United States Patent

[11] 3,625,397

[72] Inventors **George R. Shelly**
Miami;
Robert J. Shelley, Jr., Miami;
Arthur B. Dixon, W. Hollywood;
Bruce F. House, Miami, all of Fla.

[21] Appl. No. 17,811
[22] Filed Mar. 9, 1970
[45] Patented Dec. 7, 1971

[73] Assignee **Shelley Manufacturing Company**
Miami, Fla.

[54] **CONTAINER DISPLAY AND DISPENSER**
14 Claims, 13 Drawing Figs.

[52] U.S. Cl. 221/155, 221/279, 312/71
[51] Int. Cl. A47f 1/06
[50] Field of Search ..... 42/87; 221/279, 185, 197, 307, 309, 150 C, 155; 312/71, 45; 206/56, 45.12; 220/107–109; 141/319, 364, 372

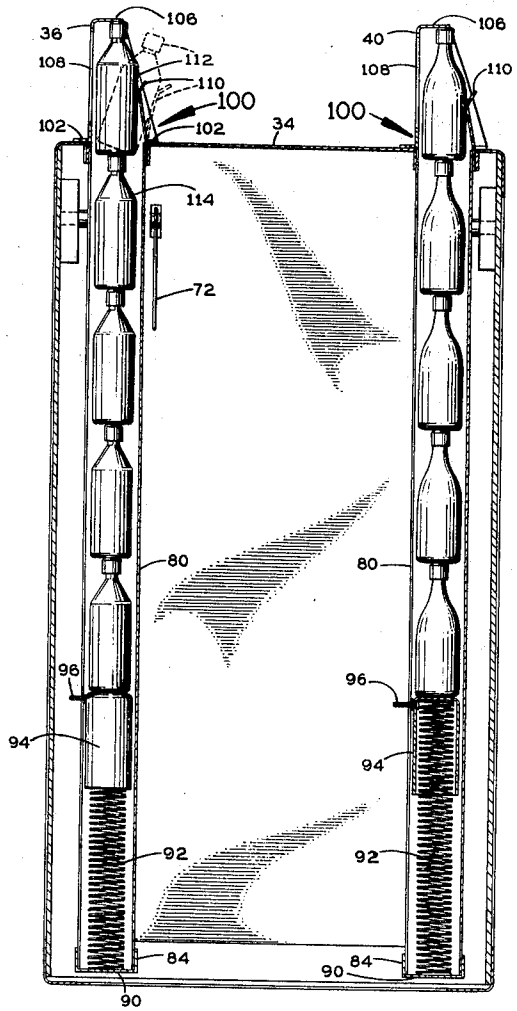
[56] **References Cited**

UNITED STATES PATENTS

2,879,122	3/1959	Maves	312/71
2,397,403	3/1946	Bishop	312/71 X
910,397	1/1909	Laundensack	42/87
2,798,640	7/1957	Coddington	312/71 UX
2,299,347	10/1942	Rifkin	221/309 X
3,263,806	8/1966	Ring	206/56 (A4)
2,928,539	3/1960	Chirchiglia	206/45.12 X

Primary Examiner—Stanley H. Tollberg
Attorney—Settle and Oltman

ABSTRACT: A beverage dispenser having a cartridge including a tube for holding a stack of containers, a stop spaced from one end of the tube by about the height of a container, and a spring in the tube for urging the stack of containers toward the stop and to urge the end container against the stop. The end container may be viewed for display purposes and also may be removed from the tube with the spring pushing another container against the stop. The cartridge is carried in a cart, and in this application, a plurality of the tubes are arranged side-by-side with the stop projecting above the upper surface of the cart so that a plurality of containers are viewable at the top of the cart and can be dispensed easily from the top of the cart. A spring normally holds the containers under the stop, and the spring is yieldable to allow removal of the containers from the cartridge. A loader is provided consisting of a tube which may be inserted under the stop to release the spring, the tube carrying containers for either loading the containers into the cartridge or removing containers from the cartridge.



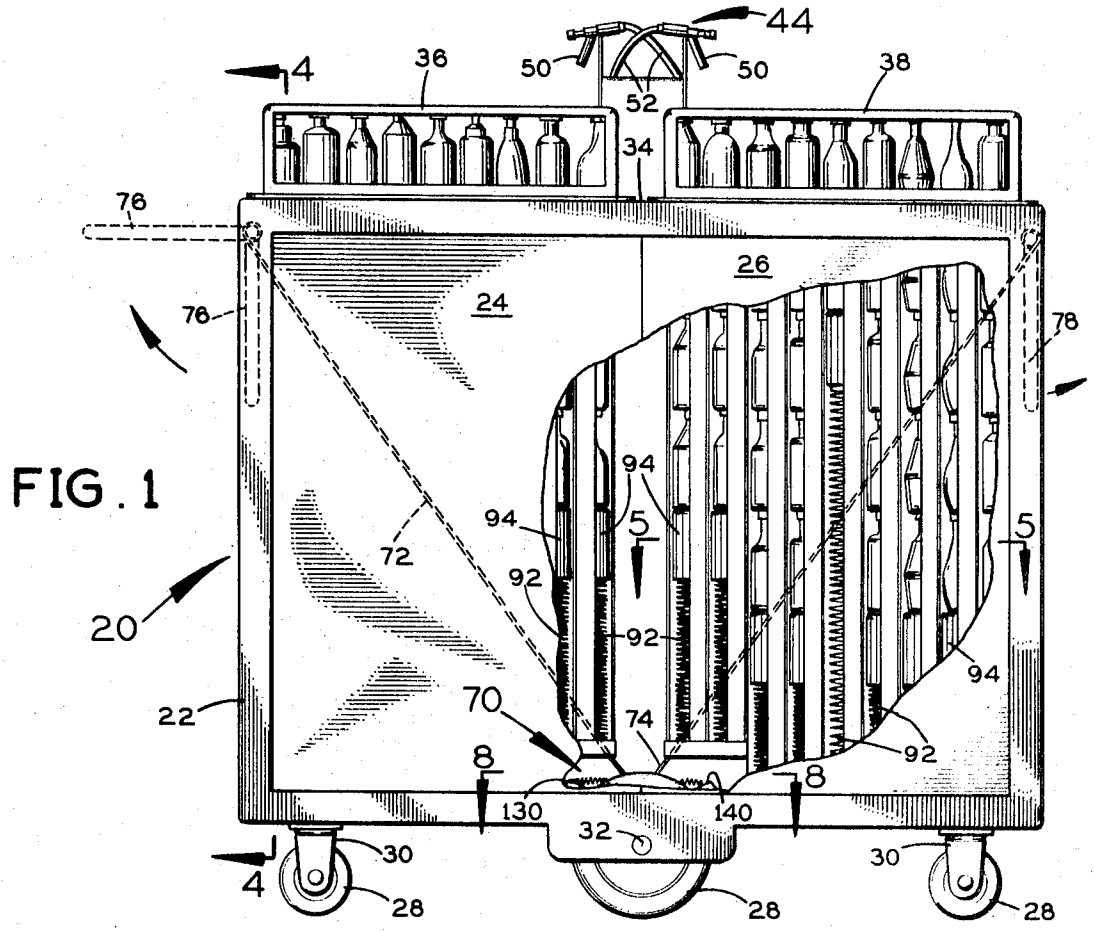


FIG. 1

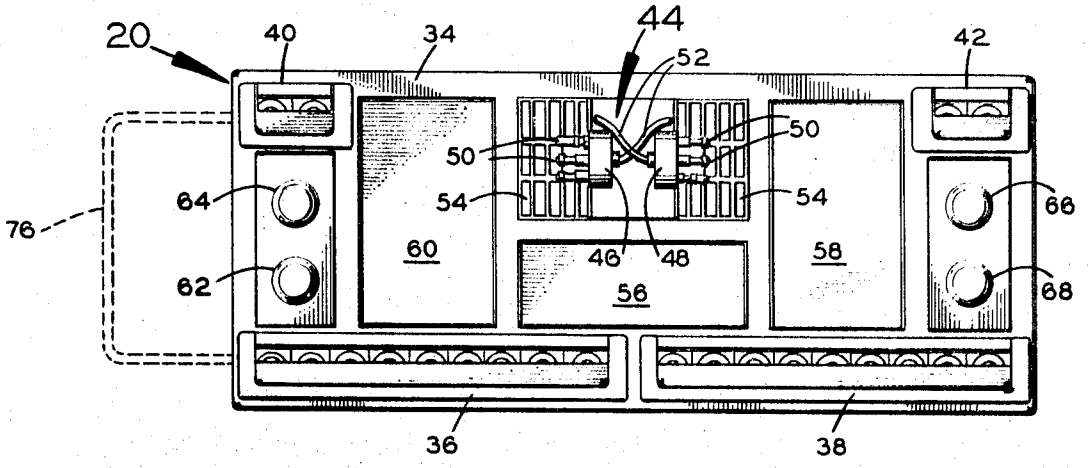


FIG. 2

INVENTORS
GEORGE R. SHELLEY
ROBERT J. SHELLEY, JR.
ARTHUR B. DIXON
BRUCE HOUSE
BY
SETTLE & OLTMAN
ATTORNEYS

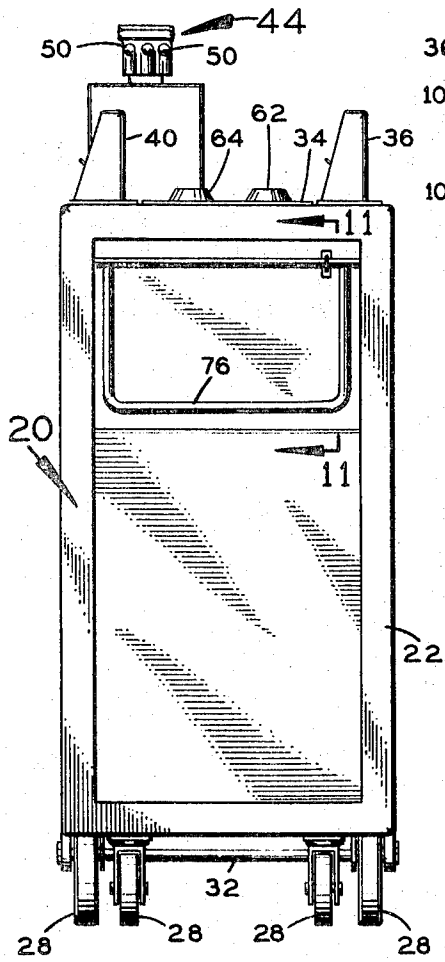


FIG. 3

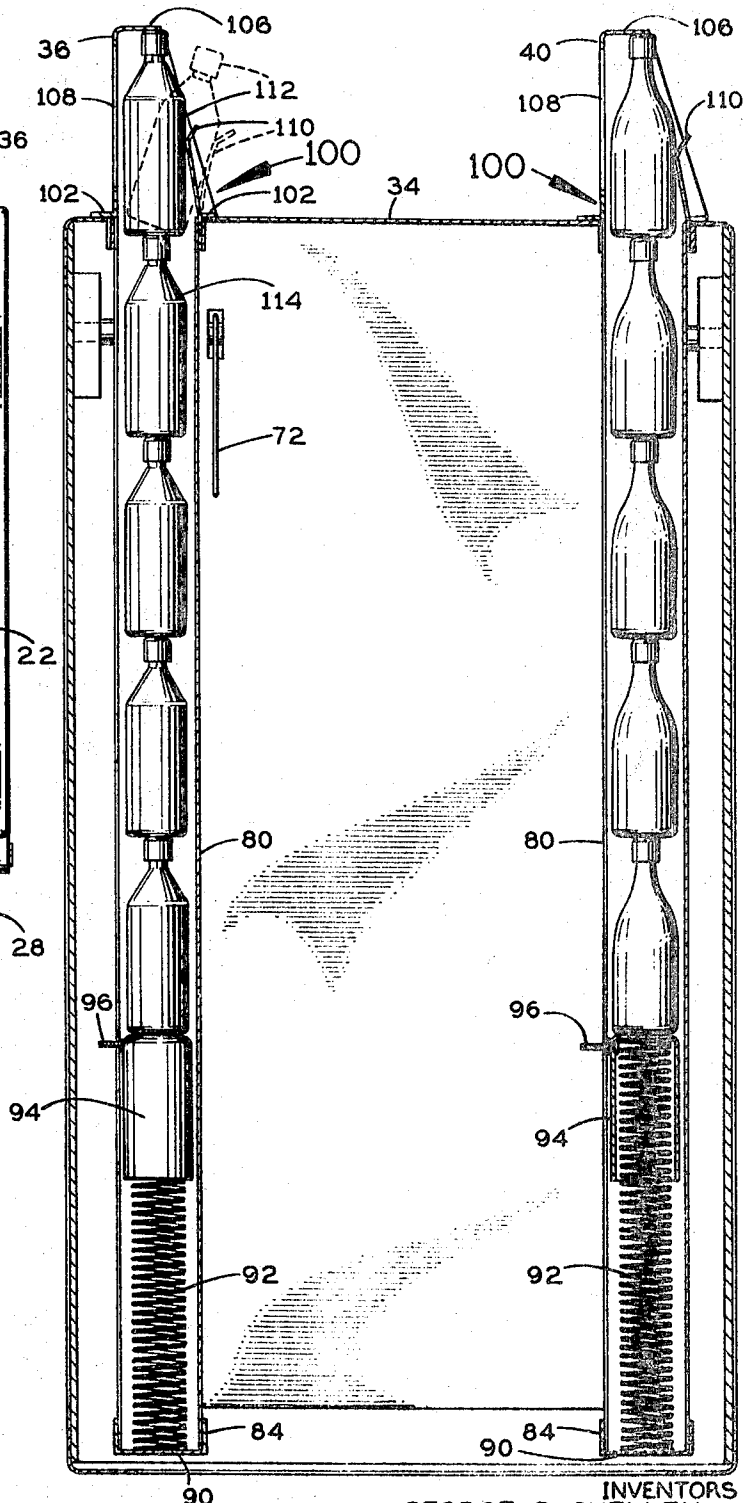
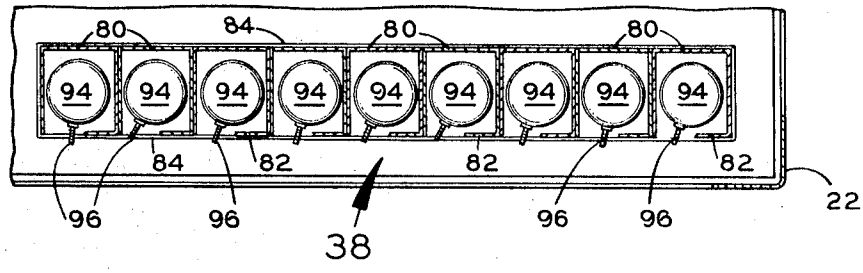


FIG. 4

INVENTORS
GEORGE R. SHELLEY
ROBERT J. SHELLEY, JR.
ARTHUR B. DIXON
BRUCE HOUSE
BY
SETTLE & OLTMAN
ATTORNEYS

FIG. 5



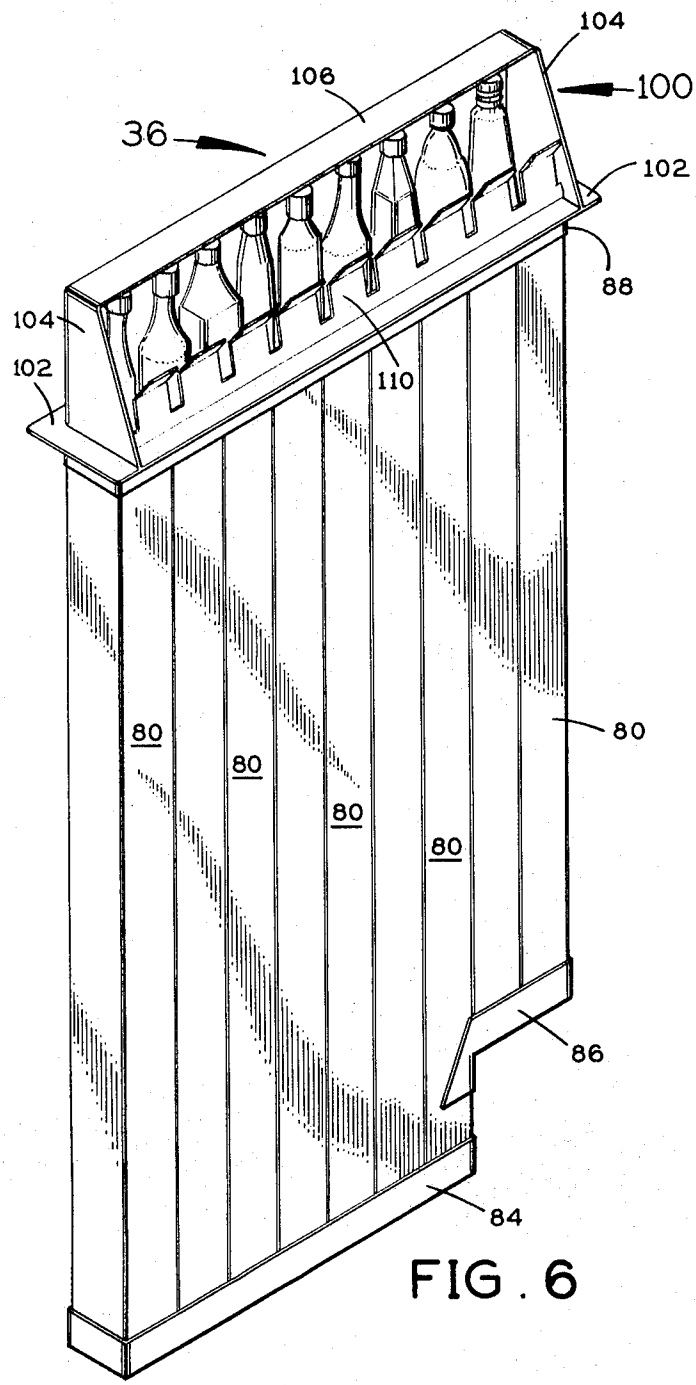


FIG. 6

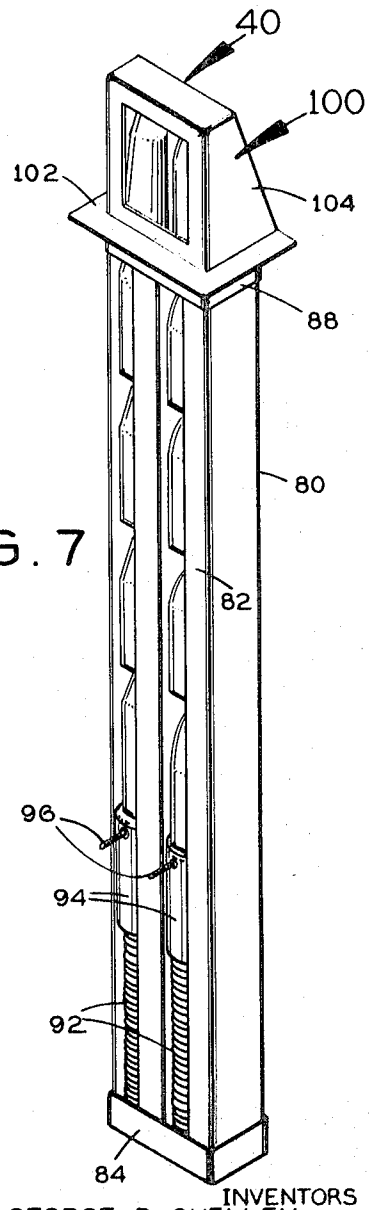


FIG. 7

INVENTORS
GEORGE R. SHELLEY
ROBERT J. SHELLEY, JR.
ARTHUR B. DIXON
BRUCE HOUSE
BY SETTLE & OLTMAN
ATTORNEYS

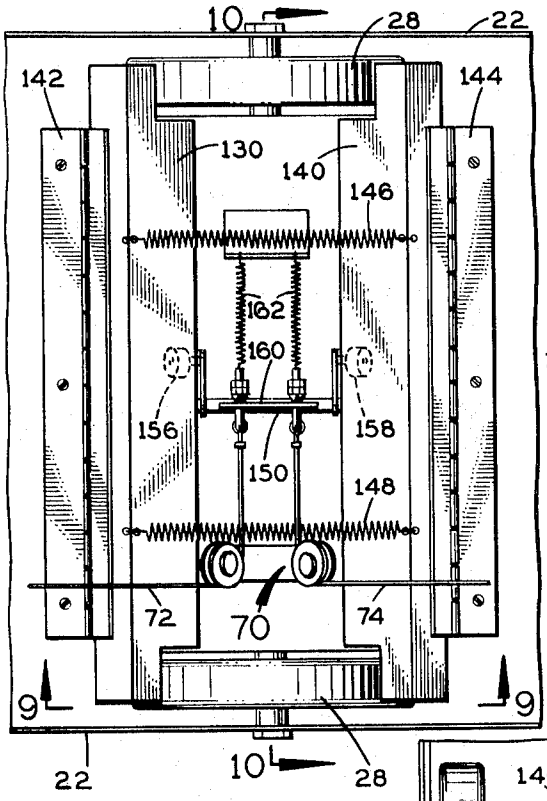


FIG. 8

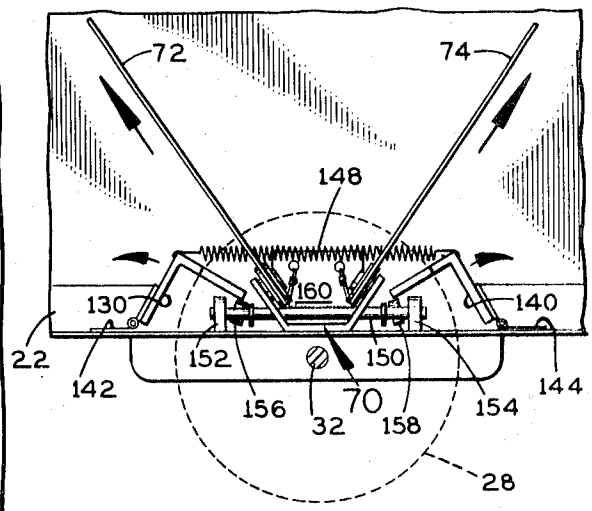


FIG. 9

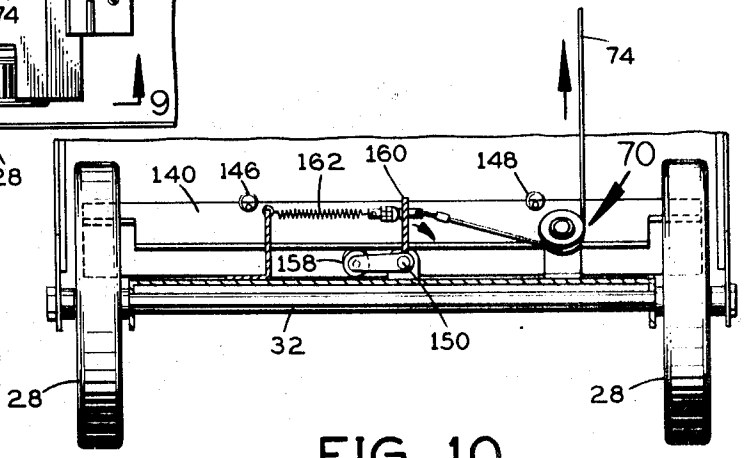


FIG. 10

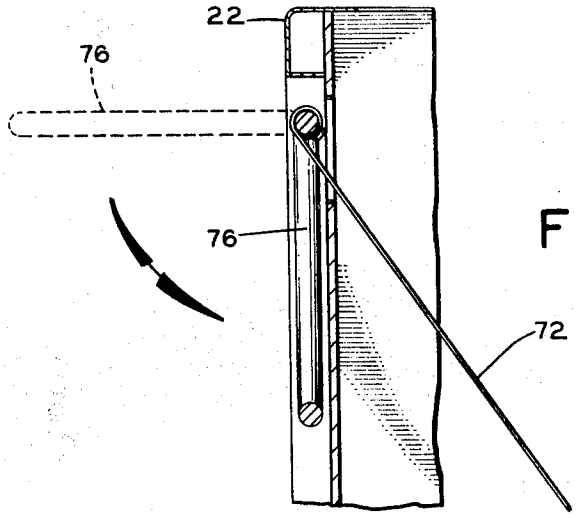


FIG. 11

INVENTORS
GEORGE R. SHELLEY
ROBERT J. SHELLEY, JR.
ARTHUR B. DIXON
BRUCE HOUSE
BY
SETTLE & OLTMAN
ATTORNEYS

FIG. 12

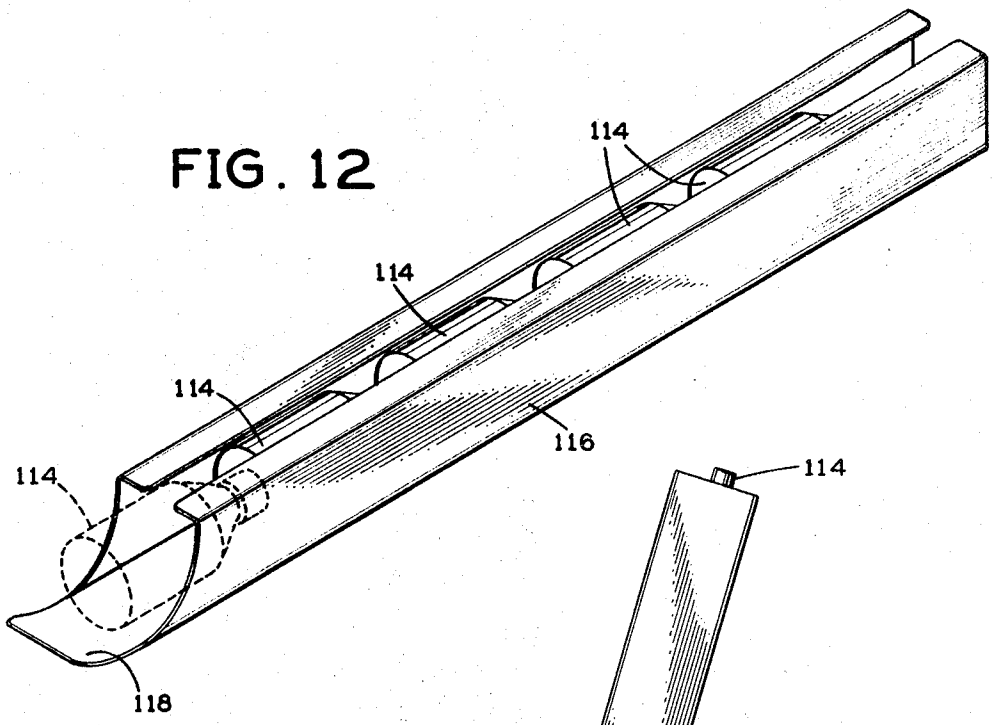
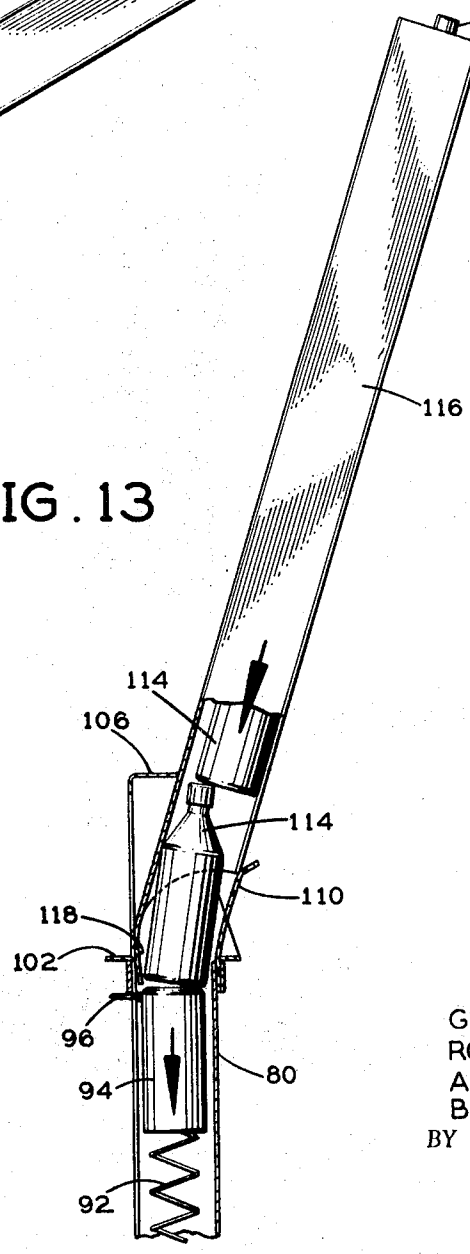


FIG. 13



INVENTORS
GEORGE R. SHELLEY
ROBERT J. SHELLEY, JR.
ARTHUR B. DIXON
BRUCE HOUSE
BY
SETTLE & OLTMAN
ATTORNEYS

CONTAINER DISPLAY AND DISPENSER

BACKGROUND OF THE INVENTION

Many beverages such as alcoholic beverages, soft drinks, mixes, and the like are sold at the present time on commercial aviation flights. These beverages are normally supplied in small bottles or cans. A number of these bottles and cans are stored in a cart which is moved up and down the aisle of the plane during sale of the beverages. The bottles or cans are usually out of sight inside the cart, so there is no display of containers to enable the customer to select the particular beverage desired by him. The storing of the bottles inside the cart poses a problem for the hostess when inventory of the containers is taken to determine the number of bottles dispensed. Also, transferring of bottles from inside the cart to the working surface on the top of the cart requires substantial manipulation of the containers which adds to the time required to handle a particular order.

It would be desirable if a container dispenser were provided for such a cart which would display containers to be dispensed to facilitate selection of a particular beverage by a customer. It would also be desirable if the containers were stored in the dispenser in such a way as to facilitate inventory accounting and to make it easier to determine how many containers have been sold on a given flight. The dispenser must be arranged such that it can be loaded and unloaded easily, and it would be desirable if the dispenser included a cartridge which could be removed from the cart for loading and unloading purposes.

OBJECTS OF THE INVENTION

Accordingly, it is an object of the present invention to provide a dispenser for dispensing beverage containers and for displaying the container to be dispensed in a manner so as to facilitate selection of particular brands of beverages by a customer.

Another object of the invention is to provide a beverage dispenser in which containers are stored and from which they can be easily dispensed, the dispenser being in the form of a cartridge which can be inserted into and removed from a beverage cart.

Another object of the invention is to provide a dispenser in which containers are urged by a biasing means in a tube against a stop spaced from the tube by the height of a container, the container being removable from under the stop for dispensing purposes.

A further object of the invention is to provide a dispensing cartridge in a beverage cart in which a large selection of bottles or other containers can be stored and displayed for sale purposes, the bottles being viewable in the cart for inventory purposes.

Another object of the invention is to provide a loader for easily loading containers into a container dispenser.

A further object of the invention is to provide a loader for a container dispenser which facilitates unloading of the dispenser when desired.

Still another object of the invention is to provide a beverage cart with a container dispenser and a flowing liquid dispenser both built into the cart along with a braking system to provide a complete dispensing service.

Other objects of this invention will appear from the following description and appended claims, reference being had to the accompanying drawings forming a part of this specification wherein like reference characters designate corresponding parts in the several views.

On the Drawings:

FIG. 1 is an elevational view, partly broken away, showing a beverage cart incorporating a dispenser in accordance with one embodiment of the invention;

FIG. 2 is a top plan view of the cart of FIG. 1;

FIG. 3 is an elevational end view of the cart of FIG. 1;

FIG. 4 is a sectional view taken along line 4—4 of FIG. 1 looking in the direction of the arrows;

FIG. 5 is a fragmentary plan view showing a portion of a dispensing cartridge included in the cart of FIG. 1;

FIG. 6 is a perspective view of one dispensing cartridge;

FIG. 7 is a perspective view of another dispensing cartridge;

FIG. 8 is a horizontal sectional view showing the bottom of the inside of the cart and particularly illustrating a braking system included in the cart;

FIG. 9 is a sectional view taken along line 9—9 of FIG. 8 further illustrating the braking mechanism;

FIG. 10 is a sectional view taken along line 10—10 of FIG. 8;

FIG. 11 is a sectional view taken along line 11—11 of FIG. 3 showing a handle for operating the braking system;

FIG. 12 shows a loader; and

FIG. 13 is a view, partly in section, showing the loader in use.

Before explaining the present invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and arrangement of parts illustrated in the accompanying drawings, since the invention is capable of other embodiments and of being practiced or carried out in various ways. Also, it is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation.

As Shown on the Drawings:

A beverage cart **20** is shown particularly in FIGS. **1**, **2** and **3**. The cart **20** includes a shell or frame **22** which forms a hollow enclosure having rectangular top, bottom, and four sides. On one side of the frame or shell **22** there are two hinged doors **24** and **26**, and there may be like doors on the other side of the cart. The cart rides on wheels **28** and there are six of these wheels **28** in this particular embodiment, the wheels **28** at the middle of the cart being larger than the end wheel as shown. The end wheels are mounted on swivels **30** so that they can turn, and the middle wheels are mounted on an axle **32** journaled in a portion of the frame **22** in the usual manner.

The top portion **34** of the cart has four slots which are not visible in FIGS. **1**, **2** and **3**, but these slots receive four dispenser cartridges **36**, **38**, **40** and **42**. The specific construction of one embodiment of these dispenser cartridges will be described later herein, but it may be noted at this time that all four of these cartridges are removable from the cart merely by sliding them up and out of the slots or receptacles in which they are received.

A liquid dispenser **44** for dispensing soda and other carbonated liquids such as soft drinks is also provided in the cart. This liquid dispenser is supplied as a commercially available unit, and the details of its construction are not a part of the present invention and so will not be described herein. The dispenser **44** includes two heads **46** and **48**, each of which has two nozzles, there being four nozzles all designated **50**. Conduits **52** lead down inside the cart **20** to a liquid storing and dispensing container (not shown) in which quantities of the soda, soft drinks or the like are stored. Any excess liquids dispensed from these nozzles **50** drain through grills **54** into a tray provided in the top portion **34** of the cart. Other trays **56**, **58** and **60** are provided at the top portion of the cart for receiving empty bottles, cloths, and other waste material.

Four self-leveling glass dispensers **62**, **64**, **66** and **68** are provided in the cart, there being two such dispensers at each end of the cart as shown in FIG. **2**. These glass dispensers each receive a stack of nested glasses, and each dispenser has a spring which automatically keeps the glass at the top of the stack in dispensing position in a known manner. Such self-leveling dispensers are known in the art and therefore are not a part of the present invention.

Inside the cart there is a braking system at **70** and cables **72** and **74** run from the braking system respectively to two handles **76** and **78** mounted on the opposite ends of the cart. As will be described in more detail later herein, when the handles **76** and **78** are both in the down or vertical position, the braking system is applied and locks the wheels **28** to hold the cart stationary. When either of the handles **76** or **78** is raised to the horizontal position as shown for handle **76** in FIG. **1**, the braking system is released, and the middle wheels **28** will turn allowing the cart to move. Thus, the brakes can be released

merely by raising the handle **76** or **78**, and the cart can be pushed or pulled along the aisle of a plane by applying force to the handle which has been raised.

FIGS. **4**, **5**, **6** and **7** illustrate the construction of the dispenser cartridges, cartridges **36** and **40** being shown in FIGS. **4**, **6** and **7**, and cartridge **38** being shown in FIG. **5**. It may be noted that cartridge **36** is larger and has considerably more capacity than the cartridge **40**. Likewise, cartridge **38** is larger than cartridge **42**. Referring first to FIG. **6**, it may be seen that the cartridge **36** has nine tubes or chutes **80** arranged vertically in side-by-side relation. The cartridge **38** also has nine of these tubes or chutes **80** of identical construction. The cartridges **40** and **42** have two of the chutes **80** of the same construction. Referring to FIG. **5**, it may be seen that each of the tubes or chutes **80** is rectangular in cross section, and is closed completely on three sides and is partially closed on the fourth side by a partial wall **82** which leaves a gap or slot at **84** running the full length of the respective tube. Since all of the tubes are constructed in the same way, no attempt has been made to differentiate the tubes of one cartridge from those of another. At the bottom of each cartridge, the tubes are welded to a retaining cap or band **84**, and in cartridges **36** and **38**, two of the tubes **80** are shorter than the others and so a separate retaining band **86** is provided. At the top ends or mouths of the tubes **80**, the tubes are welded to another retaining band **88**. Thus, the bands **84**, **86** and **88** hold the tubes in the proper side-by-side relation with the mouths of the tubes open and the lower ends of the tubes closed. The bottom wall **90** of the tubes may be seen in FIG. **4**.

Inside of each tube or chute there is a coil spring **92** having a head **94** on its upper end. Each head has a threaded stud **96** welded to it, and there may be a capnut screwed onto the stud. Each capnut and stud projects through a respective one of the slots **84** to keep the head **94** aligned inside the respective chute, and also to provide a means for depressing the head manually against the force of the spring **92** merely by pushing on the stud **96**. Of course, other forms of projections could be used other than a capnut threaded on a stud.

Secured to the top of each cartridge is a displaying frame **100**. Each displaying frame has a flange **102** at the base thereof which projects horizontally and rests on the top surface **34** of the cart so as to suspend the respective cartridge in the slot or receptacle in which it is received. Vertical posts **104** extend upward from the top of the flange **102** at opposite ends of each cartridge, and bridging these posts **104** is a horizontal stop bar **106**. The stop bar **106** is spaced from the mouths of the chutes **80** by about the height of a container to be dispensed from the chute so that each container will be visible in the space under the stop bar **106**. On one side of the space, a transparent window **108** may be mounted to retain the upper container in the frame on that side. On the other side of the frame **100**, a resilient blade type spring **110** is provided, and this spring normally bears against each of the containers at the displaying frame to hold that container in the frame. However, as shown in FIG. **4**, the spring **110** has finger portions opposite each chute, and these finger portions may be bent merely by pulling on the bottle at the top of the respective chute so as to release the bottle to be removed from the cartridge.

As is apparent from the foregoing description, a stack of containers such as bottles is stored in each of the chutes **80**. The spring **92** urges the stack upwardly and specifically urges the top container **112** against the stop member **106**. Thus, the spring **92** holds the whole stack of containers against the stop **106**. The upper container cannot be removed in one direction because the window **108** blocks access. However, there is space above the spring **110** for a person to reach in with the fingers and pull the container **112** toward the spring **110** as shown in FIG. **4** by dashed lines, and thus release the bottle from the stop **106** so that the bottle may be pulled out of the cartridge. The spring **92** the urges the stack of containers upwardly so that the next lower container **114** is pushed against the stop **106** in displaying and dispensing position.

Both the window **108** and the entire spring **110** are preferably transparent so that a customer may easily view all of the bottles at the top of the dispenser cartridge. If each chute contains a different brand of beverage, a selection of beverages will be displayed at the top of each cartridge, and the customer may view the selection of beverages and indicate which one he wishes to purchase. The spring **110** is preferably made of a transparent plastic material such as "Lexan."

At the end of the flight, the doors **24** and **26** may be opened, and the hostess on the airplane can count the bottles remaining in the cartridges. The number of bottles remaining can be subtracted from the initial stack of bottles to determine how many have been sold. This represents an easy way to take inventory of the bottles at the end of each flight. For loading and unloading purposes, the cartridges **36**, **38**, **40** and **42** may be removed from the cart and transferred to a beverage control space such as may be required particularly for the dispensing of alcoholic beverages. Containers can be loaded into and unloaded from the cartridges in the manner illustrated in FIGS. **12** and **13**. The tube **116** having a curved end **118** is merely inserted in the mouth of each cartridge. The tube **116** is approximately as long as any one of the tubes **80**, so a stack of containers can be stored in the tube **116** equal to the height of a stack in one of the chutes or tubes **80**. When the curved end **118** is inserted in the space between the spring **110** and the stop **106** of any one of the cartridges as shown in FIG. **13**, the spring **110** is released and bottles can then be either pushed into the cartridge or removed from the cartridge depending upon which is desired. If bottles are being removed, the tube **116** would initially be empty, and the head **94** would be held and allowed to rise gradually so as to push the stack of bottles from the cartridge into the loader tube **116**. Conversely, if bottles are to be loaded, a tool or one's finger is pushed against the stack of bottles in the tube **116** to push the bottles through the open mount at end **118** of the tube **116** and into the cartridge against the force of the spring **92**.

FIGS. **8**, **9**, **10**, and **11** show a braking system included in the cart **20**. There are two plates **130** and **140** which are respectively hingedly connected to supports **142** and **144** mounted on the bottom of the cart. Springs **146** and **148** are stretched between the two plates **130** and **140** and tend to pivot the plates downwardly so that their edges bind against the wheels **28**. As shown in FIG. **9**, a rotary shaft **150** extends transversely under the plates **130** and **140**, and it may be seen that the plates **130** and **140** are angle plates. The shaft **150** may be journaled in blocks **152** and **154** mounted on the bottom of the cart. Mounted on the shaft **150** are two cams **156** and **158** which engage the inner edges of the angle plates **130** and **140**. When the brakes are applied, the cams **156** and **158** are positioned so as to lower the inner edges of the angle plates **130** and **140**.

A crossmember **160** is connected by the cables **72** and **74** to the handles **76** and **78** respectively. When either of the handles **76** or **78** is raised as described previously, one of the cables is pulled to move the cross member **160** downward as viewed in FIG. **8**. The crossmember **160** is urged by springs **162** upward as viewed in FIG. **8**. The crossmember **160** is secured to the shaft **150** in the manner shown in FIG. **10**. When the cable **72** or **74** is pulled, the crossmember **160** pivots and rotates the shaft **150**, and this raises the cams **156** and **158** to move the angle plates **130** and **140** away from the wheels **28**, thus releasing the brakes. Of course, when the handle **76** or **78** is lowered, the brakes are restored to the brakes-on position.

FIG. **7** shows that the upper end of the cable **72** (and likewise the cable **74**) is wrapped around a stud shaft portion of the handle **76** in a manner such that when the handle **76** is lowered, the cable is released to apply the brakes and when the handle is raised, the cable tends to be wound up on the stud shaft to pull the cable and thus release the brakes.

From the foregoing description, it is apparent that the invention provides a dispenser which facilitates the dispensing of beverages, particularly in connection with commercial air-

line flights where the dispenser may be incorporated in a cart that may be moved up and down the aisles of the airplane. The dispenser may be in the form of a cartridge which is removable from the cart for loading and unloading purposes. The dispenser may be inventoried while it is still in the cart or may be inventoried after it has been removed from the cart. The dispensing action of the unit is simple and reliable. The dispenser has the important function of displaying the uppermost containers in the dispenser so that a variety of containers are presented to the customer, and the customer may select the particular brand of beverage he wishes to purchase by viewing this display. Containers may be easily loaded into or unloaded from the dispenser cartridge by the use of a loader tube as described. The container dispenser may be used in conjunction with a flowing liquid dispenser, and the two types of dispensers are completely compatible with each other in the cart described herein. The cart also has a braking system which particularly adapts it for use on a moving vehicle such as an airplane, but it is to be noted that the cart could be used in other applications such as busses, and it could be used in homes to provide a portable bar as well as in other applications.

Having thus described our invention, we claim:

1. A dispenser comprising a tube for holding a stack of containers, a stop spaced from one end of said tube by about the height of a container, a spring in said tube for urging the stack of containers toward said stop and to urge the end container against said stop such that the end container may be viewed and also may be removed from said tube with said spring pushing another container against said stop, see-through retainer means at one side of said stop for retaining the end container in said space, and spring means at the other side of said stop partially covering said space for holding the end container in said space in viewable condition and allowing containers to be removed from said space.

2. The dispenser as claimed in claim 1 including a loader in the form of a tube insertable in the end of said first named tube under said stop, said loader tube carrying containers for loading into or unloading from said first named tube.

3. The dispenser as claimed in claim 1 in which said first named tube has an opening lengthwise thereof for enabling the contents of said tube to be inventoried.

4. A beverage dispenser for displaying and dispensing of beverage containers, said dispenser comprising,

a. a cart movable on rolling means and having an open topped receptacle therein for receiving a cartridge,
b. a cartridge in said receptacle and removable therefrom, said cartridge including an elongated chute for receiving containers and displaying frame at a top end of said chute having a stop,
c. biasing means in said chute for urging a stack of containers upwardly in said chute and to bias the uppermost container against said stop in a position wherein that container may be viewed and also removed from said display frame manually,
d. a spring retained at said frame to hold a container in said frame and yieldable to allow said container to be removed from said frame, and
e. a loader in the form of a tube having an end insertable in said frame at said spring to release said spring, said tube carrying containers for loading into or unloading from said chute.

5. The beverage dispenser as claimed in claim 4 in which said chute has an opening lengthwise thereof to facilitate inventorying of the containers.

6. The beverage dispenser as claimed in claim 4 including braking means for said cart including an actuator available to the user for releasing and applying said braking means.

7. The beverage dispenser as claimed in claim 4 in which said tube has a curved end to facilitate positioning said tube at an angle to said chute during loading or unloading.

8. A beverage dispenser for displaying and dispensing of beverage containers, said dispenser comprising,

a. a cart movable on rolling means and having a hollow interior with doors on one side thereof, said cart having a top portion with an opening therein leading into the interior of said cart adjacent said doors,
b. a cartridge in said cart fitting in said opening and removable therefrom, said cartridge comprising a plurality of elongated chutes retained in side-by-side relation with an open displaying frame bridging the top ends of said chutes and projecting up from said opening,
c. said displaying frame having a stop spaced upwardly from the mouths of said chutes to retain containers in viewable positions,
d. each said chute having biasing means therein for urging a stack of containers upwardly and to urge the uppermost container against said stop,
e. transparent retainer means on one side of said frame, and
f. transparent spring means partially covering said displaying frame on the other side thereof for holding containers in said frame in viewable condition and allowing containers to be removed from said frame.

9. The beverage dispenser as claimed in claim 8 including a loader in the form of a tube having an end insertable in said frame at said spring means to release said spring means, said tube carrying containers for loading into or unloading from said chute.

10. A beverage for displaying and dispensing of beverage bottles, said dispenser comprising,

a. a cart movable on wheels,
b. brake means in said cart having an actuating portion movable to apply and release said brake means relative to said wheels,
c. a handle mounted on said cart,
d. linkage means operatively connecting said handle to said actuating portion and applying said brake means to hold said cart stationary,
e. said handle being movable to actuate said linkage means to release said brake means,
f. a cartridge in said cart and removable therefrom, said cartridge including a plurality of chutes for receiving containers and an open displaying frame at top ends of said chutes having a stop, and
g. biasing means in each said chute for urging a stack of containers upwardly in such chute and to bias the uppermost container against said stop in a position wherein that container may be removed from the display portion manually.

11. The beverage dispenser as claimed in claim 10 in which said cartridge has a spring retained at said frame to hold a container in said frame while being yieldable to allow said container to be removed from said frame.

12. The beverage dispenser as claimed in claim 11 including a loader in the form of a tube having an end insertable in said frame at said spring to release said spring, said tube carrying containers for loading into or unloading from said chute.

13. The beverage dispenser as claimed in claim 12 in which said tube has a curved end to facilitate positioning said tube at an angle to said chute during loading or unloading.

14. A beverage dispenser comprising a plurality of elongated chutes retained side-by-side, a displaying frame bridging the mouths of said chutes at one end thereof, said frame having a stop spaced from said mouths to retain containers in viewable positions, each said chute having biasing means therein for urging a stack of containers upwardly in said chute and to urge the uppermost container against stop, transparent retainer means for retaining containers at one side of said frame, and spring means partially covering the other side of said frame for holding a container in said frame but yielding to allow removal of said container from said frame.

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