

June 24, 1958

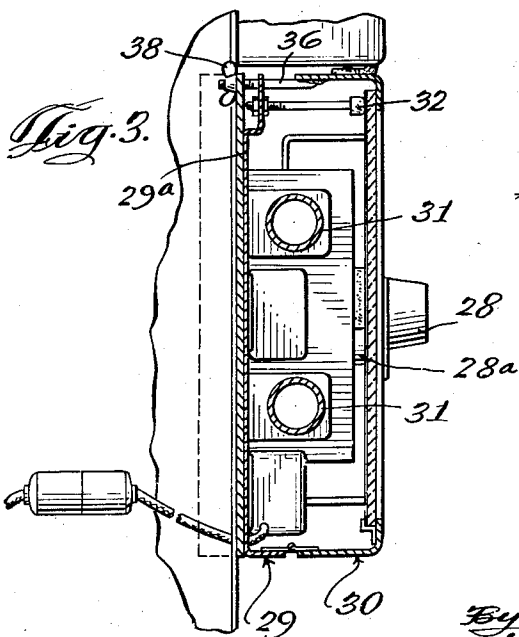
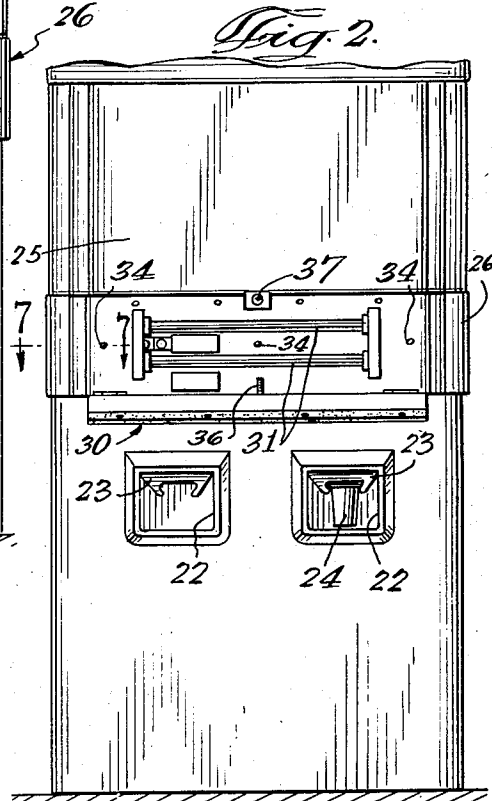
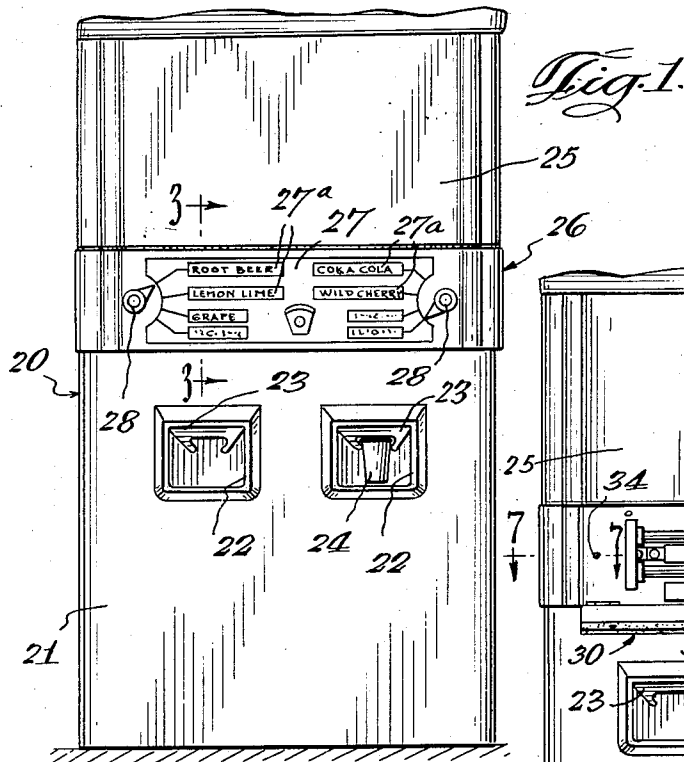
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2,840,274

BEVERAGE DISPENSING APPARATUS

Filed June 6, 1955

4 Sheets-Sheet 1



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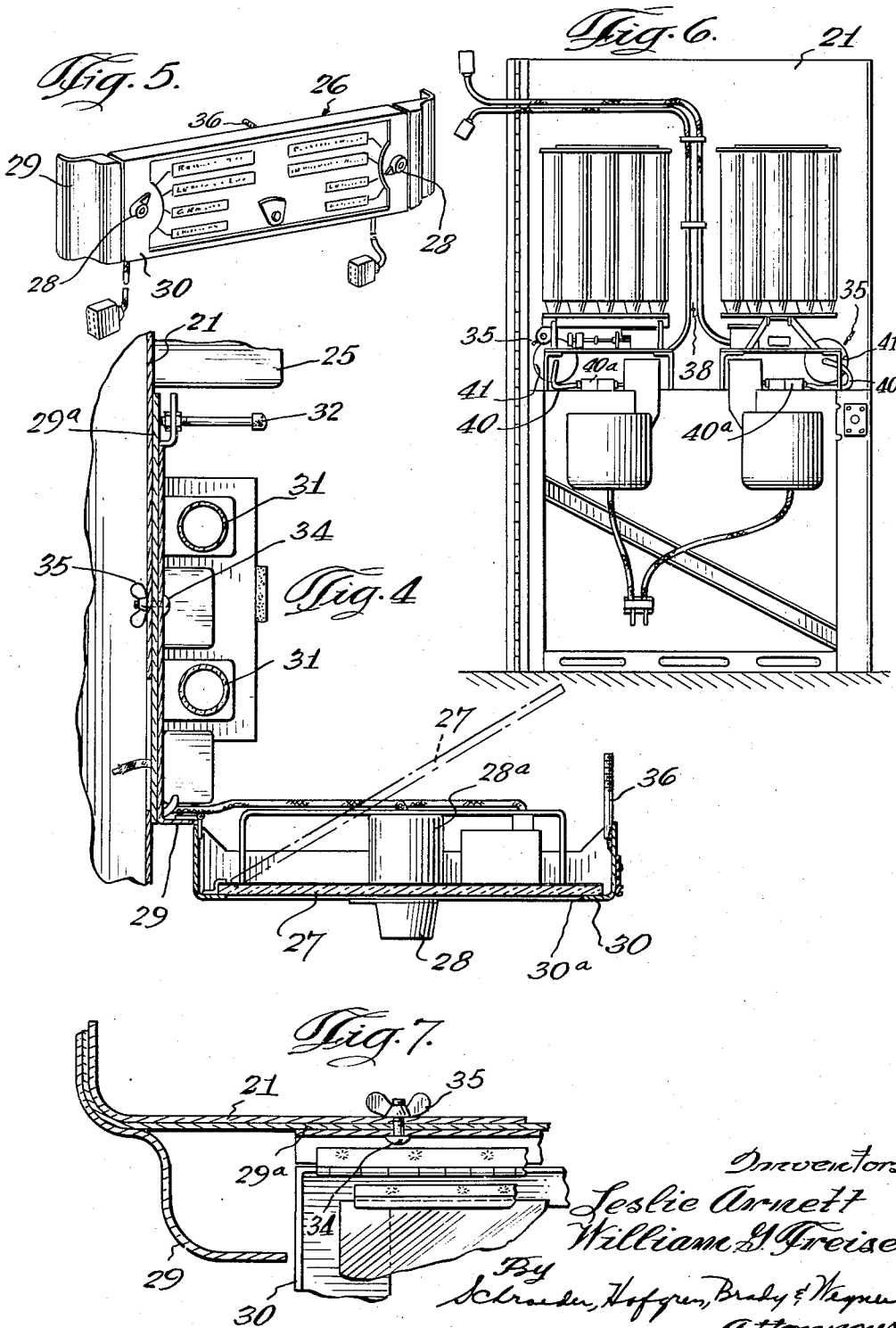
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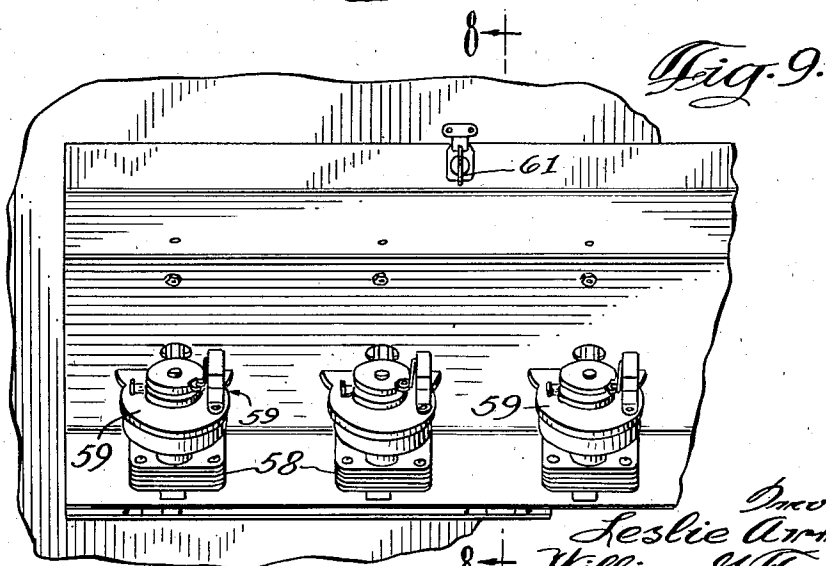
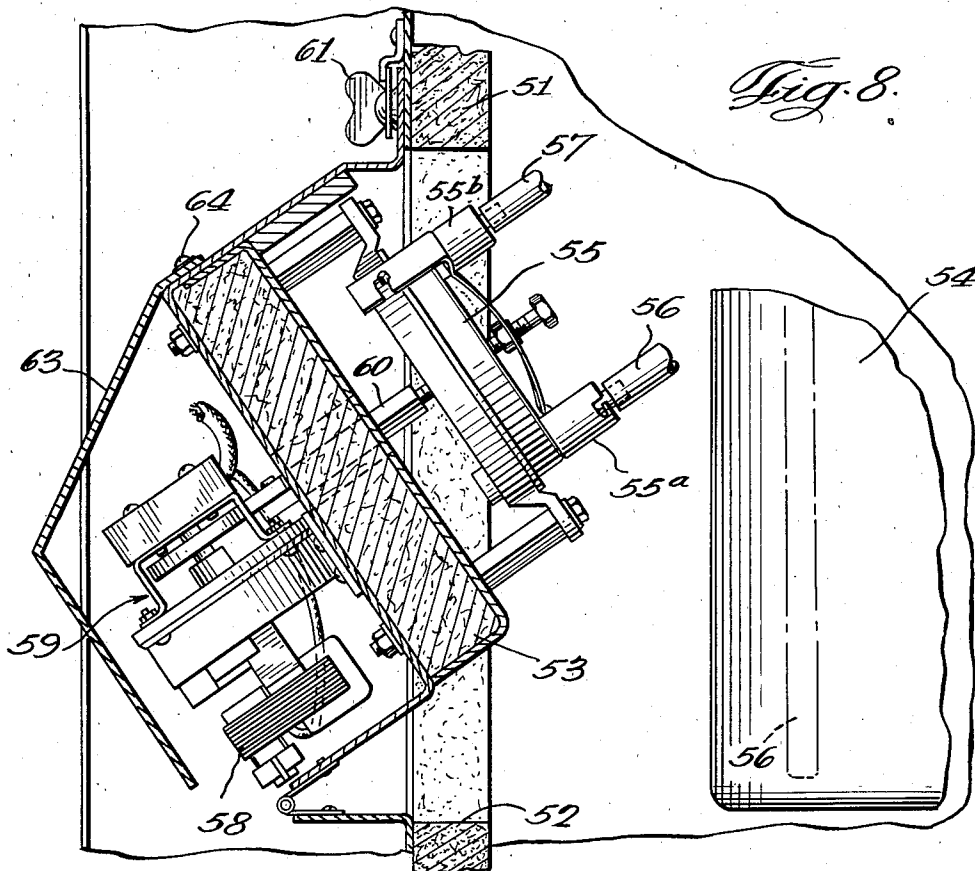
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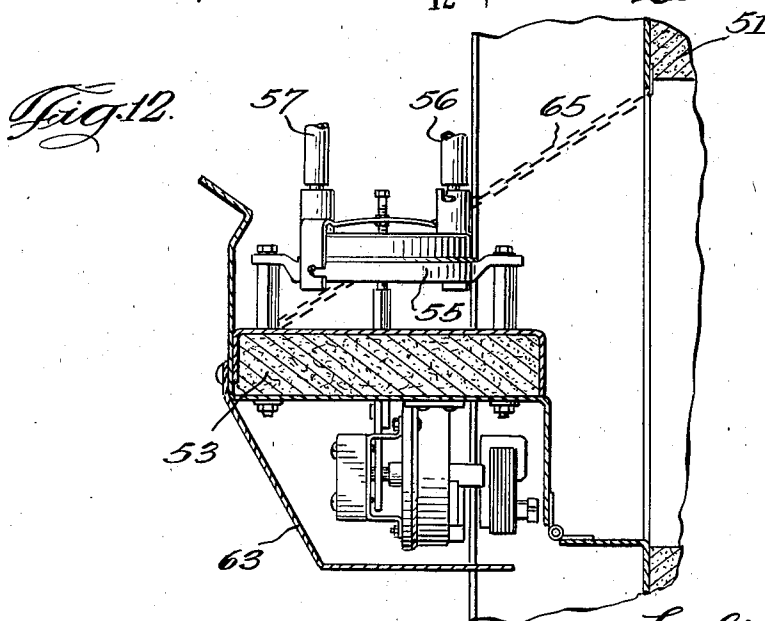
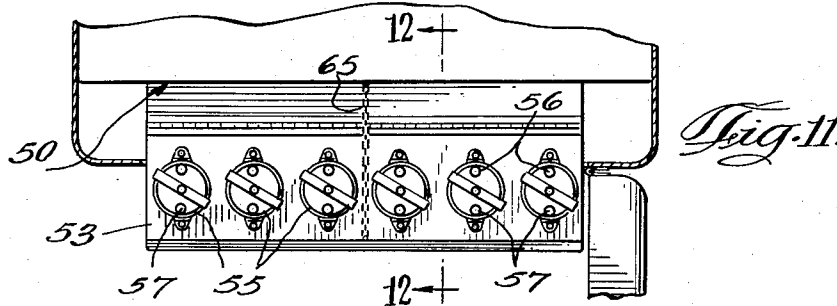
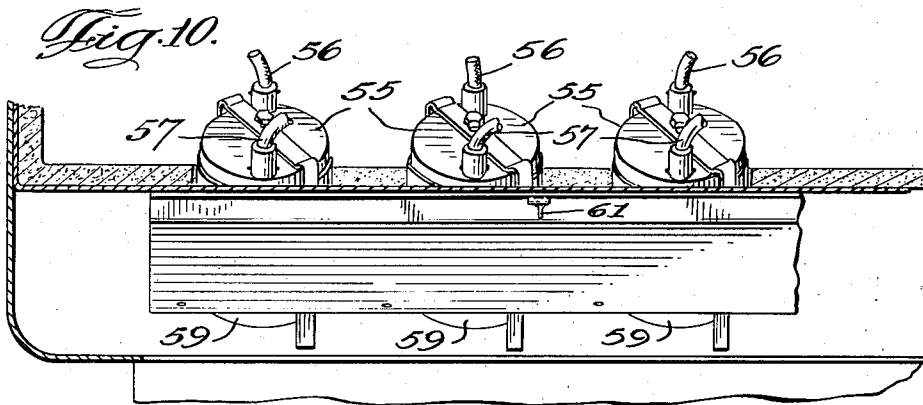
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2,840,274

BEVERAGE DISPENSING APPARATUS

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Application June 6, 1955, Serial No. 513,461

2 Claims. (Cl. 222-135)

This invention is concerned with beverage dispensing apparatus and more particularly with coin-operated beverage dispensing machines.

Coin-controlled beverage dispensing machines of many types are known and used quite widely in this country. They are generally located in the lobbies of theaters, at bus, railway and airline terminals, in factories and in other locations where large groups of people have access to them. Such beverage machines provide the public with their favorite beverages without the necessity of maintaining a lunch counter or the like having large beverage storage facilities and attendants to handle beverage customers.

In most areas beverage dispensing machines of this nature are operated and maintained by a service organization which leases or otherwise arranges for the space for the machine with the theater owners, management of the various terminals or the like. Servicemen make periodic checks of the machines, as once every two or three days or week, replenish the supplies of cup and beverage ingredients and check the operation of the machine. Each serviceman is generally responsible for the maintenance of a large number of machines, often at widely separated locations. In order to facilitate proper servicing of the machines, it is desirable that those elements which may require frequent attention be readily accessible.

It is a principal object of this invention to provide a novel structure in which normally difficult-to-get-at parts are made readily accessible.

One feature is that a display assembly for use in a cabinet having a wall is provided, comprising a frame including frame portions movable with respect to each other and having an open front, a transparent display sign carried in the open front of the frame, a light source carried by the frame and readily detachable connectors securing the frame portions together and to the wall of the cabinet, release of part of the connectors permitting movement of the frame portions with respect to each other providing access to both the light source and display sign, and release of all of the connectors permitting removal of both of the frame portions from the wall.

Another feature is the provision of a display comprising a frame having a rear panel with an opening therein and an open front, a transparent display sign carried in the open front of the frame, a source of light mounted on the rear panel, an electrical cable connected to the light and extending through the opening in the rear panel into the cabinet and having a separable connector at the end thereof, and readily detachable connectors securing the frame to the wall of the cabinet with the rear panel in engagement therewith. A further feature is that the second frame member is pivoted to the first and that a transparent display sign is removably carried in the open front of the second frame member, release of part of the connectors securing the frame members to the wall permitting the second frame member to be pivoted on the first

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allowing removal of the sign and providing access to the light source.

Another feature is the provision, in a beverage dispensing machine having a refrigerated ingredient housing, of ingredient handling apparatus, comprising a panel forming a part of the housing and movable between closed and open positions, a pump for transferring the ingredient from the housing to a beverage dispensing point and mounted on the panel, the pump being positioned with the housing when the panel is in closed position and being readily accessible when the panel is in open position. Still a further feature is that a motor is mounted on the panel opposite the pump and operably connected thereto, the motor being readily accessible when the panel is in closed position.

And a further feature is that the panel is pivotally mounted on the housing for movement between closed and open positions, a plurality of pumps, one for each of a plurality of beverage ingredients, are mounted on one side of the panel and positioned within the refrigerated housing when the panel is in closed position, a plurality of motors, one for each pump, are mounted on the side of the panel opposite the pumps and operably connected therewith, the motors being readily accessible when the panel is in closed position and stop means are provided for limiting the movement of the panel toward open position with the pumps in readily accessible position.

Further features and advantages will readily be apparent from the following specification and from the drawings, in which:

Figure 1 is a front elevational view of the cabinet of a beverage dispensing machine;

Figure 2 is a view similar to Figure 1 with a portion of the display apparatus carried by the machine opened;

Figure 3 is a sectional view taken along line 3-3 of Figure 1;

Figure 4 is a view similar to Figure 3 but with the display arrangement shown in open position;

Figure 5 is a perspective view showing the display assembly removed from the machine;

Figure 6 is an elevational view of the rear surface of the door of the machine;

Figure 7 is a fragmentary sectional view taken along line 7-7 of Figure 2;

Figure 8 is a fragmentary sectional view of the ingredient pump mounting taken along line 8-8 of Figure 9;

Figure 9 is a fragmentary front elevational view looking from the left of Figure 8;

Figure 10 is a fragmentary top plan view of the ingredient pump mounting arrangement;

Figure 11 is a reduced view similar to Figure 10 with the movable panel open exposing the ingredient pumps; and

Figure 12 is a sectional view taken substantially along line 12-12 of Figure 11.

Beverage dispensing machines of the character with which the present invention is particularly concerned generally include supplies of one or more flavored syrups together with a water supply, as a connection to a water main, the water generally being passed through a cooler and a carbonator and then mixed with one or more of the flavored syrups under the control of electrical circuits. The resulting beverage is dispensed in a paper cup, also furnished from a supply in the machine. Certain features of the present invention are applicable not only to carbonated beverage machines with which they are disclosed herein, but also with other types of dispensing machines, as the coffee dispensing machine disclosed in copending Arnett application, Serial No. 336,563, filed February 12, 1953, now Patent No. 2,761,200.

The operation and many of the details of the construction of the carbonated beverage dispenser shown herein will not be discussed in detail as they are not pertinent to the present invention. However, further details of such a machine may be found in copending Arnett and Freise application, Serial No. 487,834, filed February 14, 1955.

Turning now to Figures 1-7 of the drawings, a beverage dispensing machine is shown including a cabinet 20 which has a door 21 in which are provided a pair of service openings 22, one on either side of the machine. Positioned within the service openings are cup support fingers 23 adapted to receive and hold a cup 24 from a supply within the machine while the cup is being filled with the desired beverage ingredient.

The upper section of door 21 of the dispenser cabinet may carry a suitable advertising display as indicated at 25. Centrally mounted on the door and extending thereacross is a frame indicated generally as 26 and which carries a display 27 bearing indicia 27a representative of the beverages available from the machine. At either end of the frame 26 are provided selectors 28 which are keyed with the indicia 27a and electrically connected with the dispensing control circuits permitting the customer to select the drink he desires.

Frame 26 includes first and second frame sections 29 and 30. Frame section 29 includes a rear panel 29a on which are mounted a pair of light sources, as fluorescent tubes 31, together with the associated starting elements and ballast. Second frame member 30 is pivotally secured to first frame member 29 along the lower edge thereof to open downwardly. The front of frame section 30 is cut away at 30a to provide an opening through which translucent display member 27 is visible. As shown in Figure 4, display member 27 may readily be removed from frame section 30, when in open position, by merely lifting it out. Rubber-tipped buffers 32 hold display member 27 in upright position when frame section 30 is closed.

Rear frame member 29 is mounted on the door 21 of the dispensing apparatus cabinet by studs 34 and wing nuts 35. A threaded stud 36 is secured to the upper portion of second frame section 30 and, when this frame section is in closed position, projects through an opening 37 (Fig. 2) in the cabinet door 21. A wing nut 38 secures the second frame member in closed position.

A pair of electrical cables 40 extend through openings in the panel 29a and are connected to the electrical circuits within the cabinet, providing power for the lights 31 and connecting selector switches 28a to the dispensing circuits. Connectors 40a at the ends of the cables permit separation of the display from the machine.

Removal of wing nut 38 permits second frame member 30 to be pivoted downwardly providing access to fluorescent tubes 31 and display sign 27 permitting adjustment and replacement as necessary. If a major failure should develop in the display unit which cannot readily be corrected in the field, as failure in the switch mechanism 28a associated with beverage selector 28 or in the ballast units associated with the fluorescent lamps 31, it is desirable to remove the entire display assembly 26 and replace it with a substitute assembly so that the defective unit may be repaired. This is readily accomplished with the display of this invention by first disconnecting the plug-type electrical connectors 40a and then removing all three wing nuts 35 and 38. It should be noted that openings 41 in door 21 through which cables 40 extend are large enough to permit passage of connectors 40a.

Turning now to Figures 8-12, portions of the interior of the machine are shown including a refrigerated housing 50 having an insulated front wall 51. An opening 52 is provided in the wall 51 and is closed by an insulated panel 53 which is pivotally secured to the wall along the lower edge of the opening. The refrigerated

housing 50 normally contains supplies of the various beverage ingredients, as syrup container 54, there being one for each syrup in a multiple drink machine, a water cooler and a carbonator (not shown). A plurality of syrup pumps 55, one for each of the syrups available in the machine, are mounted on the inner surface of panel 53. The pumps herein shown are of the diaphragm type and the structure thereof is fully described in copending Arnett and Freise application, Serial No. 504,492, filed April 28, 1955.

An inlet connector 55a on the pump 55 has connected thereto a plastic conduit 56 which is inserted into the container 54 of flavored syrup while pump outlet connector 55b has connected thereto a plastic conduit 57 through which the syrup is delivered to a cup 24 positioned in the service opening of the machine.

Mounted on the outer surface of movable panel 53 are electric motors 58 and associated mechanical drive mechanisms 59 which are connected by operating arms 60, extending through the panel 53, to the pumps 55 to effect operation thereof. A plate 63 is secured to panel 53 by screws 64 and extends over the motors and drive mechanisms, protecting them, but is readily removable permitting a serviceman to work on the motors.

In normal operation panel 53 will be secured in closed position by means of releasable clamps 61, the syrup pumps 55 being positioned within the refrigerated cabinet. Motors 58 and drive mechanisms 59 are readily accessible to the serviceman (after removing cover 63) for adjustment of the "throw" or amount of syrup delivered on each operation of the pump. When retainers 61 are released, panel 53 is pivoted outwardly about its lower edge to a horizontal position as shown in Figure 12, in which position pumps 55 are readily accessible and may easily be removed from the machine. A chain 65 is secured to cabinet wall 51 and to panel 53 acting as a stop, limiting movement of the panel to a position in which the panel and the pumps 55 are generally horizontal.

While we have shown and described certain embodiments of our invention, it is to be understood that it is capable of many modifications. Changes therefore, in the construction and arrangement may be made without departing from the spirit and scope of the invention as disclosed in the appended claims.

We claim:

1. In a beverage dispensing machine having ingredient containing means in a refrigerated ingredient housing, ingredient handling apparatus of the character described, comprising: a panel forming a part of said housing and movable between closed and open positions; yieldable conduit means in the housing for conducting ingredient from the containing means; and a pump associated with the conduit means for transferring said ingredient from said containing means through said housing to a beverage dispensing point and mounted on said panel, said pump being positioned within said housing when said panel is in closed position and being readily accessible when said panel is in open position while maintaining its association with the conduit means.

2. In a beverage dispensing machine having a refrigerated ingredient housing containing a plurality of beverage ingredient containers, ingredient handling apparatus of the character described, comprising: a panel forming a part of said housing and pivotally mounted for movement between closed and open positions; a plurality of pumps, one for association with each of said beverage ingredient containers, and mounted on one side of said panel, said pumps being positioned within said refrigerated housing when said panel is in closed position; a plurality of plastic conduits, one each connecting each correlated pump and container in both the closed and opened positions of said panel, a plurality of motors, one for each pump, mounted on the side of said panel opposite said pumps and operably connected therewith, said motors being

readily accessible when said panel is in closed position; and stop means for limiting the movement of said panel toward open position with said pumps in readily accessible position.

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