

Feb. 3, 1959

R. T. CORNELIUS

2,871,675

BEVERAGE COOLER AND DISPENSER

Filed Jan. 25, 1957

4 Sheets-Sheet 1

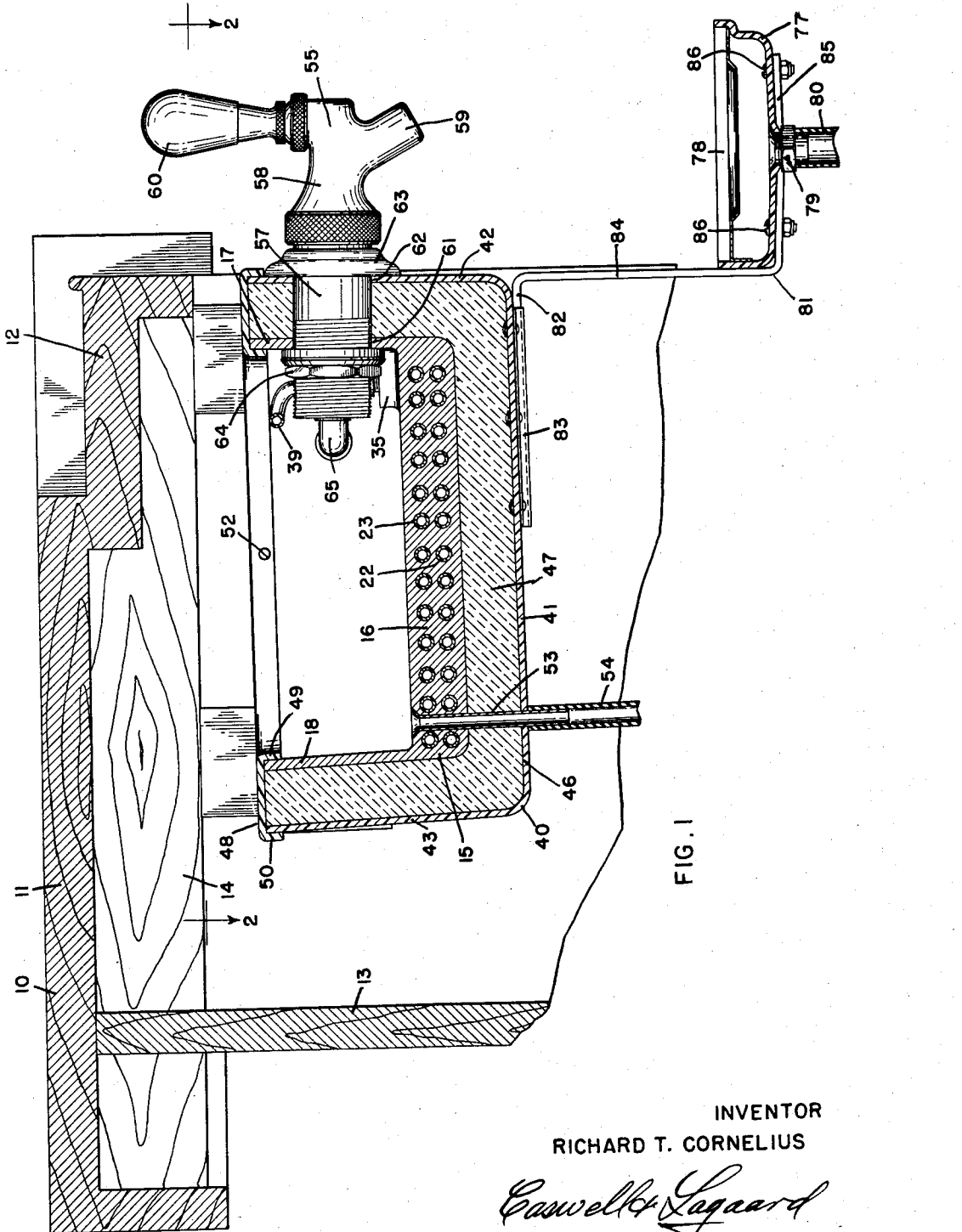


FIG. 1

INVENTOR
RICHARD T. CORNELIUS

Caswell & Lagaard
ATTORNEYS

Feb. 3, 1959

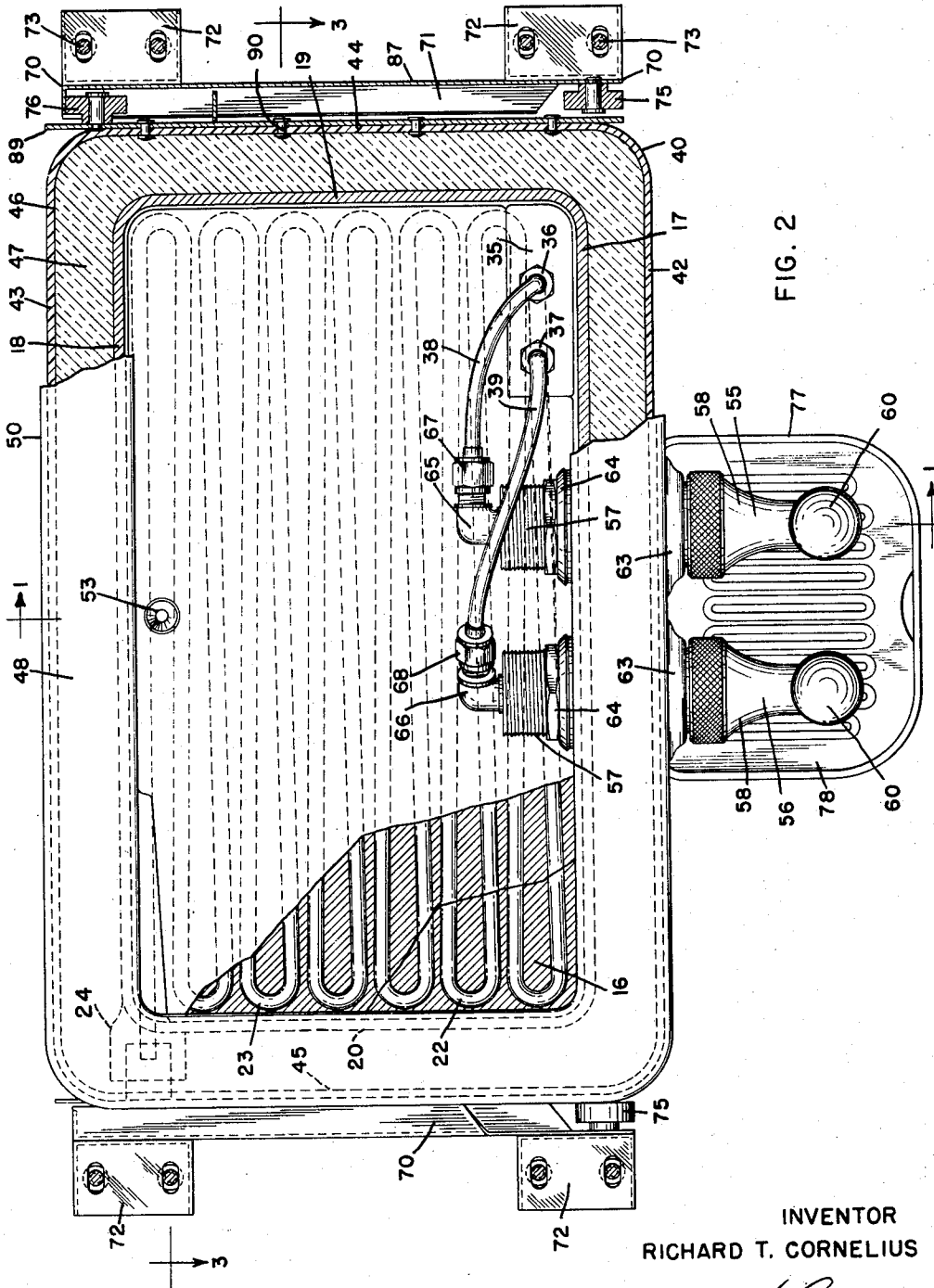
R. T. CORNELIUS

2,871,675

BEVERAGE COOLER AND DISPENSER

Filed Jan. 25, 1957

4 Sheets-Sheet 2



INVENTOR
RICHARD T. CORNELIUS

Carwell & Lugaard
ATTORNEYS

Feb. 3, 1959

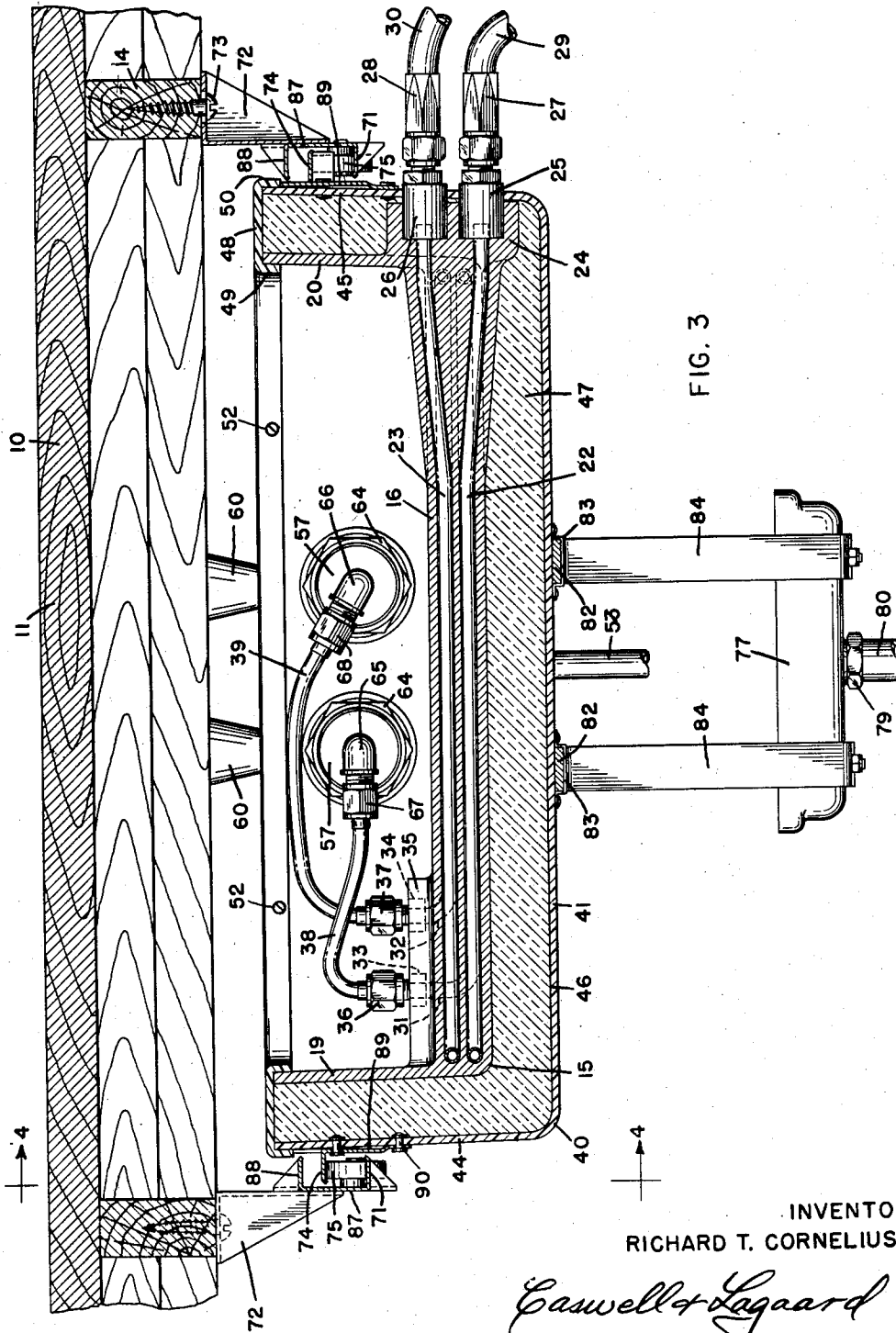
R. T. CORNELIUS

2,871,675

BEVERAGE COOLER AND DISPENSER

Filed Jan. 25, 1957

4 Sheets-Sheet 3



INVENTOR
RICHARD T. CORNELIUS

Caswell & Lagaard
ATTORNEYS

Feb. 3, 1959

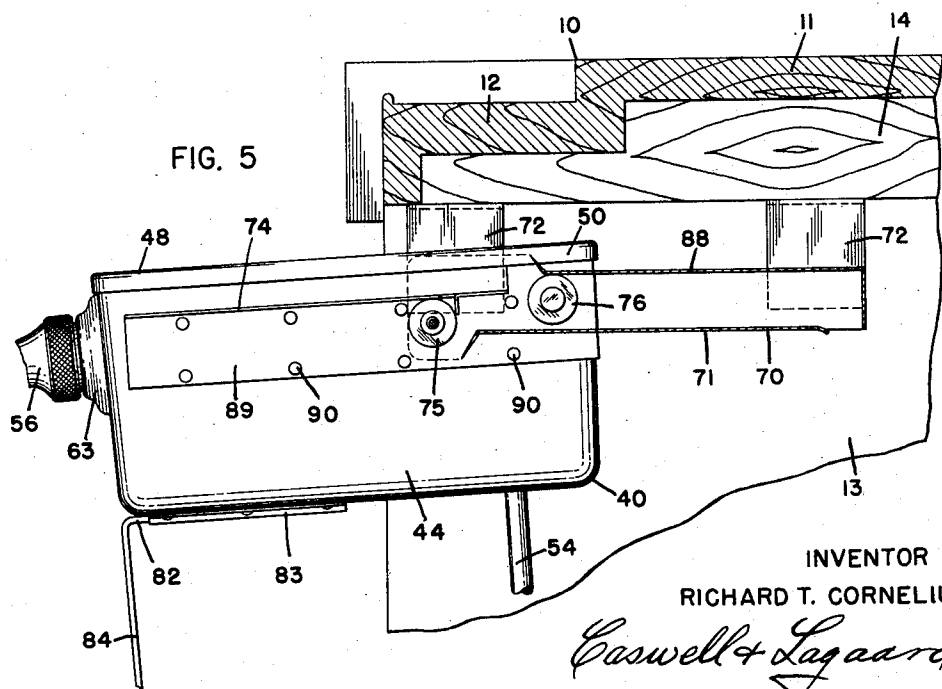
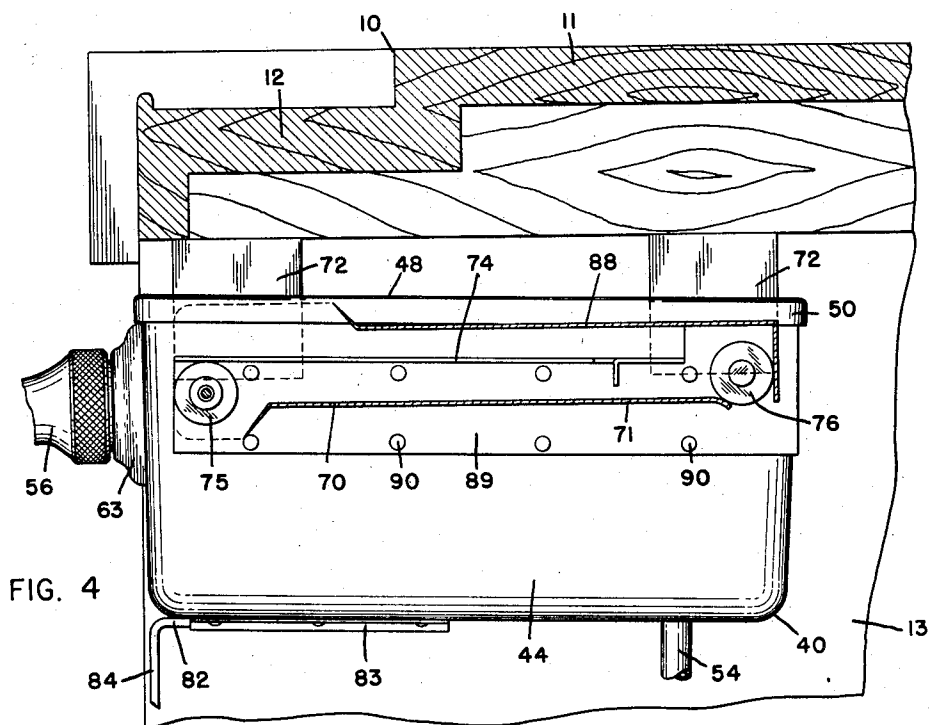
R. T. CORNELIUS

2,871,675

BEVERAGE COOLER AND DISPENSER

Filed Jan. 25, 1957

4 Sheets-Sheet 4



INVENTOR
RICHARD T. CORNELIUS

Caswell & Lagaard
ATTORNEYS

1

2,871,675

BEVERAGE COOLER AND DISPENSER

Richard T. Cornelius, Minneapolis, Minn.

Application January 25, 1957, Serial No. 636,274

8 Claims. (Cl. 62—258)

The herein disclosed invention relates to beverage coolers and dispensers and has for an object to provide a self-contained dispenser in which a receptacle for a refrigerant, a faucet, and drain and supporting means therefor are all combined in a single unit.

Another object of the invention resides in providing a dispenser having rapid heat transfer so as to quickly cool the beverage.

A still further object of the invention resides in providing a dispenser in which a solid refrigerant may be used.

A further object of the invention resides in constructing the receptacle for the refrigerant as a drawer, open at the top, and which may be installed in a counter or bar open at the back, and which may be pulled out to permit of refilling the refrigerant as the same is consumed and which may be closed to enclose the refrigerant.

Another object of the invention resides in attaching the faucet and a drain to the drawer and in providing flexible hose connected to said faucet and drain and to a source of beverage under pressure and to a waste disposal system.

A still further object of the invention resides in providing rails attached to the counter and in providing means attached to the drawer and engaging said rails and supporting said drawer for sliding movement transversely of the counter.

An object of the invention resides in constructing the drawer from cast aluminum and with side walls, end walls and a bottom, and in embedding within said bottom a coil constructed of a suitable heat conducting material and connected to said faucet and a source of beverage under pressure.

Another object of the invention resides in disposing the drawer within a case having side and end walls and a bottom spaced from the side and end walls and bottom of the drawer with insulating material therebetween.

Another object of the invention resides in attaching a drip shelf and the rail engaging means to said case.

Other objects of the invention reside in the novel combination and arrangement of parts and in the details of construction hereinafter illustrated and/or described.

Fig. 1 is a cross-sectional view of a counter or bar with the instant invention mounted thereon and taken on line 1—1 of Fig. 2.

Fig. 2 is a plan sectional view of the invention taken on line 2—2 of Fig. 1.

Fig. 3 is an elevational-sectional view taken on line 3—3 of Fig. 2.

Fig. 4 is a transverse sectional view taken on line 4—4 of Fig. 3.

Fig. 5 is a view similar to Fig. 4 drawn to a lesser scale and showing the drawer in extended position.

For the purpose of illustrating the invention, a portion of a bar or counter 10 has been shown, which consists of a counter top 11 having a depressed portion 12 on which the glasses may rest. The counter top 11 is sup-

2

ported on a wall structure 13, only a portion of which has been shown, and the counter is open at the rear. Extending across the under side of the top 11 are cleats 14 which are secured thereto and to the wall structure 13.

The invention proper consists of a drawer 15 preferably constructed of cast aluminum and which has a bottom 16, front and rear end walls 17 and 18, and side walls 19 and 20. The bottom 16 is relatively thick and has cast in it two serpentine coils of tubing 22 and 23. The said coils are arranged in layers, the coils 22 being lowermost and the coil 23 overlying the coil 22. These coils are cast into the bottom and thus embedded into the same to form intimate heat conducting relation with respect thereto. On the exterior of the end wall 20 is formed a boss 24 which has embedded in it tube fittings 25 and 26. The fitting 25 has connected to it one end of the coil of tubing 22 while the fitting 26 has connected to it one end of the coil 23. These fittings serve as inlets to the respective coils and connectors 27 and 28 screwed on said fittings serve to connect flexible hose 29 and 30 to the fittings 25 and 26. These hose are connected to receptacles for beverage under pressure which are disposed within the counter 10 and below the invention proper and which direct beverage into the two coils 22 and 23. If desired, different beverages may be dispensed through the two coils.

The other ends 31 and 32 of the coils 22 and 23 are bent upwardly and are connected to tube fittings 33 and 34 which are embedded in a boss 35 case integral with the bottom 16 and disposed within the interior of the drawer 15. The fittings 33 and 34 have attached to them connectors 36 and 37 by means of which flexible tubes 38 and 39 may be attached to said fittings.

The drawer 15 is mounted within a case 40 having a bottom 41, front and rear end walls 42 and 43 and side walls 44 and 45. This case is slightly larger than the drawer 15 and the walls and bottom thereof are spaced from the walls and bottom of the drawer 15 to provide a space 46 therebetween. In this space is disposed suitable insulating material 47 such as spun glass or mineral wool or the equivalent. The case 40 is preferably constructed from sheet metal and formed in the desired shape to fit the drawer 15. Extending about the upper edges of the drawer 15 and the case 40 is a rim 48 which overlies said edges and closes the space 46. This rim has flanges 49 and 50, the flange 49 extending downwardly along and fitting against the inner surface of the walls of the drawer 15 and the flange 50 fitting along the outer surfaces of the walls of the case 40. If desired, the flange 50 and case 40 may be constructed of plastic material. Screws 52 extending through the flange 49 and into the walls of the drawer 15 hold the same in proper relation with respect to the case 40. The fittings 25 and 26, previously referred to, extend through the wall 45 of the case.

Cast in the bottom 16 of drawer 15 is a drain pipe 53 which communicates with the interior of the drawer. This pipe extends through the insulation 47 and through the bottom 41 of the case 40. A flexible tube 54 is connected to the protruding end of the pipe 53 and is in turn connected to a suitable drain.

Mounted on the front wall 17 of drawer 15 are two faucets 55 and 56. These faucets may be of conventional construction and are provided with threaded shanks 57 and with bodies 58 mounted thereon and containing suitable valve mechanism for controlling the flow of the beverage through the faucets. These faucets are further formed with discharge spouts 59 and handles 60 for operating the valve mechanism within the bodies 58. The shanks 57 extend through openings 61 in the front wall 17 of drawer 15 and through the front wall 42 of case 40. A collar 63 encircling the shank 57 engages

3

the outer surface of the wall 42 of case 40 while a nut 64 screwed on the inner end of the shank 57 engages the inner surface of the wall 17 of drawer 15. Attached to the inner ends of the shanks 57 of faucets 55 and 56 are tube fittings 65 and 66. These tube fittings have attached to them connectors 67 and 68 and to which the flexible tubes 38 and 39 previously referred to are attached. The fittings 33 and 34 serve as outlet fittings for the coils 22 and 23 and direct the beverage from these coils to the faucets 55 and 56 and from which the beverages may be dispensed.

The drawer 15 is supported for sliding movement on two drawer slides 70 best shown in Figs. 3, 4 and 5. These drawer slides comprise fixed rails 71 which have webs 87 extending upwardly therefrom. Issuing inwardly from said webs are flanges 88 which overlie the rails 71. Brackets 72 are attached to the webs 87. These brackets are in turn secured by means of screws 73 to the cleats 14 of the counter 10. Attached to the side walls 44 and 45 of the case 40 are rails 74 which are disposed above the rails 71 and beneath the flanges 88. The rails 71 have webs 89 depending therefrom and which overlie the walls 44 and 45. Rivets 90 passing through said walls and webs hold the rails attached to the drawer. Rotatably mounted on the webs 87 are rollers 75 which are disposed at the outer ends of the same. In like manner, rollers 76 are mounted on the webs 89 of rails 74 which are disposed at the inner ends thereof. These rollers engage the rails 71. By means of this construction, the drawer may be pulled out, as shown in Fig. 5, or the same may be disposed within the confines of the counter as shown in Fig. 4.

Disposed below the faucets 55 and 56 is a receptacle tray 77 on which the receptacle to be filled with beverage may be placed while the same are being filled with the beverage. This tray includes a perforated rack 73 mounted within the same and on which the glasses are placed. The said tray is provided with a drain fitting 79 and which has attached to it a flexible tube 80 connected to a suitable drain. The tray 77 is supported by means of a bracket 81 which has an arm 82 mounted in a slide 83 attached to the bottom 41 of the case 40. The bracket 81 further includes a hanger 84 extending downwardly from the arm 82 and which has an arm 85 at its lower end underlying the tray 77. Screws 86 serve to attach the tray 77 to the arm 85.

The use of the invention is obvious. All of the tubes or hose connected to the various conduits of the drawer are flexible so that the drawer may be slid from the position shown in Fig. 4 to that shown in Fig. 5. When the drawer is in the position shown in Fig. 5, ice or other similar solid refrigerant may be placed in the interior of the drawer 15 and the drawer slid back into concealed position within the counter 10. In such position, the faucets 55 and 56 extend rearwardly of the counter top 11 and likewise the tray 77 which is sufficiently below the faucets to permit of placing glasses on the same and filling the same with beverage. When the ice or other refrigerant melts, the drawer may again be pulled out and the consumed refrigerant replaced by additional refrigerant.

The advantages of the invention are manifest. Due to the fact that the coils are encased in the bottom of the drawer, heat transfer is a maximum and the efficiency is extremely high. The dispenser may be installed by merely attaching the hangers to suitable cleats mounted on the under side of the counter and without the necessity of special skilled labor. In the event the unit is desired to be removed for cleaning, the same may be readily accomplished without the services of a skilled laborer. Applicant has found by actual experiments that glasses may be filled in rapid succession without noticeable drop in temperature of the succeeding charges of beverages drawn.

4

Changes in the specific form of the invention, as herein described, may be made within the scope of what is claimed without departing from the spirit of the invention.

5 Having described the invention, what is claimed as new and desired to be protected by Letters Patent is:

1. In combination with a counter for serving beverages open at the back and having a top, rails carried by said counter and disposed below said top and extending transversely thereof, a drawer for holding a refrigerant, said drawer comprising a bottom, sides and ends, all constructed of cast metal and integral, a coil of heat conducting tubing cast in the bottom of said drawer, a faucet attached to the rear end of said drawer, and in heat conducting relation relative thereto means for bringing said faucet into communication with one end of said coil, a conduit connected to the other end of the coil and to a source of beverage under pressure and means carried by said drawer and engaging said rails for guiding said drawer for movement transversely of said counter top to expose or conceal said receptacle beneath said counter.

2. In combination with a counter for serving beverages open at the back and having a top, rails carried by said counter and disposed below said top and extending transversely thereof, a drawer for a refrigerant disposed beneath said counter top, heat exchange means at the bottom of said drawer including a tortuous passageway for the beverage dispensed, said means being in heat transfer relation with said refrigerant, a faucet carried by said drawer and disposed at the rearward portion thereof and extending behind said counter top, said faucet communicating with said passageway, means on said drawer engaging said rails and guiding said drawer for movement transversely of said counter top to expose or conceal said drawer beneath said counter and a drain attached to said drawer and movable therewith, said drain being disposed below said faucet.

3. In combination with a counter for serving beverages open at the back and having a top, rails carried by said counter and disposed below said top and extending transversely thereof, a drawer for a refrigerant disposed beneath said counter top, heat exchange means at the bottom of said drawer including a tortuous passageway for the beverage dispensed, said means being in heat transfer relation with said refrigerant, a faucet carried by said drawer and disposed at the rearward portion thereof and extending behind said counter top, said faucet communicating with said passageway, means on said drawer engaging said rails and guiding said drawer for movement transversely of said counter top to expose or conceal said drawer beneath said counter, a shelf attached to said drawer and movable therewith, said shelf being disposed below said faucet and a drain connected to said shelf.

4. In combination with a counter for serving beverages open at the back and having a top, rails carried by said counter and disposed below said top and extending transversely thereof, a drawer for holding a refrigerant, said drawer comprising a bottom, sides and ends, all constructed of cast metal and integral, a coil of heat conducting tubing cast in the bottom of said drawer, a faucet attached to the rear end of said drawer, means for bringing said faucet into communication with one end of said coil, a conduit connected to the other end of the coil and to a source of beverage under pressure, a case enclosing said drawer and having side and end walls and a bottom spaced from the side and end walls and bottom of said drawer, insulation between said case and drawer, and means attached to the side walls of said case and engaging said rails and guiding said drawer for movement transversely of said counter top to expose or conceal said receptacle beneath said counter.

5. In combination with a counter for serving beverages

5

open at the back and having a top, rails carried by said counter and disposed below said top and extending transversely thereof, a drawer for holding a refrigerant, said drawer comprising a bottom, sides and front and rear ends all constructed of metal in heat conducting relation with one another, a coil carried by said bottom and disposed in heat conducting relation relative thereto, a faucet disposed exteriorly of said drawer and having a shank extending through said rear end of said drawer and attached thereto, said coil having an inlet end accessible from the exterior of the drawer and an outlet end accessible from the interior of the drawer, a conduit within said drawer connecting the outlet end of said coil with said shank, a flexible conduit connected to the outlet end of said coil and to a source of beverage under pressure, and means carried by said drawer and engaging said rails for guiding said drawer for movement transversely of said counter top to expose or conceal said drawer beneath said counter.

6. In combination with a counter for serving beverages open at the back and having a top, rails carried by said counter and disposed below said top and extending transversely thereof, a drawer for holding a refrigerant, said drawer comprising a bottom, sides and ends, all constructed of cast metal and integral, a coil of heat conducting tubing cast in the bottom of said drawer, a faucet attached to the rear end of said drawer, means for bringing said faucet into communication with one end of said coil, a flexible conduit connected to the other end of the coil and to a source of beverage under pressure, a case enclosing said drawer and having side and end walls and a bottom spaced from the side and end walls and bottom of said drawer, insulation between said case and drawer, and means attached to the side walls of said case at the uppermost portions thereof and engaging said rails and guiding said drawer for movement transversely of said counter top to expose or conceal said receptacle beneath said counter.

7. In combination with a counter for serving beverages open at the back and having a top, rails carried by said counter and disposed below said top and extending trans-

6

versely thereof, a receptacle for a refrigerant disposed beneath said counter top and in close proximity thereto, heat exchange means carried by said receptacle and including a tortuous passageway for the beverage dispensed and in heat transfer relation with said refrigerant, a faucet carried by said receptacle and communicating with said passageway, said faucet extending behind said counter top, and means attached to said receptacle engaging said rails and guiding said receptacle for movement transversely of said counter top to a position within the confines of the rear edge of said counter top or a position exposing said receptacle.

8. In combination with a counter for serving beverages open at the back and having a top, rails carried by said counter and disposed below said top and extending transversely thereof, a drawer for holding a refrigerant, said drawer comprising a bottom, sides and front and rear ends all constructed of metal in heat conducting relation relative to one another, a coil carried by said bottom and disposed in heat conducting relation relative thereto, a faucet disposed exteriorly of said drawer and having a shank extending through said rear end of said drawer and attached thereto, said coil having an inlet end accessible from the exterior of the drawer and an outlet end accessible from the interior of the drawer, means within said drawer in heat conducting relation with respect to said bottom connecting the outlet end of said coil with said shank, a flexible conduit connected to the outlet end of said coil and to a source of beverage under pressure, and means carried by said drawer and engaging said rails for guiding said drawer for movement transversely of said counter top to expose or conceal said drawer beneath said counter.

References Cited in the file of this patent

UNITED STATES PATENTS

1,952,422	Copeman	Mar. 27, 1934
2,450,844	Stuart	Oct. 5, 1948
2,673,005	Brown	Mar. 23, 1954
2,803,118	Lewis	Aug. 20, 1957