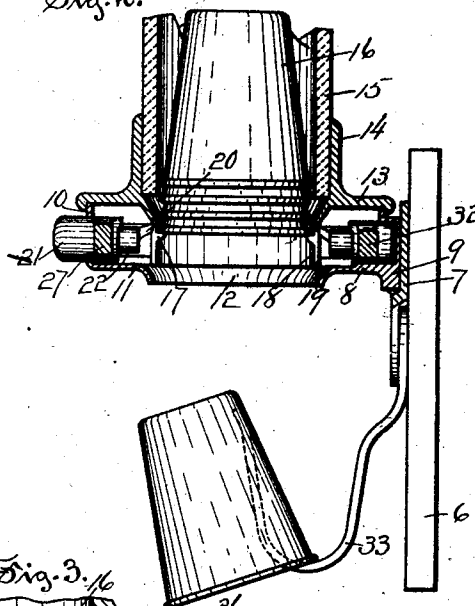


Fig. 3.

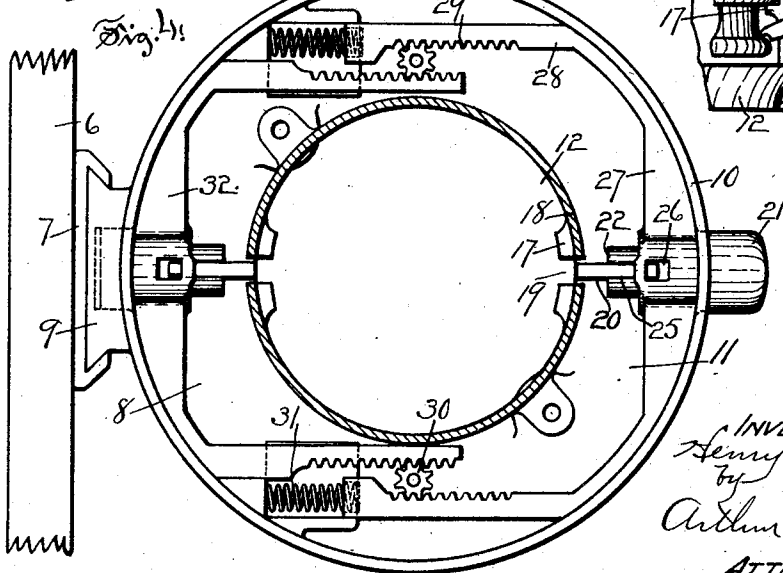


Fig. 4.

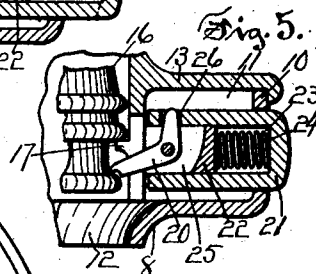


Fig. 5.

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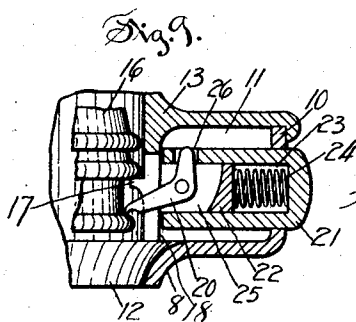
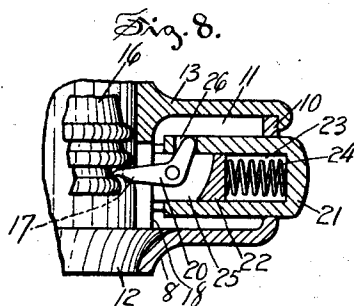
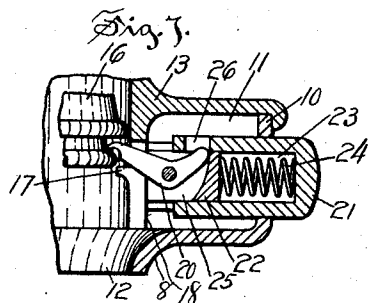
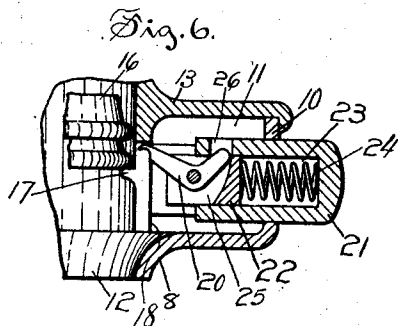
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DISPENSING MACHINE

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

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DISPENSING MACHINE.

Application filed October 9, 1924. Serial No. 742,629.

My invention relates more especially to that class of machines that are constructed to receive drinking cups or similar articles commonly made from paper or other thin inexpensive material, and from which machines the cups or similar articles may be readily obtained, and an object of my invention, among others, is the production of a machine of this class that shall be extremely durable and simple in construction and reliable in operation.

One form of a machine embodying my invention, and in the construction and use of which the objects herein set out, as well as others, may be attained, is illustrated in the accompanying drawings, in which—

Figure 1 is a view in front elevation of my improved dispensing machine with the upper part of the receiver or container broken away.

Figure 2 is a view partially in central longitudinal section of the device shown in Figure 1 looking from a point located at right angles to the point of view of Figure 1 and illustrating the operation in discharging cups therefrom.

Figure 3 is a view, scale enlarged, in central longitudinal section through that part of the device containing the operating mechanism, the parts being shown in normal position.

Figure 4 is a top view with the cup container removed, the parts being shown in their normal position, the stack supporting flange being shown as cut in cross section.

Figure 5 is a fragmental view illustrating the cup discharging position of parts of the mechanism.

Figure 6 is a detail view illustrating the normal position of rest of the cup disengaging members.

Figure 7 is a similar view illustrating an advanced position of said parts in disengaging the cup.

Figure 8 is still another view illustrating a further and advanced position of the parts.

Figure 9 illustrates the position of said parts at the termination of the cup discharging movement.

In the accompanying drawings the numeral 6 indicates a back piece to which a bracket 7 is secured in any suitable manner, said bracket having a groove, preferably of dove-tail shape, for the removable reception

of similarly shaped edges of a lug 9 located on one side of a base 8. This base has a flange 10 encircling a chamber 11 within which the operative parts of the device are housed, said chamber having a discharge opening 12 in its bottom. A cap 13 closes the top of the chamber. It is nicely fitted to the flange 10 and is secured to the base in any suitable manner. This cap has a collar 14 within which the lower end of a container 15 projects, the cap in fact comprising the lower end of said container within which a stack of nested cups 16 may be enclosed.

Stack supporting lips 17 project inwardly from the inner surface of a stack supporting flange 18 extending downwardly from the cap 13 and thereby forming an inner wall for the chamber 11, and as shown in Fig. 3 of the drawings. Said stack supporting lips are preferably located on diametrically opposite sides of the flange 18 and the latter is provided with slots 19 extending from its bottom edge and preferably through the lips 17.

A cup discharging detent 20 is mounted to move into operative position to engage a cup, and while located in this position said detent has a cup discharging operation imparted to it. The device herein illustrated and described embodies one form of a mechanism for effecting the discharge of the cup in the manner above described, in this exemplification of my idea the detent 20 being supported on an actuator 21 by means of which said detent is moved into operative position to effect the release of a cup, said actuator then operating the detent to release said cup. In a preferred form of the mechanism the actuator is arranged to carry the detent into its operative position, and in the specific form herein illustrated and described a detent support 22 to which the detent is pivotally attached is mounted on the actuator. This support may be located in a pocket 23 in the actuator, and the latter may be in the form of a push-button projecting through an opening in the flange 10, and as illustrated in Figures 3 and 5 of the drawings. The support 22 is backed up by a spring 24 at the inner end of the pocket so that, under certain conditions, pressure is exerted against the actuator to force it to normal position after it has been manually forced from such position by being pushed

inwardly as by the thumb or fingers of the operator. The detent shown herein is of bell crank form and is located in a slot 25 in the support 22, one arm projecting into an opening 26 in the actuator 21 and the end of the other arm being formed to engage the lips of the cups 16, and as shown in Figure 5 of the drawings.

In operation, the parts of the mechanism being in the position shown in Figures 2, 3 and 6, pressure is exerted upon the actuator 21 and it is pushed inwardly, moving the detent support 22 against the stack supporting flange 18 and indenting the lip of the cup, as shown in Figure 7 of the drawings. In this position the detent is engaged behind the lip of the lowermost cup in the stack, which cup, and consequently the stack of cups, rests upon the stack supporting lips 17. During the further operation of the mechanism, the support 22 remains stationary, having been moved into contact with the flange 18, and further movement of the actuator inwardly compresses the spring 24 and swings the detent on its pivot, forcing the lowermost cup off from one of the lips 17, as shown in Figure 8, thus permitting the stack of cups to move downwardly until the second cup from the bottom cup of the stack rests upon the lips 17, as shown in Figure 9. The continued movement of the actuator, and consequently of the detent, forces the lowermost cup from the stack and permits it to fall through the discharge opening 12. Pressure upon the actuator being released the parts return to their normal positions of rest under the influence and pressure of the spring 24.

The operation thus far described contemplates a forcing of the cups from engagement with a lip 17 on one side of the flange 18 only, it being understood that the means for supporting the cups on the opposite side of the flange will be such as to cause a cup to be disengaged by its own weight from supports on this side of the flange after such cup has been forcibly disengaged from the lip in the manner hereinabove set out.

I prefer, however, to so construct the mechanism that a forcible disengagement of the lowermost cup will be effected on diametrically opposite sides of the flange 18, and to this end I provide a bow 27, the arms 28 of which are provided with teeth 29 meshing with pinions 30 rotatably mounted on the bottom of the chamber 11. The bow is secured to the actuator 21 to be operated thereby, said bow having a sliding movement within the chamber 11. Springs 31 may be used to assist in the return of the parts to their normal positions. The pinions 30 mesh with teeth on the arms of an auxiliary bow 32 mounted for sliding movement similar to that just described with respect to the bow 27 and in the opposite side of the chamber 11

from that in which the bow 27 is located. This auxiliary bow is secured to an auxiliary actuator containing an auxiliary detent support, a detent and a spring, all constructed as hereinbefore described with respect to the actuator 21 and parts contained therein, the return of the auxiliary actuator and its parts being effected by the bow 32 in the same manner as hereinbefore described with respect to the return of the actuator 21 and its contained parts, and for which reason a further and detailed description of the construction and operation of the auxiliary mechanism is omitted herein.

A receiver, in the structure herein shown in the form of a hook 33, may be secured to the back piece 6 in position to receive the cups 16 thereon when they are released and fall through the opening 12, and as shown in Figure 2 of the drawings.

In accordance with the provisions of the patent statutes I have described the principles of operation of my invention, together with the device which I now consider to represent the best embodiment thereof; but I desire to have it understood that the device shown is only illustrative and that the invention may be carried out by other means and applied to uses other than those above set out.

I claim:—

1. A dispensing machine comprising means for supporting articles to be dispensed, an actuator movably mounted in cooperative relation with respect to said article supporting means, a support mounted on and carried by said actuator and loosely connected therewith to permit movement of the actuator independently of said support, and an article disengaging member movably mounted on said support and connected with said actuator for operation thereby to disengage articles from said supporting means.

2. A dispensing machine comprising means for supporting articles to be dispensed, an actuator movably mounted in cooperative relation with respect to said article supporting means, a support mounted on and carried by said actuator and loosely connected therewith to permit movement of the actuator independently of said support, and an article disengaging detent of bell crank form pivotally mounted on said support and having one arm arranged to engage said articles and its other arm loosely connected with said actuator for article disengaging movement thereby.

3. A dispensing machine comprising means for supporting articles to be dispensed, an actuator movably mounted in cooperative relation with respect to said article supporting means and having an opening, a support mounted on and carried by said actuator and loosely connected therewith to permit movement of said actuator independ-

ently of said support, and an article disengaging member movably mounted on said support and projecting into the opening in the actuator for operation by the latter to disengage articles from said supporting means.

4. A dispensing machine comprising means for supporting articles to be dispensed, an actuator movably mounted in cooperative relation with respect to said article supporting means and having a pocket with an opening through the wall thereof, a support loosely housed within said pocket to permit movement of the actuator independently of said support, and an article disengaging member movably mounted on said support and engaged within said opening for operation by the actuator to disengage articles from said support.

5. A dispensing machine comprising means for supporting articles to be dispensed, an actuator movably mounted in cooperative relation with respect to said article supporting means, a support mounted on and carried by said actuator from an operative to an inoperative position, and an article disengaging member movably mounted on said support and loosely engaged with said actuator for positive operation thereby to disengage articles from said supporting means.

6. A dispensing machine comprising means for supporting articles to be dispensed, an actuator movably mounted in cooperative relation with respect to said article supporting means, a support mounted on and bodily carried by said actuator from an inoperative to an operative position, means for moving said actuator independently of said support, an article disengaging member movably mounted on said support, and a connection between said actuator and support to positively operate the latter to disengage articles from said supporting means.

7. A dispensing machine comprising means for supporting articles to be dispensed, an actuator movably mounted in cooperative relation with respect to said article supporting means and having an opening, a support mounted on and carried bodily by said actuator from an inoperative to an operative position, and an article disengaging member pivotally mounted on said support and engaged within said opening in the actuator for operation by the latter to disengage articles from said supporting means.

8. A dispensing machine comprising means for supporting articles to be dispensed, an actuator movably mounted in cooperative relation with respect to said article supporting means and having an opening, a support loosely mounted on and carried bodily by said actuator from an inoperative to an operative position, means for moving said actuator independently of said support, an article disengaging member movably mount-

ed on said support, and a connection of said article disengaging member in said opening for positive operation of said member to disengage articles from said article supporting means.

9. A dispensing machine comprising means for supporting articles to be dispensed, an actuator movably mounted in cooperative relation with respect to said article supporting means and having a pocket, a support located in said pocket, a spring within said pocket between said support and the bottom of the pocket to exert thrust upon said members, an article disengaging member movably mounted upon said support, and a connection between said actuator and said disengaging member for operation of the latter to disengage articles from said article supporting means.

10. A dispensing machine comprising a container, means upon opposite sides of said container to support articles to be dispensed, means appurtenant to each of said supports for releasing articles therefrom, a yoke attached to each of said releasing means to operate them, and a toothed connection between said yokes to cause actuation of one by reason of the operation of the other.

11. A dispensing machine comprising a container, means upon opposite sides of said container to support articles to be dispensed, actuators of similar construction appurtenant to each of said supports, said actuators being mounted for reciprocating movement toward and from each other to lessen the space therebetween, an article disengaging member supported by each of said actuators for movement into operative position thereby, a connection between said actuators to effect movement of one by reason of the operation of the other, and a positive connection between each of said members and an actuator for operation of said members to disengage articles from said supports.

12. A dispensing machine comprising a support for articles to be dispensed, an actuator mounted to move toward and from said article support, a detent support movably mounted on said actuator, a detent carried by said detent support against said articles to compress and disengage them from said article support, and a connection between said detent and said actuator to move said detent on its support to eject articles after disengagement from said article support.

13. A dispensing machine comprising a support for articles to be dispensed, a detent support located in cooperative relation with respect to said article support, a detent pivotally mounted on said detent support, and means operatively connected with said detent support to cause said detent to compress articles to disengage them from said article support, said means being movable independently of said detent support and di-

rectly engaged with said detent to move it on its pivot on the detent support to eject said articles.

14. A dispensing machine comprising a support for articles to be dispensed, an actuator movably supported in cooperative relation with respect to said article support, a detent support movably mounted on said actuator to be carried thereby into cooperative relation with respect to said article support, said actuator being movable independently of said detent support, and a detent movably mounted on said detent support and cooperatively engaged with said actuator to be carried by said members into contact with said articles to retard movement of the detent support and permit independent movement of the actuator to operate said detent.
15. A dispensing machine comprising a support for articles to be dispensed, an actuator movably supported in cooperative relation with respect to said article support, a detent support movably mounted on said actuator to be carried thereby into cooperative relation with respect to said article support, said actuator being movable independently of said detent support, and a detent of bell crank form pivotally mounted on said

detent support and having one arm to engage said articles and its other arm directly engaged by said actuator to be carried by said members into contact with said articles to retard movement of the detent support and permit independent movement of said actuator to effect ejecting movement of said detent.

16. A dispensing machine comprising a support for articles to be dispensed, an actuator movably mounted in cooperative relation with respect to said article support, a detent support mounted on said actuator and carried thereby relatively to said article support and having a yielding movement with respect to said actuator, and a detent of bell crank form pivotally mounted on said detent support with one arm positioned to engage the bottom article of a stack on said article support and thereby retard movement of said detent support to effect yielding movement thereof, the other arm of said detent being loosely engaged with said actuator to effect direct operation of the detent by the actuator to eject the bottom article of said stack during the yielding movement of said detent support.

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