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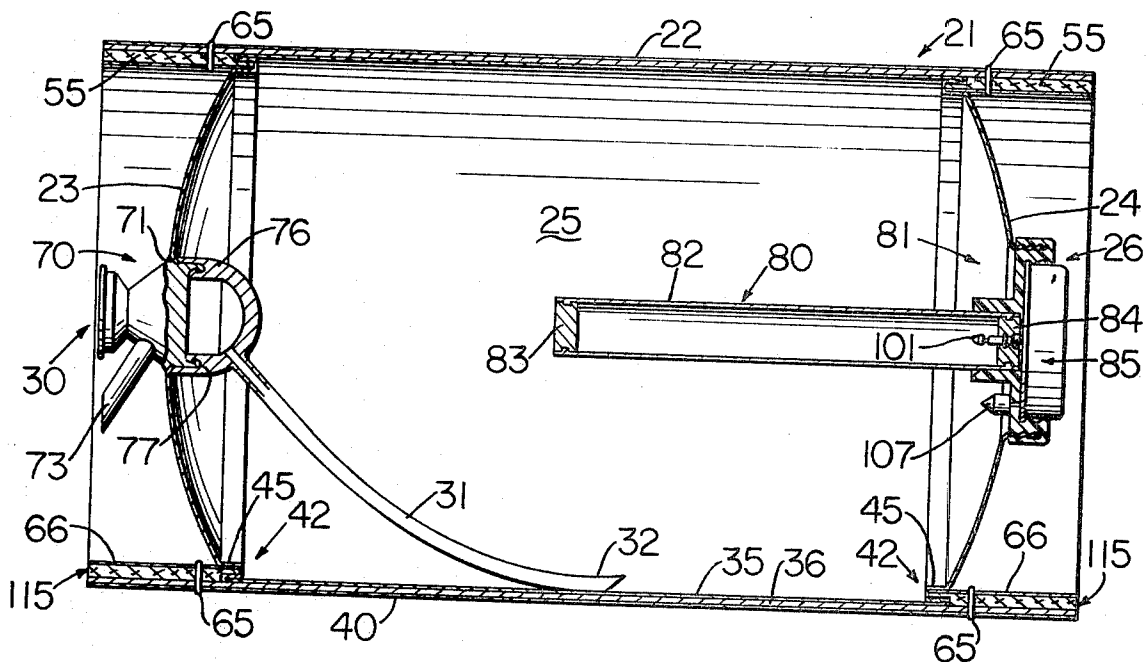
[54] **DISPOSABLE PRESSURIZED FLUID DISPENSER**
12 Claims, 8 Drawing Figs.

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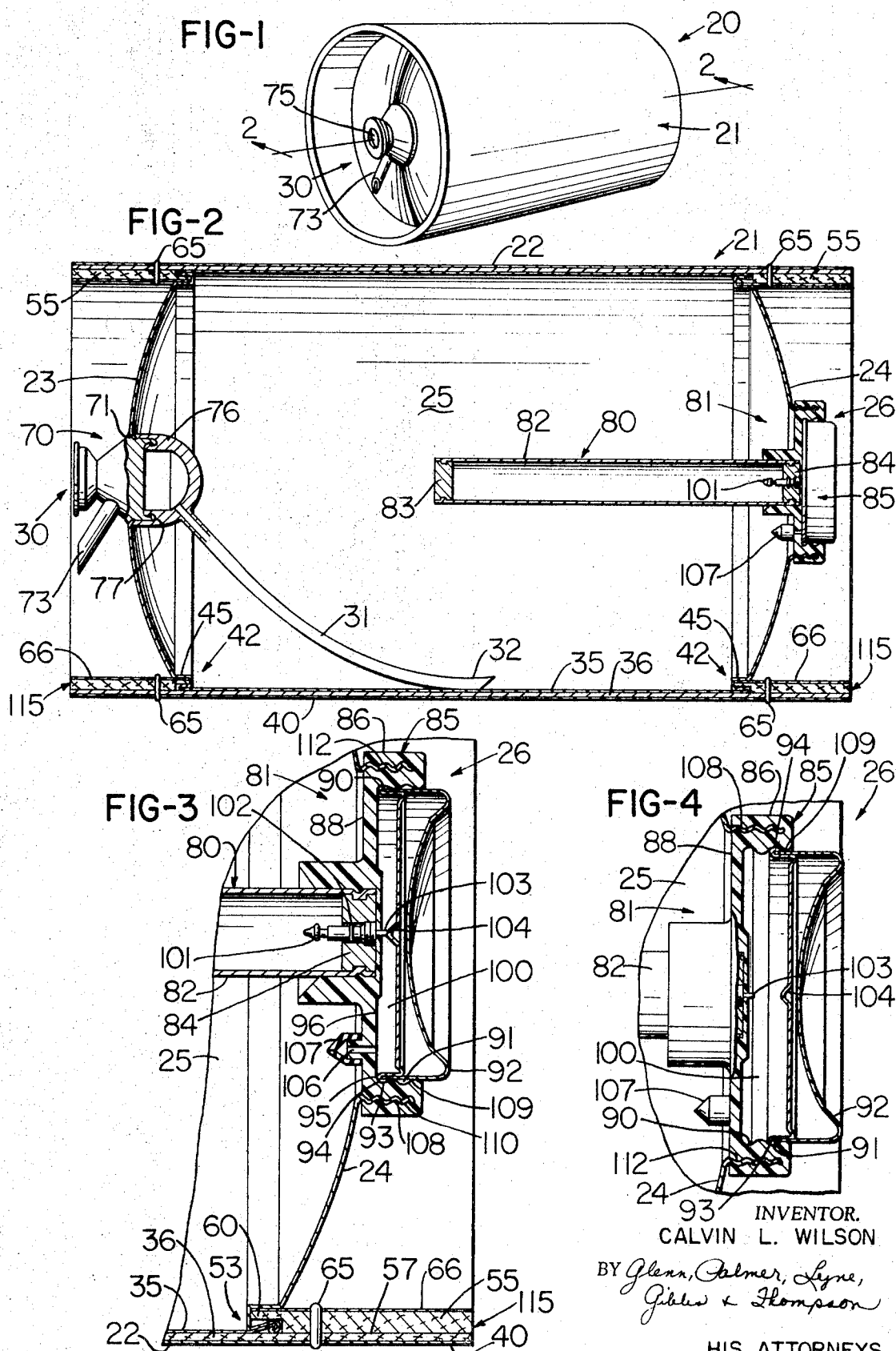
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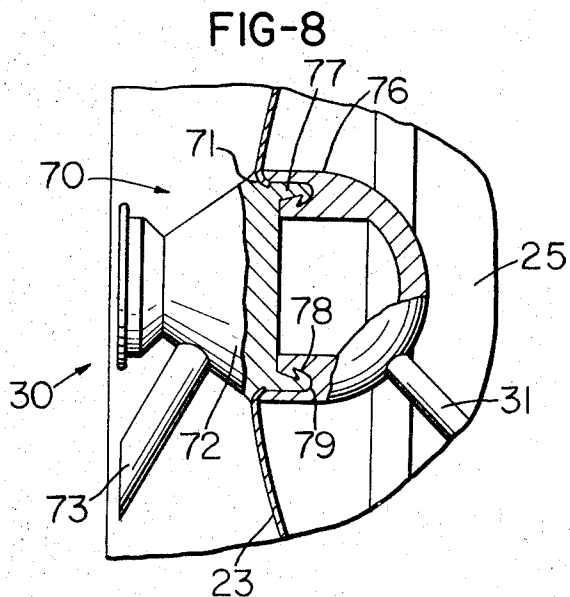
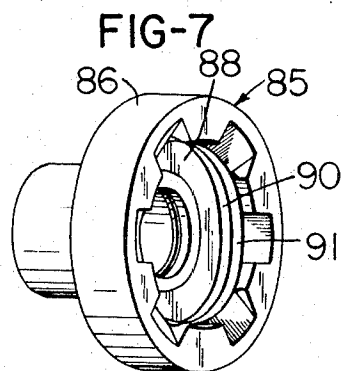
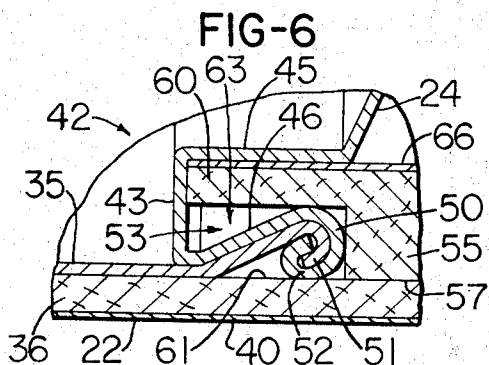
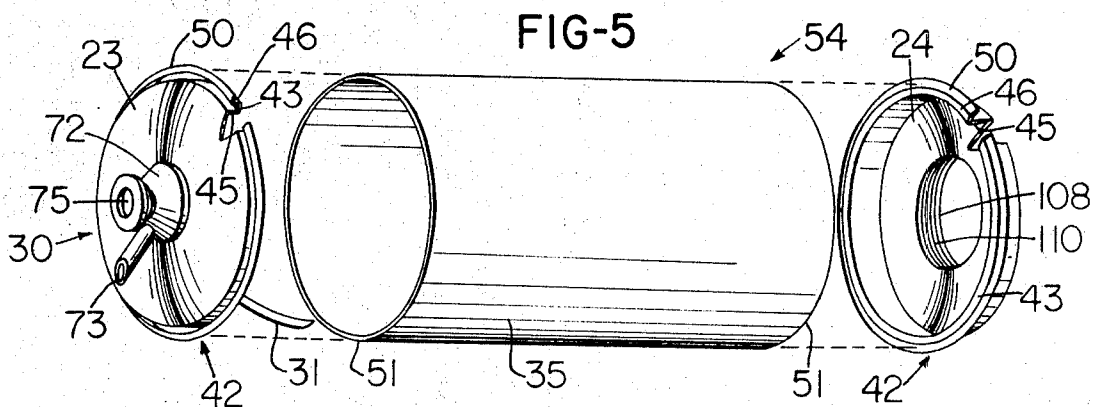
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ABSTRACT: A self-contained disposable automatic dispenser for fluid products which has a simple spigot assembly comprised of a pair of cooperating portions which are arranged on opposite sides of the front wall of the dispenser and snapfitted together while sandwiching the front wall in a fluidtight manner therebetween. The dispenser is also provided with a pressure regulator assembly which has a bellows member which is also snapfitted in position on an associated support therefor and the support has integral safety means assuring the bellows member is prevented from being blown away from the regulator assembly in the event of a faulty regulator assembly.



SHEET 1 OF 2





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DISPOSABLE PRESSURIZED FLUID DISPENSER

BACKGROUND OF THE INVENTION

Presently many fluid products such as carbonated beverages, for example, are sold in comparatively expensive containers capable of withstanding great pressures and which must be cleaned and reused many times to offset the initial cost of such containers. Each of these present containers requires a complex spigot device for dispensing the associated beverage carried therein and generally requires complex means to keep the beverage charged with an associated charging fluid such as carbon dioxide. In addition, many fluid products are presently sold in aerosol form and because of the high pressures involved such aerosol products must be sold in comparatively expensive dispensing devices.

SUMMARY

This invention provides a safe automatic dispensing container or dispenser for fluids, such as carbonated beverages and aerosols of all types, which is capable of withstanding the pressures exerted by these fluids yet such dispenser together with all of its associated components is self contained and very inexpensive enabling the dispenser to be discarded after dispensing the fluid initially contained therein.

Other details, uses, and advantages of this invention will become apparent as the following description of the embodiment thereof presented in the accompanying drawings proceeds.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings show a present exemplary embodiment of this invention, in which:

FIG. 1 is a perspective view of an exemplary dispensing container or dispenser of this invention;

FIG. 2 is an enlarged cross-sectional view taken essentially on the line 2-2 of FIG. 1 and illustrating some portions of such dispenser in elevation;

FIG. 3 is an enlarged fragmentary cross-sectional view of the lower right-hand corner portion of the dispenser as illustrated in FIG. 2;

FIG. 4 is a fragmentary cross-sectional view similar to the upper portion of FIG. 3 particularly illustrating a bellows member comprising the regulator assembly for the dispenser moved axially outwardly along its yokelike support from its normal operating position of FIG. 3 to an outer position on such support;

FIG. 5 is an exploded perspective view of the inner tubular body portion of the exemplary dispenser shown with its opposite end portions spaced away therefrom and with the spigot or front end portion carrying associated components preassembled in position thereon;

FIG. 6 is a greatly enlarged fragmentary cross-sectional view showing the manner in which an end portion of the dispenser is mechanically fastened to an associated end of the tubular body of the dispenser;

FIG. 7 is a perspective view of a yokelike support which is adapted to be fastened to the rear end portion of the dispenser and utilized to support a charging container and its associated pressure regulator valve means; and

FIG. 8 is a greatly enlarged view with parts in section and parts broken away particularly illustrating the spigot assembly fastened in position to the front end portion of the dispenser.

DESCRIPTION OF ILLUSTRATED EMBODIMENTS

In the exemplary embodiment of this invention illustrated in the drawings, a self-contained disposable fluid-dispensing container or dispenser is illustrated and designated generally by the reference numeral 20. The dispenser 20 is of the type commonly used to dispense carbonated beverages such as beer, soft drinks, or the like and comprises housing means 21 defined by a multilayer tubular portion or sidewall 22 and a pair of oppositely arranged end walls which will be referred to

as a front wall 23 and a rear wall 24 for convenience, see FIGS. 1 and 2. The inside layer or chamber-defining wall of the sidewall 22 and the end walls 23 and 24 are suitably fastened together in a fluidtight manner to define a fluid product chamber 25.

The dispenser 20 has a regulator assembly designated generally by the reference numeral 26 which is carried by the rear wall 24 of the housing means 21 and the regulator assembly operatively associates with a fluid such as a carbonated beverage carried within the product chamber 25 to maintain a predetermined minimum pressure on the fluid within the chamber. For convenience and ease of presentation the fluid within the chamber 25 will be referred to throughout this specification as a beverage contained in such chamber.

The dispenser 20 also has a spigot assembly designated generally by the reference numeral 30 which is provided for dispensing the beverage from the chamber 25 in a known manner and the spigot assembly 30 has a siphon tube 31 which has a terminal end portion 32 adapted to be submerged in the beverage within the chamber 25 and in a known manner. The spigot assembly 30 for the exemplary dispenser 20 is fixed to the front wall 23 of the housing means 21 and provides a fluidtight seal between the associated assembly 30 and the front wall 23; yet, the fastening is achieved with optimum simplicity and economy.

The tubular portion 22 of the housing means 21 is comprised of the previously mentioned inside layer or fluid chamber wall and is designated by the reference numeral 35 and such wall is made of a fluid impervious material such as metallic foil, for example. The inside layer or chamber wall 35 is sealed to the oppositely arranged end walls 23 and 24 in a fluidtight manner and in a manner as will be described in detail subsequently. The tubular portion 22 is also comprised of layer means 36 adjoining the inside fluid chamber wall 35 and the layer means 36 defines the main structural portion of the tubular portion 22. The layer means or structural portion 36 may be made of any suitably inexpensive material such as paper, for example, and the structural portion 36 may comprise one or more layers.

In one example of this invention the structural portion 36 was made by spirally winding and suitably adhesively bonding a paper web during the winding operation to define the high-strength structural portion 36. The structural portion 36 assures that the comparatively thin tubular portion 35 is confined and prevented from moving outwardly once a carbonated beverage is introduced into the chamber 25 and charged with a suitable charging fluid such as carbon dioxide.

The tubular portion 22 may also be provided with an outer label 40 made of a moisture-impervious material, such as metallic foil, and the metallic foil label 40 serves the multiple purposes of sealing and protecting the outer surface of the structural portion 36 in a moistureproof manner, providing identification for the contents of the dispenser, and serving as a decorative surface for the dispenser 20. The label 40 may be adhesively fastened in position and generally covers the entire exposed surface of the tubular portion 22.

Each wall 23 and 24 of the exemplary dispenser 20 is shown as being made of a metallic material and has a peripheral flange designated generally in each instance by the reference numeral 42, see FIGS. 5 and 6. Each flange 42 extends completely around its associated wall and has a substantially U-shaped cross-sectional configuration defined by a bight 43 and a pair of legs comprised of an inner leg 45 and an outer leg 46 extending outwardly from opposite ends of the bight 43.

The outer leg 46 has a curled annular extension 50 extending outwardly therefrom which is adapted to be curled around an associated end portion 51 of the tubular layer or member 35 to thereby enable the end portion 51 to be fixed between the inside surface of the terminal end portion of the curled extension 50 and the outer leg 46 to provide a fluidtight seal having high structural strength.

The fastening of each end 23 and 24 in position may be accomplished by any suitable technique and in this example of

the invention the fastening action was achieved using a conventional can seamer. The diameter of each end 23 and 24 was controlled by a swaging operation wherein the curled extension 50 was mechanically compressed by suitable swaging die means moving the outside surface 52 of the extension 50 so that it is arranged substantially within the confines of the maximum diameter of the metallic tubular portion 35. The joint defined by the above-described mechanical swaging will be referred to as a multiple thickness seamed joint 53 and has a roughly frustoconical outer configuration.

Once the front wall 23 and rear wall 24 are seamed and swaged in position against the inner tubular portion 35 the container assembly thus defined, and designated generally by the reference numeral 54 in FIG. 5, may be easily inserted within the structural portion 36 and suitably held in position to prevent axial movement thereof. A suitable adhesive means, or the like, may be provided between the outside surface of the metallic tubular member 35 and the inside surface of the structural portion 36 to hold the assembly 54 in position and prevent axial movement thereof relative to the structural portion 36. However, the assembly 54 may be inserted in position without the provision of an adhesive means between the tubular member 35 and the structural portion 36 and suitably held against axial movement.

The exemplary dispenser 20 has comparatively short tubular sections or collars 55 fixed thereto and defining ends of the tubular portion 22 and the collars 55 may be used as the sole means for holding each assembly 54 axially in position or may be used together with adhesive means between the inner tubular member 35 and the structural portion 36 to hold such assembly axially in position. In addition, each collar 55 provides added strength for the opposite ends of the dispenser 20 assuring that the dispenser will withstand rough handling and may be supported vertically without likelihood of damage to its end portions.

As seen particularly in FIG. 3 each collar 55 has an outer surface 57 adjoining the inside surface of the structural portion 36 and the collar 55 also has an inwardly offset portion 60 which, with the collar 55 fixed in position, cooperates with an oppositely arranged inside annular surface 61 of the structural portion 36 to define an annular groove which is designated generally by the reference numeral 63.

Each collar 55 is fastened in position so that its offset portion 60 is received within an associated U-shaped flange 42 and the associated mechanically seamed and swaged joint 53 is received within an annular groove 63. With this structural arrangement it will be appreciated that the seamed joint 53 is effectively prevented from being pulled apart by high pressures in the product chamber 25. Each collar 55 may be fixed to an associated end portion of the structural portion 36 in any suitable manner such as by adhesive means, rivets, staples, or the like, and in this example of the invention each collar 55 is shown as being fastened in position by a plurality of staples 65.

The collar 55 may be made of any suitable material and provided with offset portion 60 as an integral part thereof. The collar 55 is preferably made of expendable low-cost materials and it has been found that such collar having adequate strength may be made of paper suitably wound as by spiral winding, or the like; also, such collar may be made of materials such as polystyrene. In this example of the invention the collar 55 is shown as being made of paper and has a layer of metallic foil 66 bonded to its inside cylindrical surface to render the inside surface of such collar substantially impervious to moisture.

The front wall 23 has an opening 70 provided therein and defined by a tubular flange portion 71 which in this example is formed as an integral part of the front wall 23. The spigot assembly 30 may comprise first or comparatively small diameter portion 72 which is arranged to extend outwardly of the front wall 23 and will be referred to as outside portion 72. The outside portion 72 has a fluid-dispensing outlet 73 and a normally closed manually operated spigot valve of known construction provided as a part thereof. The spigot valve has a pushbutton

actuator 75 which may be pushed inwardly toward the center of the dispenser 20 to open up the spigot valve and allow flow through the spigot assembly 30 and out of the dispensing outlet 73 in a known manner.

The pushbutton 75 may be held normally outwardly by a mechanical spring to keep the spigot valve closed at all times except when it is desired to dispense beverage therethrough by depressing the button 75 and overriding such spring.

The spigot assembly has a second comparatively larger diameter inside portion 76 which is fastened to the portion 72 so as to sandwich the tubular flange 71 therebetween and provide a fluidtight seal between the spigot assembly 30 and the front wall 23. The portions 72 and 76 of the spigot assembly 30 may be fastened together in any known suitable manner.

To assure that the dispenser 20 of this invention may be made in the most economical manner the portions 72 and 76 are snapfitted together while sandwiching the tubular flange 71 therebetween in a fluidtight manner, see FIG. 8. The snap-fit connection is provided by an annular projection 77 having an inwardly hooking inner portion 78 extending completely around the projection 77 and the projection 77 with its hooking portion 78 are received and held in a locked manner within an annular recess 79 in the inside portion 76 which has a corresponding configuration. Thus, it will be appreciated that the inside portion 76 and outside portion 72 are snapped together in a simple manner by urging such members toward each other while clamping the tubular flange 71 therebetween to provide an economical assembly and a fluidtight seal between the spigot assembly 30 and the front wall 23.

The siphon tube 31 comprising the spigot assembly 30 may be provided as a separate part and fixed to the inside portion 76 in any suitable manner; however, in this example of the invention the siphon tube 31 is provided as an integral part of the inside portion 76. The flow passage means provided in the inside portion 76 and its siphon tube 31 are constructed to assure efficient dispensing of carbonated beverage with minimum foaming.

Reference is now made to FIGS. 3, 4 and 7 of the drawings for a detailed description of the unique and inexpensive regulator assembly 26 comprising the dispenser 20 and the simple and economical manner in which such regulator assembly 26 of the exemplary dispenser 20 is supported on the rear wall 24. The regulator assembly 26 comprises a charging container or tube 80 and a pressure regulator 81 which is operatively connected to the charging container 80 and to the chamber 25 to maintain a predetermined minimum pressure against the carbonated beverage contained within the chamber 25 irrespective of the fluid level of such beverage within such chamber and in a known manner whereby the beverage may be automatically dispensed from the spigot assembly 30 in an automatic manner simply by pressing the button 75.

The charging container 80 contains a suitable charging gas, such as carbon dioxide, for example, which is contained in the container 80 at high pressure. The charging container 80 is comprised of a tubular portion 82 and a pair of oppositely arranged end plugs 83 and 84 which are suitably fixed in position to define a vessel capable of withstanding high internal pressures and the fixing technique utilized is such that the container 80 may be formed in the most economical manner.

The pressure regulator 81 is comprised of a yokelike support 85, see FIGS. 3, 4, and 7, and the support 85 has an integral resilient flange 86 defining the outer periphery thereof and such flange has an inner groove 90 and an outer groove 91 extending inwardly from its inside surface means 88. A bellows member or bellows 92 is provided and carried in nested relation by the flange 86 and the bellows member 92 has an annular portion 93 held by the flange 86 so that an inner edge 94 of annular portion 93 is held in a fluidtight manner against an associated peripheral annular portion 95 of an inner surface 96 of the yokelike support 85 to define a bellows chamber 100 between the support 85 and the bellows member 92.

A metering valve 101 is provided and suitably inserted through an opening 102 in the plug 84 and sealed in a fluid-tight manner and such metering valve may be of known construction and of the type generally referred to as a Schrader-type valve. The metering valve 101 has a telescoping stem 103 which extends within the bellows chamber 100 and is adapted to be engaged by a projection 104 provided on the bellows member 92 and the bellows member 92 may be filled with a suitable fluid of known characteristics at a predetermined temperature and pressure.

The yokelike support 85 has a passage 106 extending therethrough which places the bellows chamber in flow communication with the beverage chamber 25. A one-way check valve 107 may also be provided at one end of the passage 106 to prevent the flow of beverage into the bellows chamber 100.

With the above construction it will be appreciated that once the pressure in the chamber 100 is reduced by the removal of beverage from within the beverage chamber 25 the projection 104 of the bellows member 92 is caused to move inwardly, causing carbon dioxide from within the charging container 80 to move into the bellows chamber 100, through the opening or passage 106, and through the check valve 107 into the chamber 25 until the pressure within chamber 25 reaches a predetermined and accurately controlled level whereupon the pressure in the bellows chamber 100 is essentially at the same level as in the chamber 25, causing the projection 104 to again move away from the stem 103 and stop the flow of carbon dioxide. With this technique a substantially constant pressure is maintained on the carbonated beverage within the chamber 25 irrespective of the beverage level within such chamber.

As previously indicated, the flange 86 of the yokelike support 85 has an outer groove 91 provided therein and the outer groove 91 serves a dual purpose of receiving the annular portion 93 of the bellows member 82 to support such bellows member prior to finally installing the member 82 in position to activate the regulator assembly 26 as well as serving to receive annular portion 93 and prevent the bellows member 92 from being blown off in the event of a malfunction as will now be explained.

In particular, it will be appreciated that the metering valve 101 normally meters charging fluid into the bellows chamber 100 from the high pressure container 80. However, there may be an excessive pressure buildup in the bellows chamber 100 because the valve 101 may leak or such valve may be improperly sealed to its plug 84. The normal tendency under these circumstances would be for the bellows member to be blown away from the support 85; however, in the event of such excessive pressure buildup in the bellows chamber 100 bellows member 92 is moved outwardly causing its annular portion 93 to be received in the outer groove 91 and causing an edge portion of the projection 93 to engage an annular surface portion 109 defining the outer groove 91 whereby the member 92 is, in effect, caught or trapped in position.

As the member 92 is blown outwardly and caught by surface portion or projection 109 of the flange 86, the inner edge 94 of annular portion 93 is simultaneously moved away from the support 85 venting the bellows chamber 100 to atmosphere in a safe manner and thus instantaneously relieving the excessive pressure buildup within the bellows chamber 100. It will be appreciated that the installation presented is of optimum simplicity in that the bellows member 92 is snapfitted in position and thus is fastened with minimum installation time while providing a unique high-strength and safe support which eliminates the likelihood of injury or damage to persons or structures located adjacent the rear wall 24 of the dispenser 20.

The yokelike support 85 may be fixed to the rear end portion 24 in any suitable manner; however, in this exemplary embodiment of the invention, the support 85 is threadedly fastened to the rear wall 24 as will now be explained.

The rear wall 24 has an outwardly extending tubular flange portion 108 provided with a rolled external thread 110. The yokelike support 85 has cooperating female threads 112 pro-

vided in its flange 86 and the threads 112 are threaded in position over the threads 110 to fasten the support 85 in position so that the charging container 80 extends inwardly within the dispenser 20 in a cantilevered manner and the bellows member 92 is fastened in position against the exterior surface of the support 85 and has parts of its outer surfaces exposed to ambient temperatures and pressures.

The support 85 may be formed of a suitable material so that its flange 86 will have a resilient character to enable to bellows member 92 to be snapfitted in position as previously described, while supporting such bellows member in a high-strength manner. The resilient character of the flange 86 is also such that the trapping or catching of member 92 is efficiently provided, as previously described, in the event of excessive pressure buildup in the bellows chamber 100. The yokelike support 85 is preferably made of a comparatively inexpensive material and it has been found that such member may be made of plastic material such as a high-density polyethylene by injection molding so that the female threads 112 are provided as an integral part thereof yet the support 85 has the desired strength and resilient character.

To assure that the dispenser 20 will retain its high strength even in damp environments, the exposed annular edges 115 at opposite ends of tubular portion 22 are sealed in a moistureproof manner. In particular, it has been found that a moisture-impervious adhesive or a lacquer containing aluminum powder may be effectively applied to the edges 115 so as to seal the exposed edges of the collars 55 and structural member 36.

The tubular inner layer or member 35 of the dispenser 20, front wall 23, and rear wall 24 may be made of any suitable material which is acceptable for containing a fluid under pressure in the manner described herein. Further, the materials selected for the housing means 21 should be capable of withstanding the high pressures normally involved in storing, transporting, and dispensing a carbonated beverage such as beer or a carbonated soft drink.

The housing means 21 comprising the dispenser 20 should also be made in an economical manner using expendable or disposable materials. For example, in one application of this invention wherein a 6½-quart capacity disposable self-contained beer keg was provided the tubular inside portion or wall 35 was made of 5086-H36 aluminum .006 inch thick, the front wall 23 and rear wall 24 were made of 5086-H36 reannealed to approximately H14 temper before drawing and .015 inch thick and the walls 23 and 24 were contoured in the manner shown in the drawings, the structural support 36 was comprised of a spirally wound paperboard construction having a .096 inch wall thickness, and the collars 55 were made of spiral wound paperboard and had a wall thickness of .217 inch. The completed dispenser 20 made essentially as described above is generally capable of dispensing highly carbonated beverages and at pressures within the chamber 25 in excess of 100 p.s.i.g.

The simplicity with which the dispenser 20 is assembled will be readily apparent from the drawings and it will be seen that the inner tubular member 35 has the front walls 23 with its spigot assembly 30 preassembled thereon and the rear wall 24 fastened in position thereto to define an assembly 54. The assembly 54 is then inserted in the structural member 36 and the collars 55 are installed in position. The regulator assembly 26 is shipped as a separate unit and may be filled with carbon dioxide gas prior to shipment. Once the dispenser 20 has been filled with a carbonated beverage the regulator assembly 26 is installed therein and suitably activated whereupon the filled and self-contained dispenser 20 is ready for dispensing use.

In an alternate embodiment of the dispenser, the regulator assembly is disposed entirely within the container but is not attached thereto, so that the regulator assembly is adapted to be immersed in the liquid to be dispensed and is free to move within the container. The regulator assembly is provided initially with a spacer acting between the yokelike support and its associated bellows operating end or bellows member. This

spacer is made of a substance which is soluble or softenable in the liquid. When the dispenser is charged, the regulator is submerged in the liquid and the container promptly sealed. Once the spacer has dissolved or softened, the bellows and valve will function in a similar manner as previously discussed.

While present exemplary embodiments of this invention, and methods of practicing the same, have been illustrated and described, it will be recognized that this invention may be otherwise variously embodied and practiced within the scope of the following claims.

I claim:

1. A self-contained disposable dispenser for dispensing a fluid under pressure comprising, housing means defining a product chamber for said fluid, said housing means comprising a multilayer cylindrical portion having an inside layer which is contacted by said fluid and is made of a comparatively thin fluid-impervious material having a cylindrical outside surface and layer means adjoining said outside surface over substantially its entire area, said layer means defining the main structural portion of said cylindrical portion and said structural portion assuring said inside layer is prevented from moving outwardly by said fluid under pressure, a regulator assembly carried by said housing means and operatively associating with the fluid carried within said chamber to maintain pressure on said fluid, and a spigot assembly carried by said housing means and provided for dispensing said fluid from within said chamber.

2. A dispenser as set forth in claim 1 in which said inside layer comprises a layer of metallic foil fixed against said structural portion and said structural portion is comprised of a non-metallic material.

3. A self-contained disposable fluid dispenser comprising: housing means defining a fluid product chamber; said housing means comprising a multilayer tubular portion having an inside layer made of a fluid-impervious material and layer means adjoining said inside layer defining the main structural portion of said tubular portion; said housing means further comprising an end wall having a peripheral flange of substantially U-shaped cross-sectional configuration extending completely therearound, said U-shaped flange having a bight and a pair of outwardly extending legs including an outer leg which terminates in an annular curled extension, and said inside layer having an end portion which is fixed between said extension and said outer leg to define a multiple thickness mechanical joint having high strength; a regulator assembly carried by said housing means and operatively associating with a fluid carried within said product chamber to maintain pressure on said fluid; and a spigot assembly for dispensing said fluid from within said chamber.

4. A dispenser as set forth in claim 3 in which said tubular portion has a comparatively short tubular section fixed thereto adjacent said one end wall, said tubular section having an inwardly offset portion which cooperates with an oppositely arranged inside annular surface of said structural portion to define an annular groove, said annular groove receiving said mechanical joint therewithin while said projection is received within said U-shaped flange to provide a construction which assures said end wall will be held firmly in position even with excessive pressures within said chamber.

5. A dispenser as set forth in claim 3 in which the outside surface of said mechanical joint has an inwardly inclined configuration and an outer peripheral outline which corresponds to and is no greater than the peripheral outline of the inside surface of said structural portion.

6. A self-contained disposable fluid dispenser comprising, housing means defining a fluid product chamber, said housing means comprising a multilayer tubular portion having an inside layer made of a fluid-impervious material and layer means adjoining said inside layer defining the main structural portion of said tubular portion, a regulator assembly carried by said housing means and operatively associating with a fluid carried within said product chamber to maintain pressure on said fluid, and a spigot assembly for dispensing said fluid from

within said chamber, said housing means comprising an end wall having an opening therein defined by a tubular flange and said spigot assembly having a first and a second portion arranged essentially on opposite sides of and sandwiching said tubular flange therebetween to provide a fluidtight seal between said end wall and said spigot assembly, said first and second portions being snapfitted together.

7. A dispenser as set forth in claim 1 in which said cylindrical portion comprises a right circular cylindrical portion and said housing means further comprises a pair of end walls fixed to opposite end portions of said right circular cylindrical portion in sealed relation with only said inside layer, each of said end walls being made of a metallic material and having a substantially uniform thickness throughout, said regulator assembly being carried by one of said end walls and comprising a charging container containing a pressurized charging fluid and a pressure regulator operatively associating with said charging container and said chamber to maintain a predetermined minimum pressure against the fluid within said chamber irrespective of the fluid level within said chamber, said spigot assembly being carried by the other of said end walls.

8. A dispenser as set forth in claim 7 in which said pressure regulator has a bellows member which has parts of its outer surfaces exposed to ambient pressures and temperatures.

9. A self-contained disposable dispenser for dispensing a fluid under pressure comprising, housing means defining a product chamber for said fluid, said housing means comprising a multilayer tubular portion having an inside layer made of a comparatively thin fluid-impervious material and layer means adjoining the entire outside surface of said inside layer, said layer means defining the main structural portion of said tubular portion and said structural portion assuring said inside layer is prevented from moving outwardly by said fluid under pressure, a regulator assembly carried by said housing means and operatively associating with the fluid carried within said chamber to maintain pressure on said fluid, and a spigot assembly carried by said housing means and provided for dispensing said fluid from within said chamber, said tubular portion comprising a right circular cylindrical portion and said housing means further comprising a pair of end walls fixed to opposite end portion of said right circular cylindrical portion in sealed relation with said inside layer, each of said end walls having a substantially uniform thickness throughout, said regulator assembly being carried by one of said end walls and comprising a charging container containing a pressurized charging fluid and a pressure regulator operatively associating with said charging container and said chamber to maintain a predetermined minimum pressure against the fluid within said chamber irrespective of the fluid level within said chamber, said pressure regulator being carried within said product chamber and having a bellows member which is exposed solely to pressures and temperatures in said product chamber, said spigot assembly being carried by the other of said end walls.

10. A self-contained disposable fluid dispenser comprising: housing means defining a fluid product chamber; said housing means comprising a multilayer tubular portion having an inside layer made of a fluid-impervious material and layer means adjoining said inside layer defining the main structural portion of said tubular portion; a regulator assembly carried by said housing means and operatively associating with a fluid carried within said product chamber to maintain pressure on said fluid; and a spigot assembly for dispensing said fluid from within said chamber; said regulator assembly comprising, a yokelike support fastened to said housing means, said support having a resilient annular flange defining the outer periphery thereof with said flange having an inner groove and an outer groove formed therein, a bellows member having an annular portion thereof snapfitted within said inner groove, said annular portion having an inner edge which is held in a fluidtight manner against said support to define a bellows chamber between said support and said bellows member, a charging container containing a pressurized charging fluid and carried by said support, a metering valve operatively connected

between said bellows member and said charging container, said metering valve being actuated by said bellows member to meter said charging fluid into said bellows chamber, and a passage from said bellows chamber to said product chamber, said metering valve normally metering charging fluid into said bellows chamber and hence into said product chamber through said passage and in the event of excessive pressure buildup in said bellows chamber said bellows member is blown outwardly so that said annular portion is received within said outer groove and caught by surface means defining said outer groove to prevent further outward movement thereof while simultaneously said inner edge is moved away from said sup-

port to vent said bellows chamber to atmosphere in a safe manner and relieve the excessive pressure buildup.

11. A dispenser as set forth in claim 7 in which said inside layer is defined as a layer of aluminum foil, said layer means defining said structural portion is made of paper, and further comprising adhesive means between said inside layer and said layer means holding said inside layer firmly in position.

12. A dispenser as set forth in claim 7 in which said charging container is defined by a cylindrical tube having a pair of oppositely arranged end plugs.

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