Oct. 3, 1939. R. W. WARNER ET AL 2,174,712

DISPENSING APPARATUS

Filed June 3, 1938 2 Sheets-Sheet 1

Fig. 1.

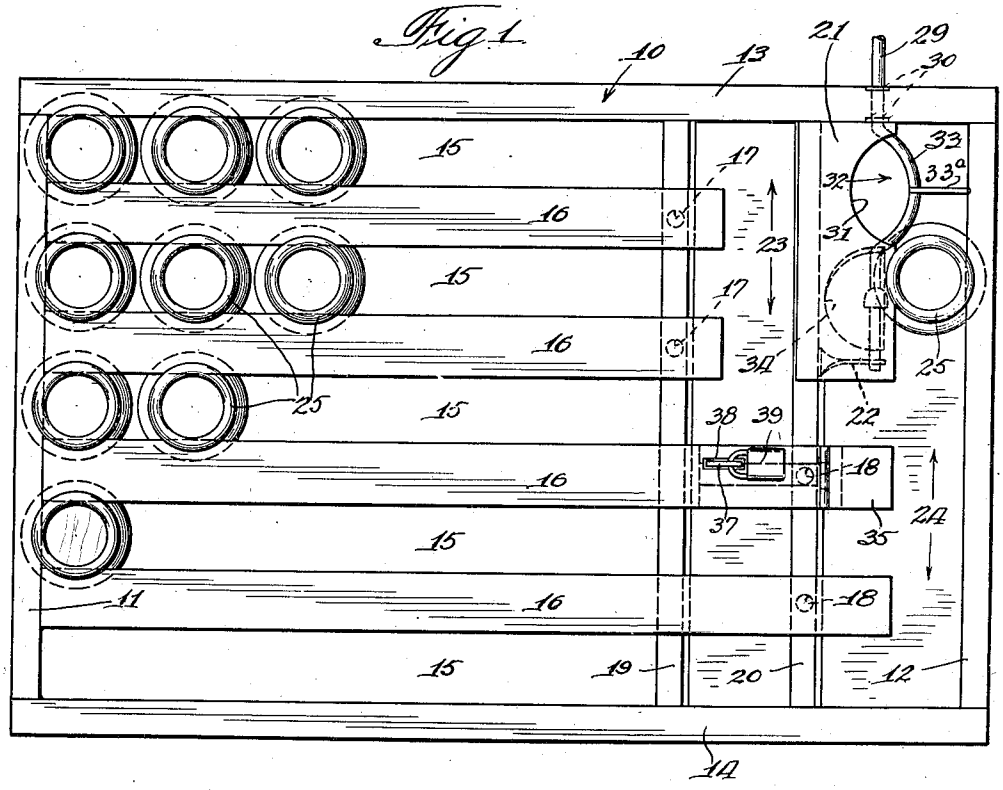
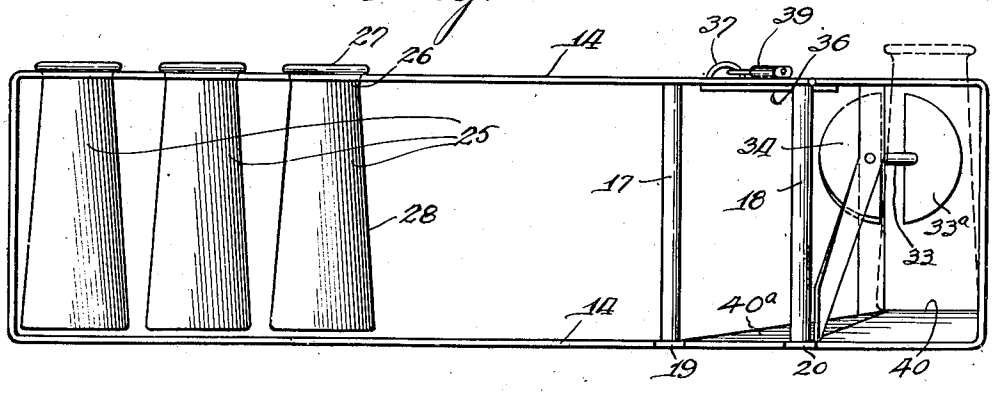



Fig. 2.




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Fig. 3.

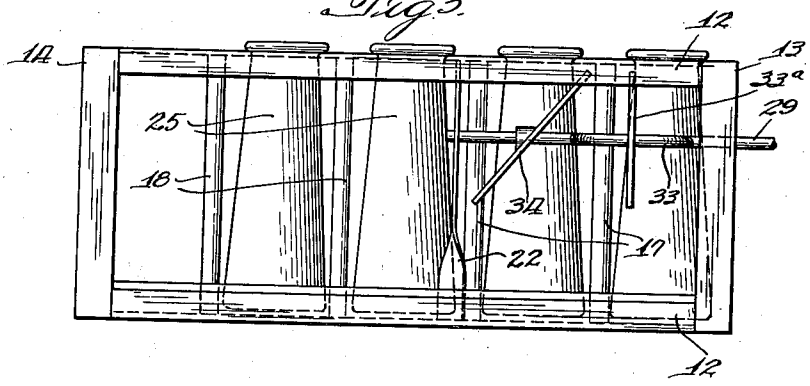
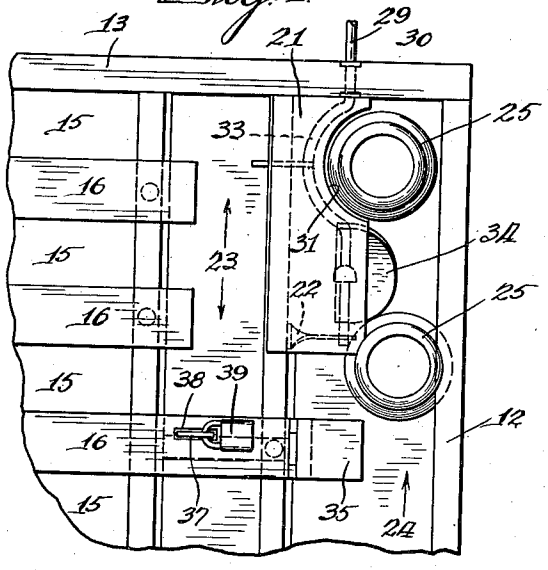



Fig. 4.




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Patented Oct. 3, 1939

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# UNITED STATES PATENT OFFICE

2,174,712

## DISPENSING APPARATUS

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Application June 3, 1938, Serial No. 211,586

10 Claims. (Cl. 312—88)

This invention relates to a dispensing apparatus and has special reference to a device for dispensing and for conveniently handling containers for beverages and the like.

More particularly this invention has reference to an apparatus for dispensing containers of the type having a neck portion of reduced width between enlarged head and main body portions, comprising a frame having a plurality of spaced guideways communicating with a delivery opening in which the guideways are of a width to permit passage of the containers in the direction thereof but to prevent removal therefrom, there being a rotatable shaft extending in the direction of one of the guideways adjacent the delivery opening with means on the shaft for alternately obstructing and clearing the last mentioned guideway as the delivery opening is respectively cleared and obstructed during the rotation of the shaft.

As will hereinafter be more particularly pointed out, the enlarged heads of the containers are preferably supported by the edges of spaced strips in order to eliminate the possibility of the containers tipping. The strips permit the containers to be moved therealong manually to the delivery opening which is normally obstructed but is cleared by the rotation of a shaft, which movement obstructs the adjacent guideway to prevent removal of a second container except by a continued rotation of the shaft.

The rotatable shaft is preferably operated by a coin-controlled mechanism which may permit a single complete revolution of the rotatable shaft after the insertion of a coin therein, a second complete rotation of the shaft being obtained only upon the insertion of a second coin. Thus it is possible to obtain access to a container through the delivery opening upon a complete revolution of the rotatable shaft.

The only mechanical operation necessary in dispensing a container from the dispensing apparatus is the rotation of a shaft. The containers are manually moved to position for access thereto by manual manipulation and thus a maximum simplicity of construction is obtained. Under normal use, therefore, there is nothing that could possibly get out of order. One of the objects of this invention is to provide a dispensing apparatus of the character indicated above which is simple and efficient in operation, is comparatively inexpensive to manufacture, and is durable.

Another object of this invention is to provide a dispensing apparatus of the type hereinabove mentioned in which the containers are manually moved to position for the dispensing operation, the dispensing operation being controlled by a simple revolution of a rotatable shaft.

Other objects and advantages of this invention will hereinafter be more particularly pointed out and for a more complete understanding of the characteristic features of this invention, reference may now be had to the following description when taken together with the accompanying drawings, in which latter:

Figure 1 is a top plan view of a dispensing apparatus embodying the features of this invention;

Fig. 2 is a front elevational view of Fig. 1;

Fig. 3 is an end elevational view of Fig. 1; and

Fig. 4 is a fragmentary top plan view similar to Fig. 1 showing a changed position of the dispensing mechanism.

Referring now more particularly to the drawings, the apparatus embodying the features of this invention is shown as comprising a frame 10 preferably of substantially rectangular shape, having vertically spaced end bars 11 and 12 connecting vertically spaced cross bars 13 and 14. The vertically spaced cross bars 13 and 14 may each preferably comprise a substantially rectangular frame formed of continuous metal strips with the frames connected together by the end bars 11 and 12 likewise preferably comprising metal strips which are welded or otherwise fixedly secured thereto.

A plurality of spaced guideways 15 extend longitudinally of the frame and are formed by the spaced rigid strips 16. The strips 16 may preferably be formed of metal in which one end of each of the strips is secured as by welding or the like to the upper end bar 11 with the other end of each of the strips being supported on and secured to the upper ends of rods 17 and 18. The lower ends of the rods 17 are preferably secured to a laterally extending strip 19 and the lower ends of rods 18 are preferably secured to a laterally extending strip 20, the ends of the strips 19 and 20 being preferably welded or otherwise secured to the lower cross bars 13 and 14 of the frame.

A plate 21 is disposed preferably adjacent one corner of the frame, one end of the plate being supported by and welded or otherwise secured to the upper cross bar 13 of the frame, with the other end of the plate being supported by and secured, as by means of welding, to the upper end of a bracket 22. The bracket 22 has its lower

end welded or otherwise secured to the edge of the laterally extending strip 20.

The plate 21 extends preferably in the same plane with the strips 16 and one side edge thereof is spaced a distance from the end of the adjacent shorter strips 16 equal to the spacing between the strips to form a laterally extending guideway 23. The free end of the plate 21 is likewise spaced the same distance from an adjacent longer strip 16 as the spacing between adjacent strips. The other side edge of the plate 21 is also spaced from the upper end strip 12 the same distance as it is spaced from the ends of the strips 16 which, as above stated, is equal to the spacing between adjacent strips 16. The same spacing is also had between the ends of the longer strips 16 and the strip 12 as that between adjacent strips to form a laterally extending guideway 24.

A plurality of containers 25 are stored in the guideways 15, each of the containers preferably having a neck portion 26 of reduced width between an enlarged head portion 27 and a main body portion 28. The underneath edges of the heads 27 rest on edges of the strips 16 bounding the guideways 15 and the depth of the frame is sufficient to permit the container to be suspended on the strips. In suspending the containers by the enlarged head portions, the containers are prevented from falling over or tipping when the casing is handled or when the containers are moved. The space between the strips is sufficient to permit passage of the containers in the direction of the guideways but the enlarged head and main body portions prevent removal thereof through the guideways.

A rotatable shaft 29 is mounted beneath the plate 21, one end of the shaft being supported in bearings of vertically extending strips 30, the strips being secured between the spaced cross bars 13, and the other end of the shaft being supported in a bearing of the bracket 22. The plate 21 is cut away as at 31 to provide a delivery opening 32, the cut-away portion being of sufficient width to form a space between it and the end bar 12 to permit the removal of the container. This width, of course, will be slightly larger than the widest diameter of the container.

In order to prevent unauthorized dispensing of the containers, the shaft 29 is provided with an offset portion 33 and a plate 33a secured to and projecting outwardly from said offset portion, the plate and offset portion extending into the dispensing opening 32 during one position of the rotatable shaft. Such a position is shown in Fig. 1 of the drawings. The shape of the offset portion 33 is preferably substantially the same as that of the peripheral contour of the cut-away portion 31, both of which are preferably of substantially the same contour as that of the container.

Referring now more particularly to Fig. 4 of the drawings, the rotatable shaft 29 has been moved to a position such that the offset portion 33 has cleared the delivery opening and is wholly concealed by the plate 21. Such a position of the rotatable shaft and the offset portion 33 permits the movement of a container 25 into position in the delivery opening for removal.

It is desirable that during the removal of one container from the dispensing apparatus a second container may not be removed except by a subsequent complete rotation of the shaft 29. As shown more particularly in Fig. 1 of the drawings, a container 25 may be moved into the laterally extending passage 24 but is prevented from being dispensed by reason of the offset portion 33 of the rotatable shaft 29 obstructing the delivery opening. As the shaft 29 is rotated a half a revolution, the container 25 is moved into the delivery opening and in order to prevent a second container from being moved simultaneously therewith a plate 34 is fixedly secured to the rotatable shaft 29 preferably at an angle oblique to the axis of the shaft. Should it be attempted to move a second container together with the first container into the delivery opening, the obliquely-disposed plate would not only prevent the entrance of a container thereinto but would actually move the container in an opposite direction to the direction of travel of the first container as shown in Fig. 4.

In the dispensing operation, the containers 25 may be filled with liquids of different kinds as, for example, sweet milk, buttermilk, chocolate milk, or the like, in the several rows of guideways. If it is desired to obtain a container filled with sweet milk from, for example, the topmost guideway, one of the containers is moved longitudinally in the guideway 15 and laterally in the guideway 23 and over to the laterally extending guideway 24 for passage to the delivery opening 32. A coin is inserted into the coin-controlled mechanism for permitting a partial rotation of the shaft 29 to the position shown in Fig. 4, whereafter the container may be removed.

If a container of chocolate milk, for example, is desired and that substance is in the next to the bottom guideway, the container is moved longitudinally along the guideway 15 to the laterally extending guideway 24 for position adjacent the delivery opening whereupon the shaft 29 is operated to the position shown in Fig. 4 to permit removal of the container, From the position in Fig. 4 it is necessary, before a second container may be obtained, for the shaft to be rotated a half revolution so that the container may pass the plate 34 to the position shown in Fig. 1, whereafter a completion of the rotating movement of the shaft will free the obstruction to the delivery opening to permit removal thereof.

In order to replenish the supply of containers to the guideways, the end 35 of one of the strips 16 may be pivotally secured to the main body portion so that it may be raised to a vertical plane thus enlarging the laterally extending guideway 24 to the width of the greatest diameter of the container. A hasp 36 is secured to the underneath side of the end portion 35 and has a U-shaped portion 37 extending from the upper surface thereof through a slot 38 in the strip 16. A lock 39 may extend through the U-shaped portion and secure the hasp and the end portion 35 against movement excepting by unlocking the lock 39 and removing the same from the U-shaped portion.

An elevated platform 40 may preferably be disposed beneath the laterally extending guideway 24 and the delivery opening, the platform having an inclined portion 40a for directing the containers thereupon. The platform is sufficiently high to project a substantial portion of the container above the frame, the container being readily accesible for removal in such position.

While but a single embodiment of this invention is herein shown and described, it is to be understood that various modifications thereof may be apparent to those skilled in the art without departing from the spirit and scope of this invention and, therefore, the same is only to be

limited by the scope of the prior art and the appended claims.

We claim:

1. A dispensing apparatus for containers having a neck portion of reduced width between enlarged head and main body portions, comprising a frame having a plurality of spaced guideways communicating with a delivery opening, said guideways being of a width to permit passage of said containers in the direction thereof but to prevent removal therefrom, a rotatable shaft mounted on said frame and extending in the direction of one of said guideways adjacent said delivery opening, means on said shaft and rotatable therewith for movement to alternately obstruct and clear said delivery opening, and means on said shaft and rotatable therewith for movement to alternately obstruct and clear the last-mentioned guideway as said delivery opening is respectively cleared and obstructed by the rotation of said shaft.

2. A dispensing apparatus for containers having a neck portion of reduced width between enlarged head and main body portions, comprising a frame having a plurality of spaced guideways communicating with a delivery opening, said guideways being of a width to permit passage of said containers in the direction thereof but to prevent removal therefrom, a rotatable shaft mounted on said frame and extending in the direction of one of said guideways adjacent said delivery opening, means fixed to and projecting outwardly from said shaft for movement to alternately obstruct and clear said delivery opening, and means fixed to and projecting outwardly from said shaft for movement to alternately obstruct and clear the last-mentioned guideways said delivery opening is respectively cleared and obstructed thereby by the rotation of said shaft.

3. A dispensing apparatus for containers having a neck portion of reduced width between enlarged head and main body portions, comprising a frame having a plurality of spaced guideways communicating with a delivery opening, said guideways being of a width to permit passage of said containers in the direction thereof but to prevent removal therefrom, a rotatable shaft mounted on said frame and extending in the direction of one of said guideways adjacent said delivery opening, means fixed to and extending outwardly from one side of said shaft for movement to alternately obstruct and clear said delivery opening, and means on the opposite side of said shaft for movement to alternately obstruct and clear the last-mentioned guideway as said delivery opening is respectively cleared and obstructed by the rotation of said shaft.

4. A dispensing apparatus for containers having a neck portion of reduced width between enlarged head and main body portions, comprising a frame having a plurality of spaced guideways communicating with a delivery opening, said guideways being of a width to permit passage of said containers in the direction thereof but to prevent removal therefrom, a rotatable shaft mounted on said frame and extending in the direction of one of said guideways adjacent said delivery opening, a plate fixed to said shaft for alternately obstructing and clearing the last-mentioned guideway during rotation of said shaft, and a separate means on said shaft for alternately obstructing and clearing said delivery opening as said last-mentioned guideway is respectively cleared and obstructed by said plate during the rotation of said shaft.

5. A dispensing apparatus for containers having a neck portion of reduced width between enlarged head and main body portions, comprising a frame having a plurality of spaced guideways communicating with a delivery opening, said guideways being of a witdth to permit passage of said containers in the direction thereof but to prevent removal therefrom, a rotatable shaft mounted on said frame and extending in the direction of one of said guideways adjacent said delivery opening and having an offset portion, and a plate on said shaft for alternately obstructing and clearing the last-mentioned guideway during rotation of said shaft, said offset portion alternately obstructing and clearing said delivery opening as said last-mentioned guideway is respectively cleared and obstructed by said plate during the rotation of said shaft.

6. A dispensing apparatus for containers having a neck portion of reduced width between enlarged head and main body portions, comprising a frame having a plurality of spaced guideways communicating with a delivery opening, said guideways being of a width to permit passage of said containers in the direction thereof but to prevent removal therefrom, a rotatable shaft mounted on said frame and extending in the direction of one of said guideways adjacent said delivery opening and having an offset portion, and a plate fixed on said shaft for alternately obstructing and clearing the last-mentioned guideway during rotation of said shaft, said plate extending in a direction oblique to the axis of said shaft, said offset portion alternately obstructing and clearing said delivery opening as said last-mentioned guideway is respectively cleared and obstructed during the rotation of said shaft.

7. A dispensing apparatus for containers having a neck portion of reduced width between enlarged head and main body portions, comprising a frame having a plurality of spaced guideways communicating with a delivery opening shaped substantially to conform to the contour of said container, said guideways being of a width to permit passage of said containers in the direction thereof but to prevent removal therefrom, a rotatable shaft mounted on said frame and extending in the direction of one of said guideways adjacent said delivery opening and having an offset portion shaped to conform to the adjacent portion of said delivery opening, and a plate on said shaft for alternately obstructing and clearing the last-mentioned guideway during rotation of said shaft, said plate having an arcuate periphery and extending in a direction oblique to the axis of said shaft, said offset portion alternately obstructing and clearing said delivery opening as said last-mentioned guideway is respectively cleared and obstructed during the rotation of said shaft.

8. A dispensing apparatus for containers having a neck portion of reduced width between enlarged head and main body portions, comprising a frame having a plurality of spaced rigid strips forming guideways communicating with a delivery opening, the space between said strips being of a width to permit passage of said containers in the direction thereof but to prevent removal therefrom, a rotatable shaft mounted on said frame and extending in the direction of one of said guideways adjacent said delivery opening, means on said shaft and rotatable therewith for movement to alternately obstruct and clear said delivery opening, and means on said shaft for movement to alternately obstruct and clear the

last-mentioned guideway as said delivery opening is respectively cleared and obstructed during the rotation of said shaft.

9. A dispensing apparatus for containers having a neck portion of reduced width between enlarged head and main body portions, comprising a frame having a plurality of spaced rigid strips forming longitudinally extending guideways, said strips terminating in a spaced relation from one end of said frame to form a laterally extending guideway communicating with a delivery opening, said laterally and longitudinally extending guideways being of a width to permit passage of said containers in the direction thereof but to prevent removal therefrom, a rotatable shaft mounted on said frame and extending in the direction of said laterally extending guideway adjacent said delivery opening, means on said shaft and rotatable therewith for movement to alternately obstruct and clear said delivery opening, and means on said shaft for movement to alternately obstruct and clear the laterally extending guideway as said delivery opening is respectively cleared and obstructed during the rotation of said shaft.

10. A dispensing apparatus for containers having a neck portion of reduced width between enlarged head and main body portions, comprising a frame having a plurality of spaced rigid strips forming longitudinally extending guideways, said strips terminating in a spaced relation from one end of said frame to form a laterally extending guideway communicating with a delivery opening, said laterally and longitudinally extending guideways being of a width to permit passage of said containers in the direction thereof but to prevent removal therefrom, said head portions of said containers adapted to rest on and be supported by portions of said strips bounding the spaces therebetween, a platform beneath said laterally extending guideway for elevating said containers so that said head portions thereof are lifted clear of said strips, a rotatable shaft mounted on said frame and extending in the direction of one of said guideways adjacent said delivery opening, means on said shaft and rotatable therewith for movement to alternately obstruct and clear said delivery opening, and means on said shaft for movement to alternately obstruct and clear the last-mentioned guideway as said delivery opening is respectively cleared and obstructed during the rotation of said shaft.

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