June 8, 1937. R. J. SIMARD 2,083,477

COOLING SYSTEM AND APPARATUS FOR BEVERAGE DISPENSERS

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Fig. 2

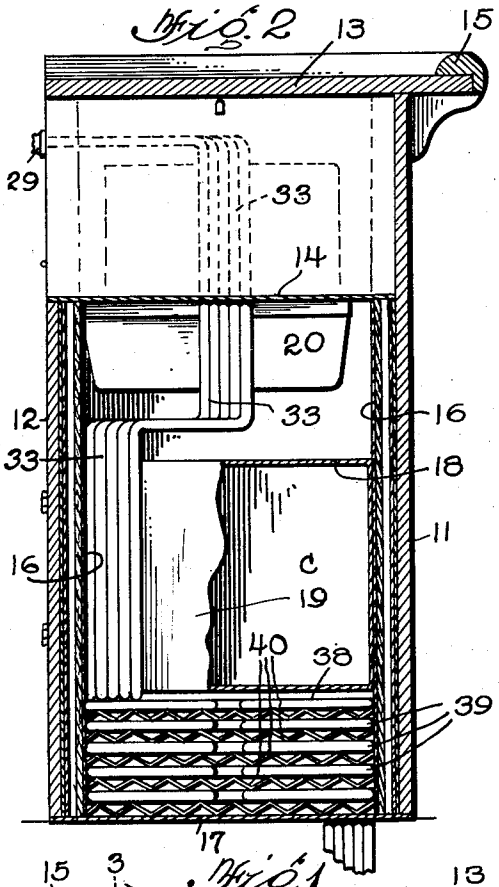


Fig. 3

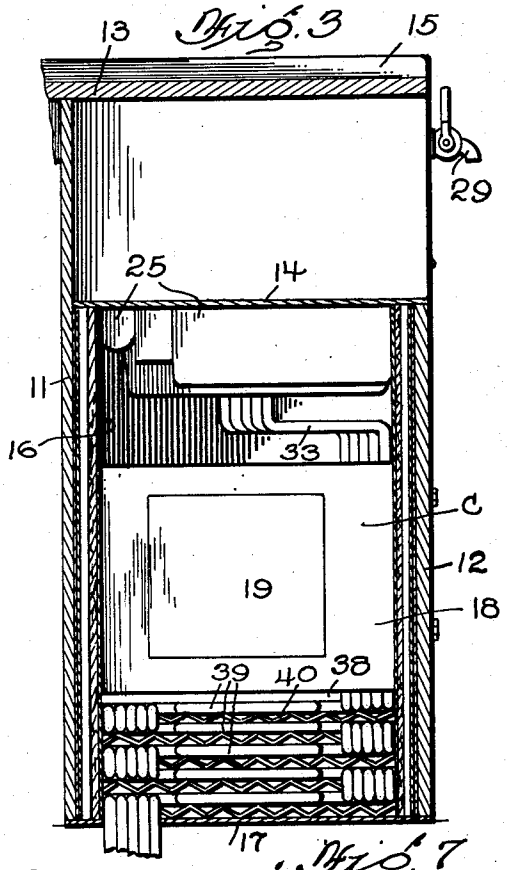


Fig. 1

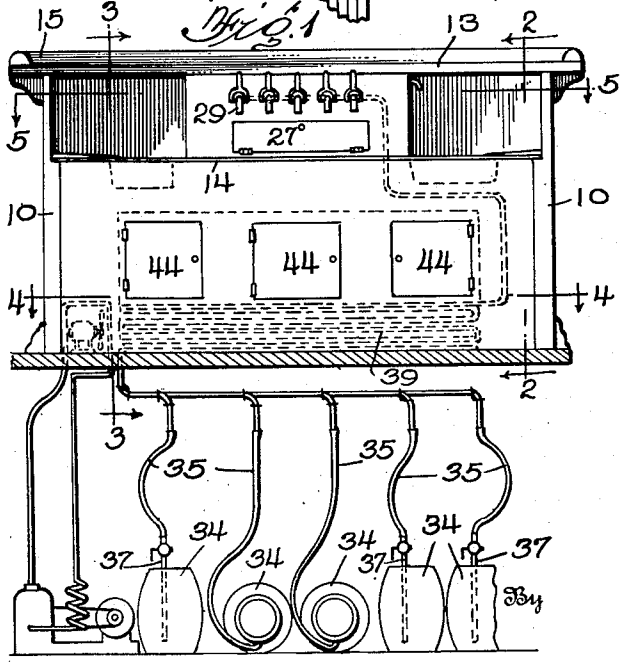


Fig. 7

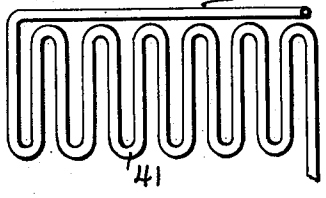
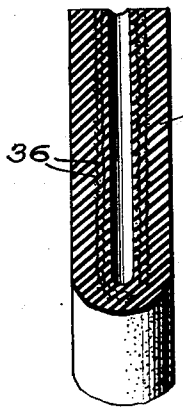


Fig. 8



Inventor
Rodolphe J. Simard
By
Davis & Davis
Attorneys

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COOLING SYSTEM AND APPARATUS FOR BEVERAGE DISPENSERS

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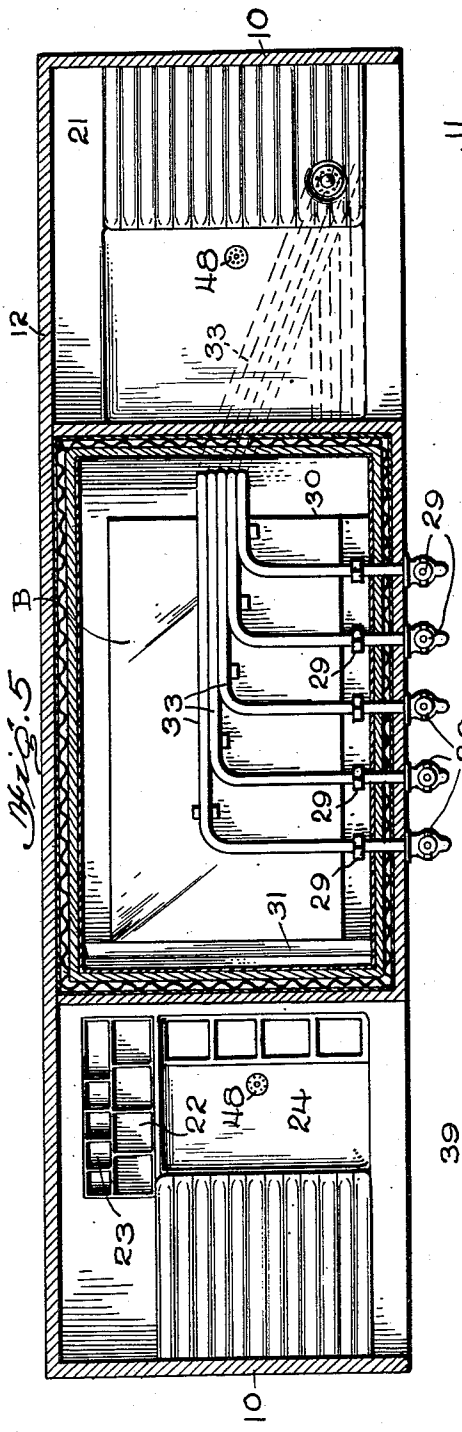

Fig. 5

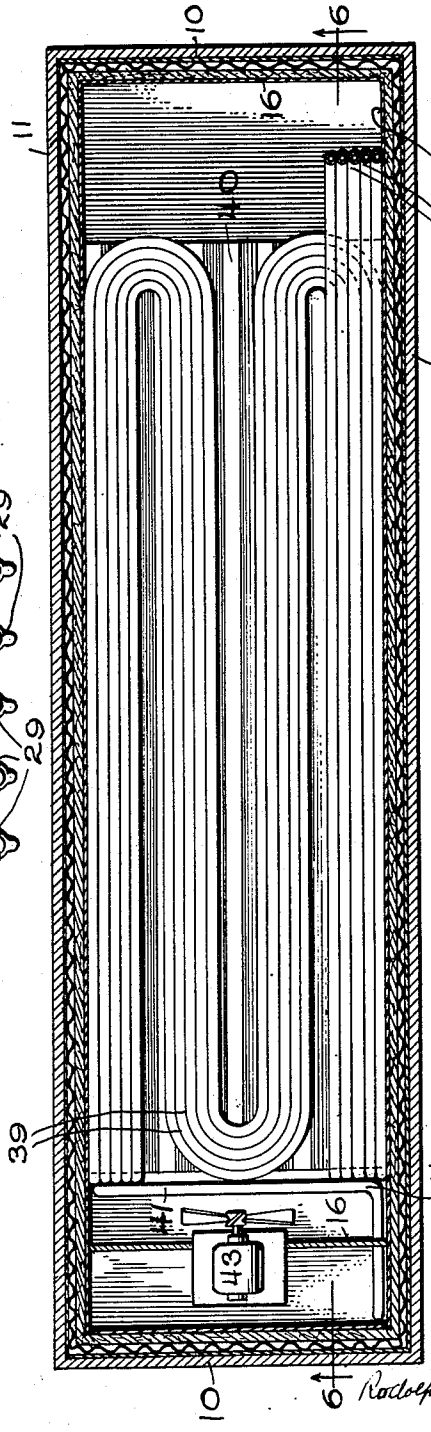

Fig. 4

Inventor
Rodolphe J. Simard

By Davis & Davis
Attorneys

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COOLING SYSTEM AND APPARATUS FOR BEVERAGE DISPENSERS

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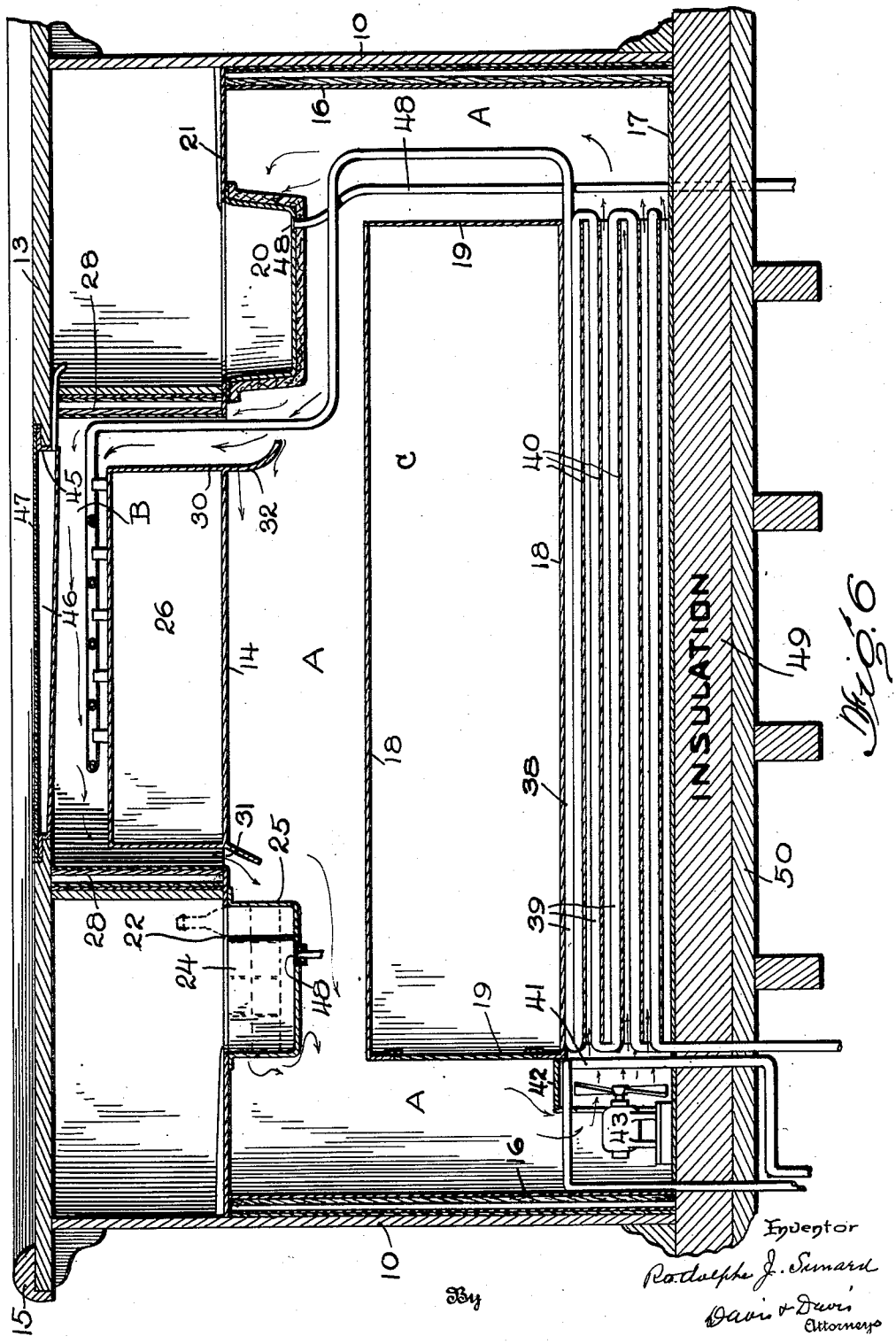

Fig. 6

Inventor
Rodolphe J. Simard
By Davis & Davis
Attorneys

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UNITED STATES PATENT OFFICE

2,083,477

COOLING SYSTEM AND APPARATUS FOR BEVERAGE DISPENSERS

Rodolphe J. Simard, Lynn, Mass.

Application July 29, 1936, Serial No. 93,284

5 Claims. (Cl. 62—102)

This invention relates to improvements in a cooling system and apparatus for beverage dispensers of the type wherein the beverage is served from faucets mounted in a cabinet structure which is provided with a cooling compartment, and another compartment located remote from the cabinet for storing the barrelled beverages, and also a refrigerating unit for furnishing cooling liquid to said cabinet.

One of the particular objects of this invention is to provide a compact serving cabinet which is cooled by means of a refrigerating unit located remote from said cabinet, said cabinet being economically constructed and particularly arranged to support drinking glasses and bottles of beverages which are maintained in a cooled condition for ready service.

This and other objects hereinafter set forth are attained by the means illustrated in the accompanying drawings, in which:—

Fig. 1 is a rear view showing in elevation an assembled apparatus;

Fig. 2 is a vertical sectional view taken on the line 2—2 of Fig. 1;

Fig. 3 is a similar sectional view taken on the line 3—3 of Fig. 1;

Fig. 4 is a horizontal section taken on the line 4—4 of Fig. 1;

Fig. 5 is a horizontal section taken on the line 5—5 of Fig. 1;

Fig. 6 is a vertical longitudinal section taken on the line 6—6 of Fig. 4; and

Figs. 7 and 8 are detail views of the cooling radiator or evaporator and the flexible connection used to connect beverage containers and the service line.

In the drawings, similar reference numerals designate like parts throughout the different figures.

The serving cabinet of this apparatus is provided with end walls 10, a front wall 11, a rear wall 12, a top wall 13, and an intermediate wall 14. Said top wall 13 is relatively thick and is provided with suitable edge moldings 15 to form a serving counter or bar, and said intermediate wall 14 is formed of thin metal which is sufficiently strong to support a plurality of basins or compartments for purposes hereinafter set forth.

Thin metal vertical walls 16 extend down from said intermediate wall 14 to a bottom thin metal wall 17, and equally spaced from these thin walls are the thin walls 18 and 19, which follow the contour of the main thin walls, forming an air duct A extending around the cabinet, wherein a circulation of air is maintained.

The plurality of basins or compartments comprises a wash or rinsing basin 20 and a companion drain board 21 at one side of the cabinet. At the opposite side of the cabinet is constructed a series of bottle holders 22 and a series of small trays 23; also a compartment 24 larger in area than holders 22 and tray 23 to form an ice cube container, all of these holders, trays and basins having portions forming pockets 25 depending below the intermediate wall of shelf into the air duct A and into the path of the circulating air, whereby the contents of said pockets are cooled.

Located between the top wall, counter or bar, and the intermediate wall 14, is provided a cooling chamber 26 for other articles to be cooled, and the same is provided with a suitable door 27 as shown in Fig. 1. The top and end walls of this chamber 26 are spaced from surrounding walls 28 to form a by-pass air duct B to maintain the stems of the faucets 29 and their pipe connections cool or cold as desired. The inlet and outlet ends, 30 and 31 respectively, are open to the main air duct A, said inlet opening being provided with a scoop or funnel projection 32 to direct the circulating air into said by-pass duct B.

The beverage, such as beer, ale, or the like, is delivered to the faucets 29 by the usual pipe lines 33, one for each faucet, extending down to and connected to the delivery or storage keg 34 in the usual manner, it being understood that the usual air pressure mechanism is used (not shown) for forcing the beverage through the pipe lines. The storage kegs can be located any distance remote from the faucets, such as in the cellar or in another room in the building.

One of the features of this invention is to provide non-collapsible connections 35 in the beverage pipe lines between the storage kegs and the metallic portion of the lines. These connections 35 are preferably constructed of rubber having a relatively small longitudinal bore and are approximately 4 feet long. The central bores of these connections are approximately ⅛ of an inch diameter, as shown in Fig. 8 of the drawings wherein is shown a full size section. These rubber connections are formed with fabric reinforcements 36 embedded in the rubber portion and closely adjacent the bore thereof. This is for the purpose of strengthening the rubber hose so that it can withstand high pressures carried by the pipe lines. These non-collapsible flexible connections also permit the storage kegs

to be moved to different positions without distortion of the material of the connection, as oftentimes happens with the type now used which is ordinarily constructed of metal. It is also understood that the usual barrel fittings 37 are used to connect the pipe lines thereto.

In the lower arm 38 of the air duct A are located cooling coils 39 for the beverage contained therein. Preferably, these coils are arranged in a plurality of loops, as shown clearly in Fig. 4 of the drawings, and the individual coils are superposed to form a bank of coils, each individual coil being separated from the adjacent coils by a corrugated separated plate 40, which not only supports the pipes of the different coils spaced from each other, but also forms a plurality of individual air passages throughout the length of the separators.

Coils 39 are cooled by cold air from a radiator or evaporator 41, shown in detail in Fig. 7, which consists of a series of loops extending across one of the end openings of the air duct A. Said radiator has a hood 42 extending around said end opening in a manner to cover the radiator, and said radiator coil has its terminals connected to a refrigerating unit of the type used in cooling systems, whereby cold air is circulated through the radiator coil 41. The cold air is blown from the radiator through channels formed in the separator plate 40 and thence continuously around the air duct A, through the by-pass B, and is returned to the back of the hood 42 and again forced forwardly by a suitable motor fan 43. This portion of the cooling apparatus is another particular feature of this invention, that is, providing a continuously extending air duct around the sides of the cabinet, projecting the bottle holding receptacles and trays into this cooled air duct and placing the beverage coils in one of the legs of said air duct and forcing cold air through a radiator connected to a remotely situated refrigerating unit and locating said radiator directly in front of an end opening of said main air duct.

In the hollow square of the air duct A is formed a cooling chamber C for storing miscellaneous food and bottle goods. This chamber is accessible through the doors 44, shown clearly in Fig. 1. This cooling chamber acquires its cooling temperature through the surrounding thin walls of the air duct.

The top wall 13 is provided with an aperture 45 suitably formed to receive and support a drain tray 46 which is provided with a perforated cover 47. By removing this tray and cover, easy access is had to faucets and their connections which lie in the by-pass air duct.

It will be noted that suitable drain pipes 48 are provided for the different basins and these are usually connected together to a common discharge pipe.

To completely insulate the cabinet, it is mounted or seated on a suitable heavy insulating base 49 which is built or laid on the flooring 50 lying between the different rooms.

It is thought that the operation of this device is obvious taken in connection with both the drawings and specification.

I claim:

1. In an apparatus of the type described, a cabinet for serving beverages or the like embodying a serving counter, an air duct extending continuously around said cabinet and embodying a lower passageway, a series of cooling coils arranged in a plurality of horizontal loops in said lower passageway, a refrigerating unit located remote from said cooling coils, an evaporator coil located at one end of said lower passageway and connected to said remote refrigerating unit, and a fan located in front of said evaporator in a position to blow cooled air in a circulating stream through said continuous air duct and over said horizontal coiled loops.

2. In an apparatus of the type described, a cabinet for serving beverages or the like embodying a serving counter, an air duct extending continuously around said cabinet and embodying a lower passageway, a series of cooling coils arranged in a plurality of horizontal loops in said lower passageway the horizontal loops being superposed to form banks of coils, a refrigerating unit located remote from said cooling coils, an evaporator coil located at one end of said lower passageway and connected to said remote refrigerating unit, and a fan located in front of said evaporator in a position to blow cooled air in a circulating stream through said continuous air duct and over said horizontal coiled loops.

3. In an apparatus of the type described, a cabinet for serving beverages or the like embodying a serving counter, an air duct extending continuously around said cabinet and embodying a lower passageway, a series of cooling coils arranged in a plurality of horizontal loops in said lower passageway the horizontal loops being superposed to form banks of coils and each horizontal layer of coils being separated from adjacent coils by corrugated separator plates which form a multiplicity of air passages underlying each layer of coils, a refrigerating unit located remote from said cooling coils, an evaporator coil located at one end of said lower passageway and connected to said remote refrigerating unit, and a fan located in front of said evaporator in a position to blow cooled air in a circulating stream through said continuous air duct and over said horizontal coiled loops.

4. In an apparatus of the type described, a cabinet for serving beverages or the like embodying a serving counter, an air duct extending continuously around the lower portion of said cabinet, a faucet connection compartment in the upper portion of said cabinet and having its ends connected to said air duct through by-passes to convey cold air from the main duct to and around the faucet connections, cooling coils for the beverage in the lower leg of said main duct, and means for blowing cooled air through said main duct and over said cooling coils.

5. In an apparatus of the type described, a cabinet for serving beverages or the like embodying a serving counter, an air duct extending continuously around said cabinet and embodying a lower passageway, a series of cooling coils arranged in a plurality of horizontal loops in said lower passageway, a refrigerating unit located remote from said cooling coils, an evaporator coil located at one end of said lower passageway and connected to said remote refrigerating unit, and a fan located in front of said evaporator in a position to blow cooled air in a circulating stream through said continuous air duct and over said horizontal coiled loops, and a hood having open ends surrounding said evaporator and a fan.

RODOLPHE J. SIMARD.