June 26, 1951 A. KASSEL 2,558,181

PORTABLE DISPENSING DEVICE

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Fig. 1.



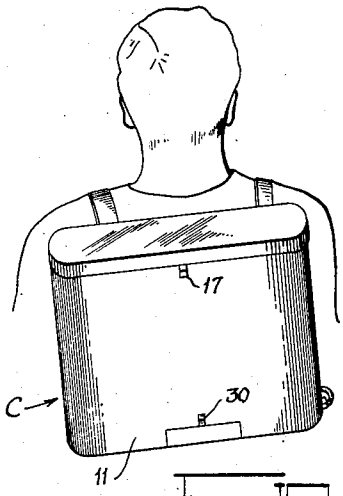
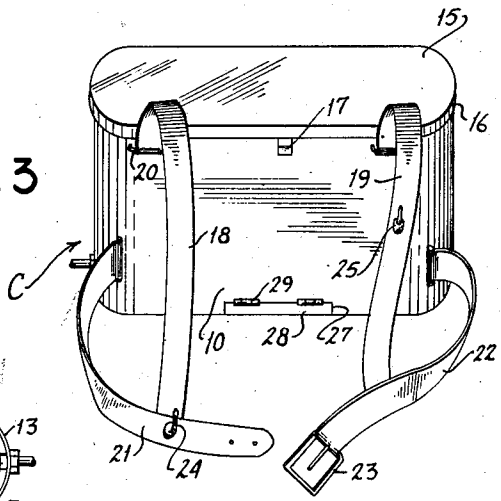


Fig. 2.

Fig. 3.



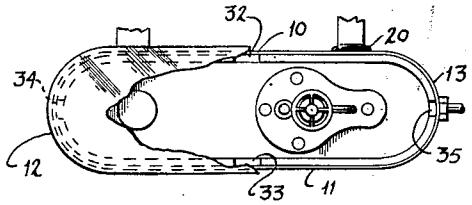


Fig. 4.

Inventor
ART KASSEL

By Joshua R. H. Rose

His Attorney

June 26, 1951 A. KASSEL 2,558,181

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FIG. 5

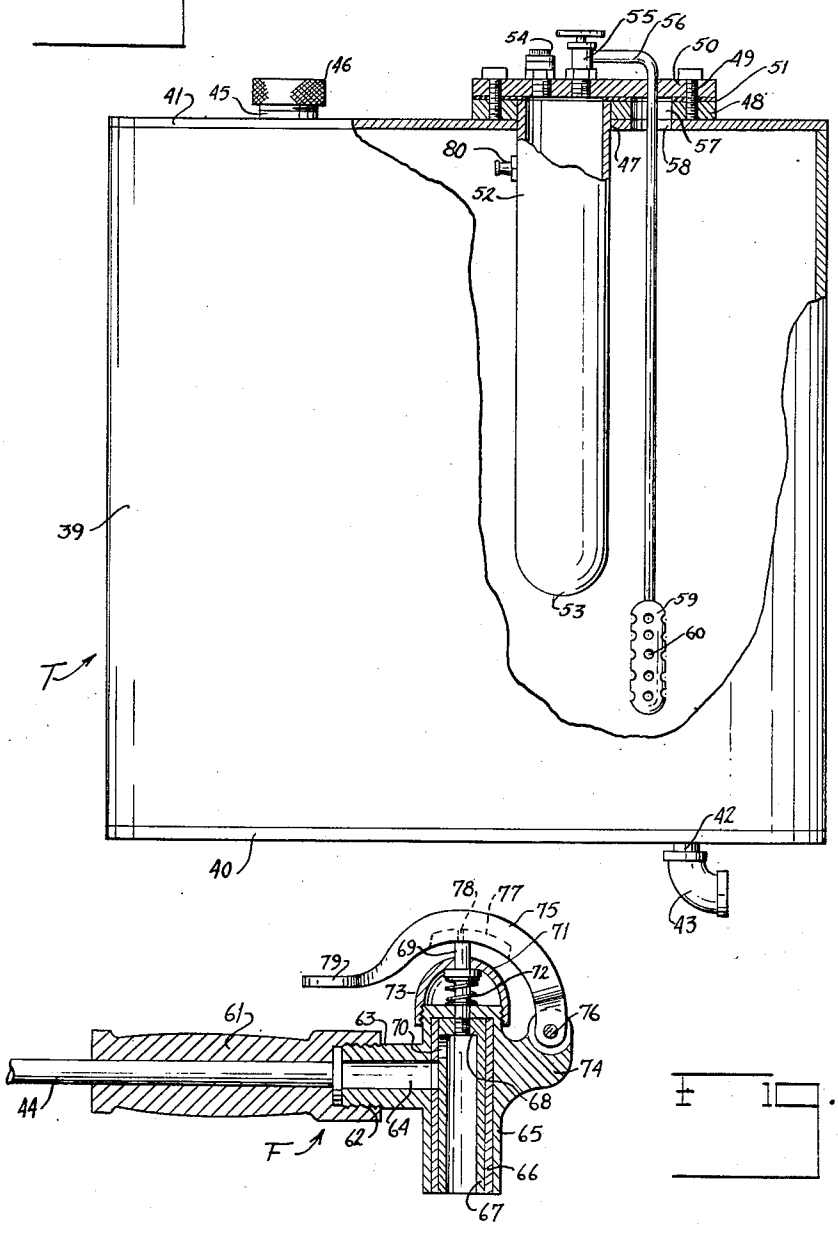


FIG. 6

Inventor
ART KASSEL
By Joshua R. H. Parks
His Attorney

June 26, 1951 A. KASSEL 2,558,181

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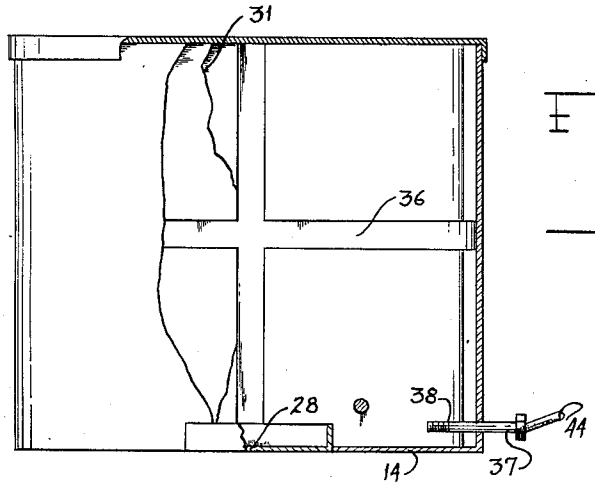


FIG. 7

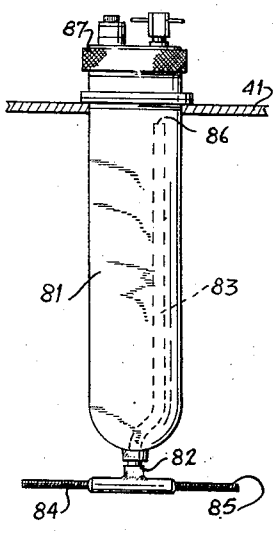


FIG. 8

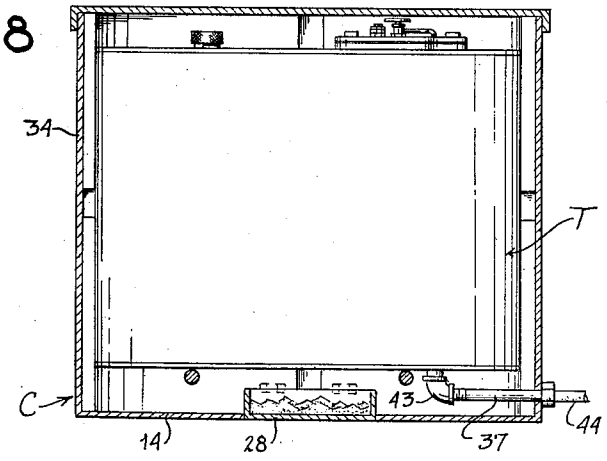


FIG. 9

Inventor
ART KASSEL
By Joshua R. H. Potts
His Attorney

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2,558,181

UNITED STATES PATENT OFFICE

2,558,181

PORTABLE DISPENSING DEVICE

Art Kassel, Van Nuys, Calif.

Application March 23, 1949, Serial No. 83,068

3 Claims. (Cl. 62—91.5)

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The present invention relates to portable liquid dispensing devices of the type adapted to be carried about by a vendor and is concerned primarily with a dispenser which inclues improvements that tend to maintain the beverages dispensed thereby in a salable condition and which may be operated to dispense the beverages with a maximum of convenience to the vendor.

At the present time, the American public which attends such functions as baseball games, football games, circuses and other outdoor attractions have come to look upon the sale of various carbonated beverages as the usual thing, and as a practical matter, an extremely large business is done in these carbonated beverages.

At the present time, the most extensive practice is for the vendor to carry about a large number of chilled bottles which are individually sold. This arrangement is highly disadvantageous in many respects. In the first instance, the vendor can only carry a limited number of the bottles because of the weight of the glass and difficulty is experienced in maintaining the bottled beverages chilled to a palatable temperature.

Because of these factors, certain attempts have been made to provide a portable dispenser which may be carried about by the vendor and from which beverages may be dispensed. However, due to the failure of the known devices to adequately accommodate the practical conditions these have not met with any appreciable use.

With the foregoing conditions in mind, the present invention has in view, as its foremost objective, the provision of a portable dispenser of the type indicated which may be conveniently carried about by the vendor and from which beverages may be readily dispensed. The dispenser includes means for refrigerating the beverages and maintaining them at a desired temperature and provision is also made for carbonating the beverages when desired and providing a head pressure which aids in the dispensing operation.

In carrying out the above noted object in a practical embodiment, the invention provides a dispenser which consists essentially of an inner tank and an outer casing having a removable cover. An important object is to provide an outer casing with shoulder straps and a belt whereby it may be worn on the back of a vendor.

Another object of the invention is to provide refrigerating means for the outer casing which is separate and independent of any refrigerating or cooling medium which is employed in conjunction with the inner tank. This object is achieved by insulating the outer casing, providing it with a pocket for receiving "dry ice" and suitable ducts or passages through which air and carbon dioxide gas that is released from the dry ice may pass.

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Another highly important object of the invention is to provide, in a portable dispenser of the type noted, an inner tank which has an outer contour complemental to the inner contour of the outer casing whereby it is adapted to be snugly received therein. This inner tank is provided at the bottom with a tap to which one end of a flexible conduit is adapted to be connected. This conduit passes through a suitable opening and at its free end carries a dispensing faucet. The flexible conduit is of a length which provides for the location of the dispensing faucet in the front of the vendor in a position in which it may be conveniently operated while the assembled tank is worn on the back of the vendor.

Another object of the invention is to provide, in a portable dispenser of the character indicated, an inner tank which includes a sleeve or chamber that is adapted to receive "dry ice." This Dry Ice serves multiple functions. In the first instance, it cools the contents of the inner tank. In the second place, as the Dry Ice releases carbon dioxide gas, the latter may be admitted to the beverage contained in the inner tank to carbonate it, and finally, the released carbon dioxide gas may be utilized as a head pressure to aid in discharging the contents of the inner tank.

Various other more detailed objects and advantages of the invention such as arise in connection with carrying out the above noted ideas in a practical embodiment will, in part become apparent, and in part be hereinafter stated as the description of the invention proceeds.

The invention therefore comprises a portable dispensing device which consists essentially of an outer casing and a complemental inner tank with the outer casing provided with shoulder straps and a belt, while a flexible tube communicates with the inner tank and has a dispensing faucet on its free end. Both the inner tank and the outer casing are individually refrigerated, and provision is made for using carbon dioxide gas that is released by Dry Ice in the inner tank to carbonate the beverage therein and provide a dispensing pressure head.

For a full and more complete understanding of the invention, reference may be had to the following description and accompanying drawings wherein:

Figure 1 is a perspective view from the front showing the portable dispenser of this invention as applied to the person of a vendor.

Figure 2 is another perspective taken from the back showing a dispensing device in position on the back of a vendor.

Figure 3 is a perspective view of the dispenser removed from the person of the vendor.

Figure 4 is a top plan view with a portion of the lid of the outer casing broken away.

Figure 5 is an enlarged detailed view in side elevation of the inner tank with a wall thereof broken away.

Figure 6 is a section through the dispensing faucet per se and illustrates the latter on an enlarged scale.

Figure 7 is a view of the outer casing with a wall thereof broken away.

Figure 8 is a view showing the outer casing in vertical section with the inner tank assembled therein; and

Figure 9 is an enlarged detailed view of a modified form of a refrigerating tube which may be used in the inner tank.

Referring now to the drawings wherein like reference characters denote corresponding parts, and first more particularly to Figures 1, 2, and 3, the portable dispenser which is provided by this invention is shown as including an outer casing which is referred to in its entirety by the reference character C. The casing C has parallel side walls 10 and 11 to which are integrally connected curved end walls 12 and 13. The casing C also includes a bottom 14 (Figures 7 and 8), and a removable cover 15 having a depending flange 16 which is adapted to overlap the wall structure 10, 11, 12 and 13. A clip such as shown at 17 in Figures 2 and 3 may be employed to detachably secure the cover 15 in position.

Shoulder straps 18 and 19 have one end secured to the wall 10 as by the brackets indicated at 20 while the other ends of the shoulder straps 18 and 19 are secured to the belt parts 21 and 22. The latter are adapted to encircle the waist of a vendor as shown in Figure 1, and are provided with a buckle as at 23 to establish the complete connection between the belt parts in a well known manner. The belt part 21 carries a hook at 24 for a purpose to be later described, while a hook 25 carried by the shoulder strap 19 is adapted to function as a support for a container 26 which receives a supply of cups that are adapted to receive the beverages dispensed. This container 26 is shown in Figure 1 as applied to the hook 25.

Upon referring to Figures 1 and 2, it will be noted that the bottom 14 and corresponding portions of the walls 10 and 11 are cut away to provide a recess 27 in which is fitted a tray 28. The latter is hingedly mounted on the wall 10 as indicated at 29 and a clip 30 is adapted to cooperate with the wall 11 in yieldably holding the tray 28 in position. This tray 28 is shown in detail in Figures 7 and 8 and is adapted to receive a supply of Dry Ice for refrigerating the outer casing C.

Referring now more particularly to Figures 7 and 8, it will be noted that the wall structure 10, 11, 12 and 13, and the bottom 14 may be made from an appropriate sheet metal with the inner faces thereof lined by insulation indicated at 31. Any good insulating material may be employed, although the invention has particularly in mind a material in sheet form such as sheet asbestos because the application to the inner surfaces of the tank is facilitated by the material in this form.

It will be noted that the tray 28 is disposed substantially midway between the end walls 12 and 13 and opens up into the container. The inner face of the wall 10 is provided with a vertical duct 32 while a similar vertical duct 33 is provided on the inner face of the wall 11. A vertical duct 34 extends upwardly on the inner face of the end wall 12 and another vertical duct 35 on the inner face of the end wall 13.

Midway of the top and bottom there is a horizontal duct 36 which extends around the inner face of the wall structure 10, 11, 12 and 13, and communicates with the ducts 32, 33, 34, and 35. It is evident that these ducts provide a passageway or conduit for carbon dioxide gas which may be released from Dry Ice placed in the tray 28.

A metal tube 37 is carried in the end wall 13 and its inner end is threaded as indicated at 38 for a purpose to be later described. Secured to the outer end of this metal tube 27 is a flexible tube 44, the free end of which carries a faucet F. Such is shown in Figure 6 and it will be later described in detail.

Snugly received within the outer casing C is an inner tank T that is adapted to receive the beverages to be dispensed. This inner tank T has a wall structure comprising side and end walls that are integrally joined together and which wall structure is referred to as 39. The tank T also includes a bottom 40 and a top 41. The bottom 40 is provided with a tap at 42 which communicates with the interior of the tank T and which carries on its free end a fitting 43 into which is screwed the threaded end 38 of the tube 37. This establishes communication between the flexible tube 44 and the interior of the tank T.

The top wall 41 carries an exteriorly threaded nipple 45 which communicates with the interior of the tank T and through which beverages may be charged thereinto. The inlet opening provided by this nipple 45 is normally closed by the cap 46.

The top 41 is also formed with an opening 47 about which is positioned a plate 48 which may be welded to the top 41 and which is formed with an opening corresponding to the opening 47. Secured to this plate 48 as by the screw bolts shown at 49 is a top plate 50 and a gasket indicated at 51 may be interposed between the plates 48 and 50 to provide a fluid tight joint.

A container for Dry Ice in a form of a tube is shown at 52. This container extends down into the interior of the tank T and has a closed lower end as indicated at 53. The upper open end of the container 52 is welded to the plate 48 within the opening therein, corresponding to the opening 47.

The top 50 carries a safety valve shown at 54 and a fitting 55 which communicates with the Dry Ice container 52 disposed immediately therebeneath. A tubular conduit 56 extends from the fitting 55 through aligned openings 57 and 58 formed in the plate 48 and top 41 respectively, down into the interior of the tank T where it carries a discharge head 59 formed with a plurality of discharge openings 60 through which carbon dioxide gas may be released into the beverage within the tank so as to carbonate this beverage. It is notable that the head 59 may pass through the openings 57 and 58 as when the plate 59 is removed.

Referring now more particularly to Figure 6, the faucet F is shown as comprising a sleeve 61 having a bore which receives the tube 44 and which is adapted to be conveniently grasped by the operator. One end of the sleeve 61 is coun-

terbored as indicated at 62 and the counterbore wall is threaded. Screwed into this counterbore 62 is a nipple 63 having a bore 64 that communicates with the tube 44. Formed integrally with the nipple 63 and extending in a direction at right angles thereto, is a cylindrical valve casing 65 which is preferably made of metal, such as stainless steel, and which has a bore lined with a lining shown at 66 which may be of Bakelite or other similar material. Slidably positioned in this lining 66 is a discharge spout 67 that is of a hollow construction having a closed end at 68 in which is anchored an actuating pin 69. This discharge spout 67 has an opening 70 formed in one wall thereof which is adapted to align with the bore 64 when the discharge spout is depressed.

The pin 69 carries a spring detainer 71 and an expansion coil spring 72 is disposed about the pin 69 between this retainer 71 and the upper end of the casing 65. The normal tendency of the spring 72 is to maintain the discharge spout 67 in an upraised position which springs the opening 70 out of alignment with the bore 64, thereby closing the faucet.

The spring 72 and retainer 71 may be enclosed within a cap 73. The valve casing 65 carries an ear 74 to which is pivotally connected an operating lever 75 with the pivotal connection shown at 76. This operating lever at 75 is curved as illustrated and its inner face provided with a groove 77 which receives a reduced extremity 78 on the end of the pin 69. The operating lever 75 includes a thumb tab at 79 which is readily adapted to be engaged by the thumb of a vendor when the hand of the latter grasps the sleeve 61.

Operation

While the manner of using the portable dispenser above described and its mode of functioning is believed to be obvious they are summarized as follows:

The outer casing C is refrigerated by placing Dry Ice in the tray 28. Access to the latter may be had by releasing the clip at 30 and swinging the tray 28 on the hinges 29. After the Dry Ice is placed in the tray 28 it is closed and assumes the position in which carbon dioxide gas, which is released from the Dry Ice, will circulate through the ducts 32 to 36 inclusive.

The plate 50 is removed by first removing the bolts 49 and this affords access to the Dry Ice container 52 of the inner tank T. An appropriate amount of Dry Ice is placed in this container 52 and the plate 50 reassembled into the position shown in Figure 5. The cap 46 is removed and the beverage to be dispensed is charged into the tank T up to a desired level. The tank T is assembled within the outer casing C and the connection between the tube 37 and 43 established and this in turn establishes communication between the faucet F and the interior of the tank T.

The vendor now dons the dispenser by placing the shoulder straps 18 and 19 over his shoulder and joining the belt parts 21 and 22 by availing of the buckle 23. In this position the faucet F may be supported by the hook 24. When the vendor makes a sale all he has to do is to grasp the sleeve 61 in his right hand and remove the hook from the faucet. A cup is withdrawn from the container 26 and the lever 75 depressed by the vendor's thumb. This moves the discharge spout 67 down into the interior of the cup in which position the opening 70 aligns with the bore 64 so that the beverage in the tank passes through the faucet into the cup. When the vendor releases his thumb from the tab 79, the spring 72 closes the faucet by moving the discharge spout 67 upwardly.

The Dry Ice within the containers 52 refrigerates the beverages in the tank T. As carbon dioxide gas is released from this Dry Ice, a certain amount thereof passes through a one way valve shown at 80 which is carried by the container 52 closely adjacent to the top 41. This gas provides a head pressure which aids in dispensing the beverage. Another part of the carbon dioxide gas will pass through the fitting 55 and conduit 56 to the head 59 from which it is released through the opening 60 into the beverage to carbonate the latter. Should excessive pressure be built up by the carbon dioxide gas within the container 52, it will be relieved by the safety valve 54.

The modification

Figure 9 discloses a modified form of Dry Ice container for the inner tank T. The container is shown at 81 as having substantially the same size and shape as the container 52. However, a fitting 82 is secured to the bottom and a tube 83 is positioned within the container 81 and is connected to this fitting with which it communicates.

Flexible spring cables 84 and 85 extend outwardly from the fitting 82 at either side and have open ends located at appropriate points within the tank T. The tube 83 has an open end at 86 adjacent to the upper end of the container 81 and carbon dioxide gas is adapted to pass through this open end 86 down through the tube 83 to the fitting 82.

The container 81 is shown as carried by the top wall 41 and has a removable cap 87 provided with the usual safety valve.

While preferred specific embodiments of the invention are hereinbefore set forth, it is to be clearly understood that the invention is not to be limited to the exact constructions, mechanisms and devices illustrated and described because various modifications of these details may be provided in putting the invention into practice within the purview of the appended claims.

What is claimed is:

1. In a portable dispenser of the character described, an inner tank comprising a wall structure, a top, and a bottom; a top carried by said bottom, a container adapted to receive Dry Ice carried by said top, a conduit having one end communicating with said container and carrying a gas releasing head on the other end and which head is located adjacent to said bottom, and a one way valve carried by said container immediately beneath said top.

2. In a portable dispenser of the character described, an inner tank comprising a wall structure, a top, and a bottom; a top carried by said bottom, a container adapted to receive Dry Ice carried by said top, a conduit having one end communicating with said container and carrying a gas releasing head on the other end and which head is located adjacent to said bottom, a one way valve carried by said container immediately beneath said top, and a safety valve communicating with said container.

3. In a portable liquid dispensing device, the combination of: an outer casing, means for mounting said casing on the back of a vendor, said outer casing comprising a metal wall structure, insulation lining said wall structure, ducts

formed in said insulation, and a tray for receiving Dry Ice, said tray being located at the bottom of said casing and communicating with said ducts, an inner tank fitted within said casing, said inner tank comprising a wall structure, a top, and a bottom; a top carried by said bottom, a container adapted to receive Dry Ice carried by said top, a conduit having one end communicating with said container and carrying a gas releasing head on the other end and which head is located adjacent to said bottom, and a one way valve carried by said container immediately beneath said top, a flexible tube connected to said inner tank at the bottom thereof and extending through said casing, and a dispensing faucet at the free end of said tube.

ART KASSEL.

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