

[72] Inventors **Robert E. Sitton**
 4829 Bay Court Ave., Tampa, Fla. 33611;
Milton P. Zamore, 57 Martinique, Tampa,
Fla. 33606; Howard H. Burris, 300
Dolphin St., Gulf Breeze, Fla. 32561

[21] Appl. No. 12,313
 [22] Filed Feb. 18, 1970
 [45] Patented Oct. 12, 1971

[56] **References Cited**

UNITED STATES PATENTS

910,213	1/1909	Mimesch et al.....	137/614.2 X
2,241,097	5/1941	Mezzapesa	222/89 X
2,372,392	3/1945	Pletman	222/402.15 X
2,539,349	1/1951	Giles	222/400.7
3,272,404	9/1966	Graves et al.....	222/400.7 X

Primary Examiner—Robert B. Reeves
Assistant Examiner—Larry Martin
Attorneys—A. Yates Dowell and A. Yates Dowell, Jr.

[54] **CONTAINER DISPENSER**
 3 Claims, 9 Drawing Figs.

[52] U.S. Cl..... 222/80,
 222/399, 137/614.19

[51] Int. Cl..... B67b 7/24

[50] Field of Search..... 222/80, 82,
 83, 89, 91, 335, 378, 399, 400.7, 402.1, 402.18,
 402.15, 562, 563; 137/329.1, 329.4, 614.2, 614.19

ABSTRACT: Apparatus for dispensing effervescent liquid contents from a container and for sealing the container when a portion of the contents remains therein. The apparatus includes a first valve structure carried by the container and a second valve structure selectively attachable to the first structure in a manner that operation of the second valve structure will operate the first valve structure to permit the contents of the container to be dispensed.

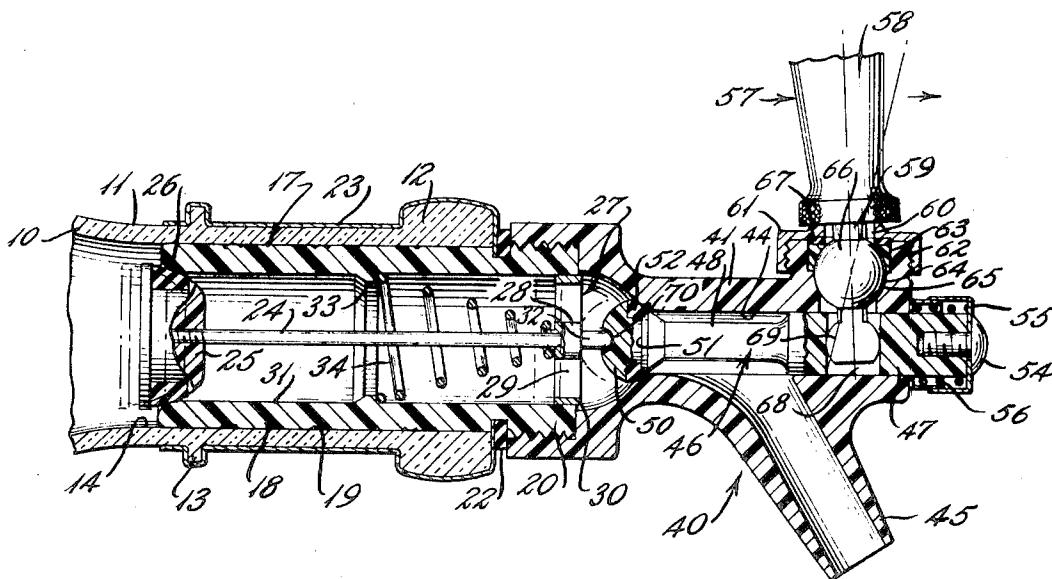


FIG. 1

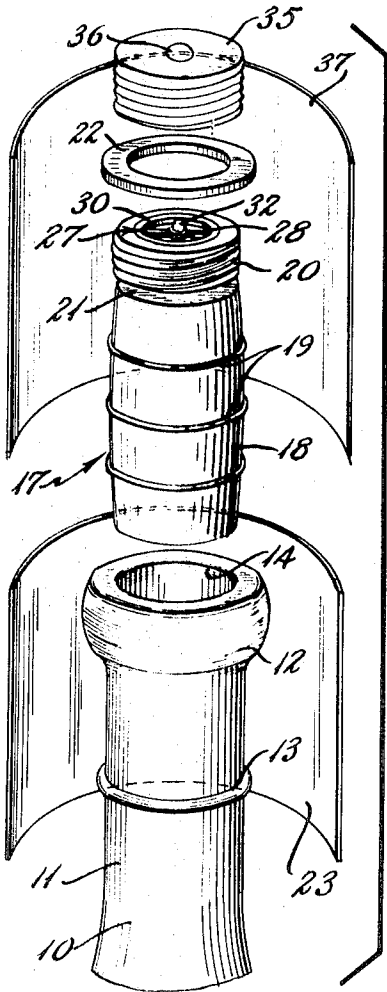


FIG. 2

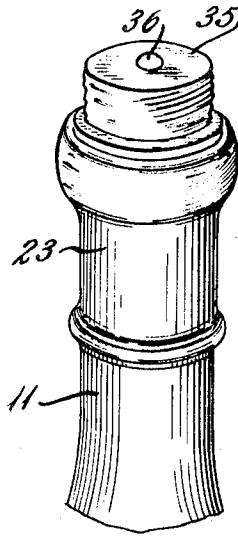


FIG. 3

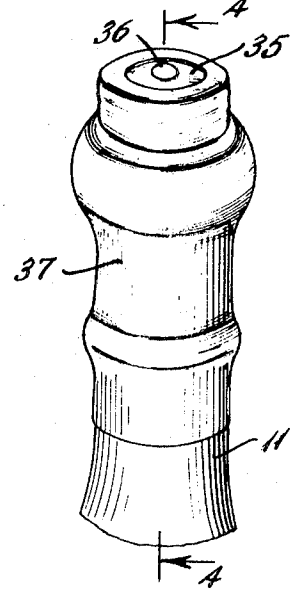


FIG. 5

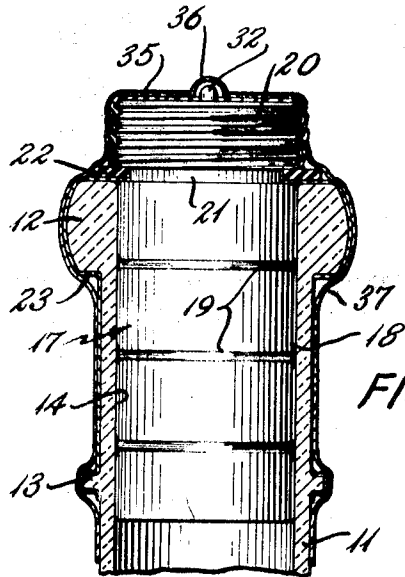
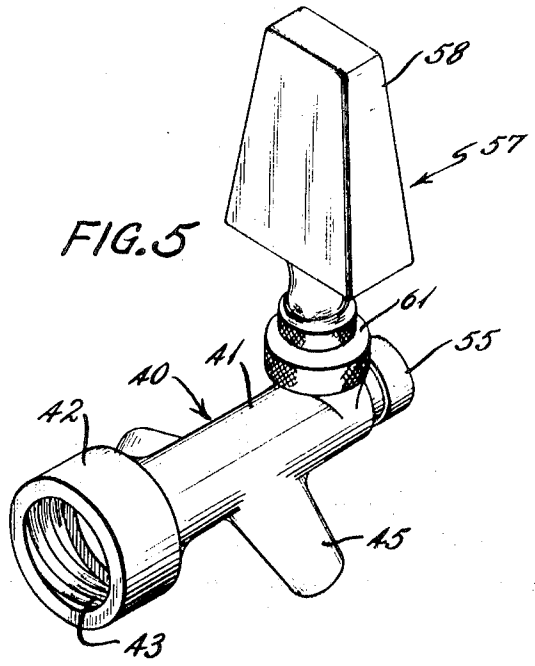


FIG. 4

INVENTORS
 ROBERT E. SITTON,
 MILTON P. ZAMORE and
 HOWARD H. BURRIS

BY *G. J. ...*
 ATTORNEYS

FIG. 6

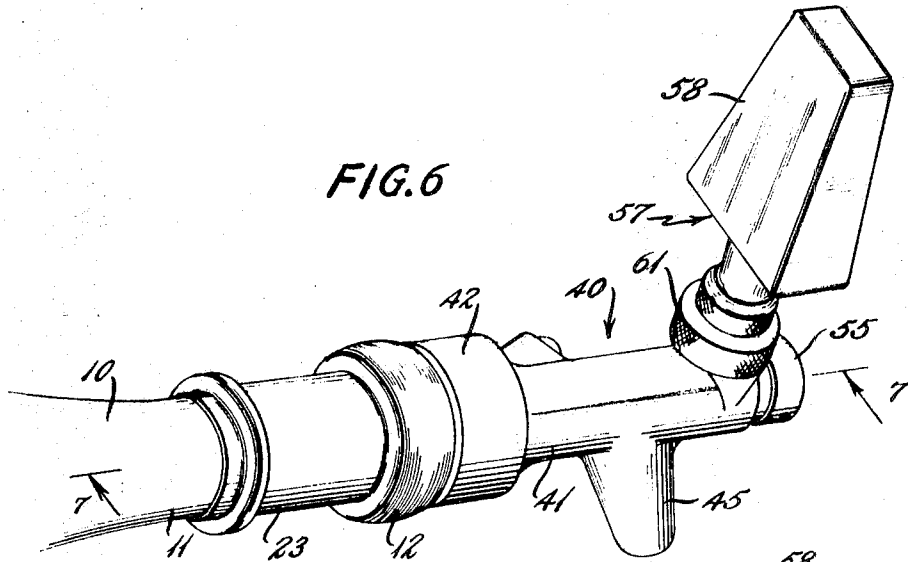


FIG. 7

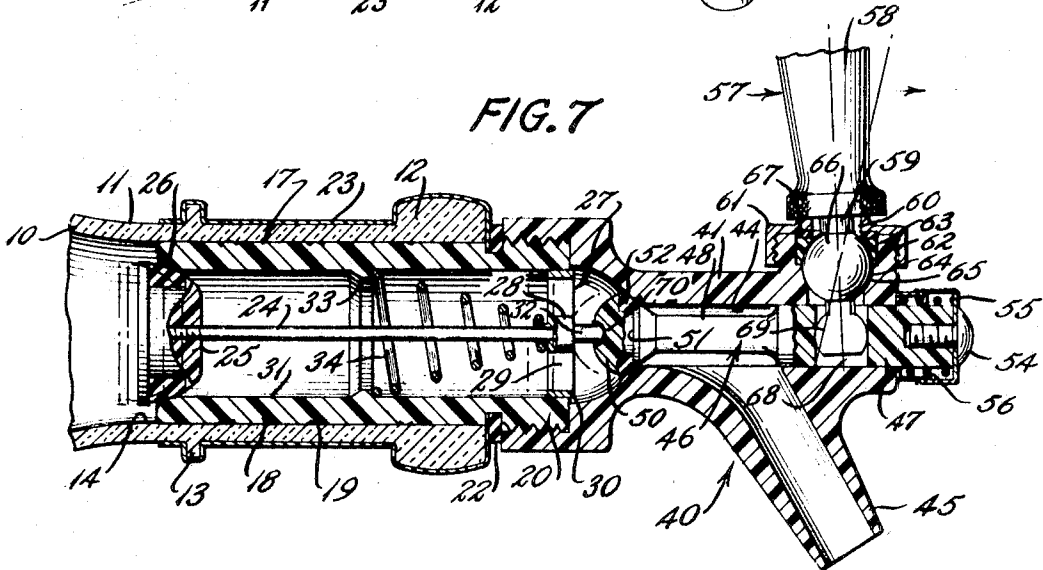
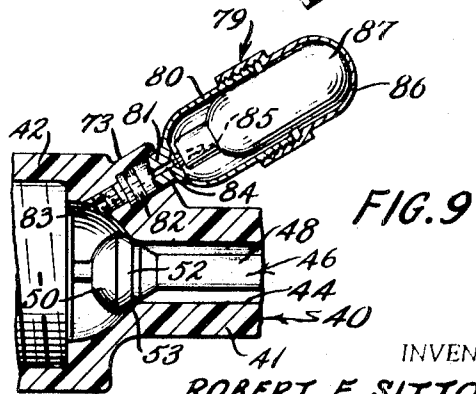
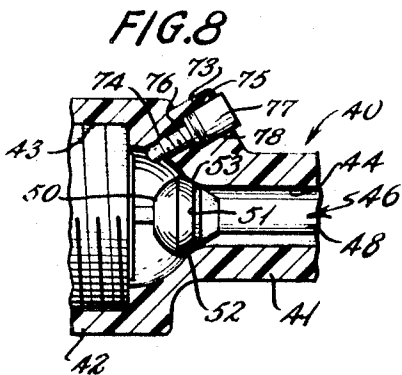


FIG. 8



INVENTORS

ROBERT E. SITTON,
MILTON P. ZAMORE and
HOWARD H. BURRIS

BY

G. Z. ...
ATTORNEYS

CONTAINER DISPENSER

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates generally to the dispensing of fluid material from a container and relates particularly to valve structures of various kinds utilized for dispensing liquids under pressure from a container and, when the liquid is not being dispensed, for maintaining the pressure within the container until the contents are exhausted.

2. Description of the Prior Art

Heretofore dispensing mechanisms have been provided for discharging liquids under pressure from a container and some of the prior devices have been applicable to self-contained pressurized containers for champagne, soft drinks, beer, and other liquids which are either charged with effervescent gas or have developed such effervescence during the fermentation process. These prior art devices have not been entirely satisfactory for many reasons, including the difficulty and expense of manufacture, the necessity of opening the container to apply the dispensing mechanism, the leakage factor or not being capable of sustaining the airtight integrity of the container, their bulky and complicated nature, the necessity to utilize an outside source of pressure, and for these and other reasons prior devices have not met with commercial success.

As a specific example, it has been difficult to purchase a glass of champagne without purchasing the entire bottle or container, for the obvious reason that once the bottle is opened and air is admitted into the bottle, the gases created during the fermentation process escape and the contents go flat and lose their taste.

SUMMARY OF THE INVENTION

The present invention includes a stopper or first portion which can be placed within the container at the time the contents are placed therein and then sealed, or can be placed in the container immediately prior to use. The stopper or first portion includes a valve member which is maintained in normally closed position by a spring or the like. A second portion or portable dispenser is provided which can be selectively attached to the first portion by screw threads or the like, and such second portion includes a second valve member having an operating handle. When the first and second portions are assembled, the second valve member will be substantially in engagement with the valve member of the first portion so that operation of the operating handle will move the second valve member and the first valve member against the tension of the spring of the first valve member and will unseat both valve members. When the operating handle is released, the spring of the first valve member will seat both valve members to shut off the flow of fluid from the container and will prevent any air from entering such container.

It is an object of the invention to provide a two-piece container dispenser wherein one piece can be inserted within the container and the second piece can be attached to the first piece, and with each piece having a separate valve arranged in cooperative relationship so that operation of the valve of the second piece will open both valves and a resilient member carried by the first piece will close both valves.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an exploded perspective of the stopper which is inserted into the neck of a container.

FIG. 2 is a perspective illustrating the structure of FIG. 1 in assembled relation.

FIG. 3 is a perspective similar to FIG. 2 showing the parts sealed together.

FIG. 4 is an enlarged section on the line 4—4 of FIG. 3.

FIG. 5 is a perspective view of the faucet portion.

FIG. 6 is a perspective illustrating the stopper and faucet portions in assembled relation.

FIG. 7 is an enlarged section on the line 7—7 of FIG. 6.

FIG. 8 is an enlarged fragmentary detail section of the faucet portion shown in FIG. 5 and illustrating a pressurized gas inlet port.

FIG. 9 is a section similar to FIG. 8 with a pressurized gas attachment and cartridge in position.

DESCRIPTION OF THE PREFERRED EMBODIMENT

With continued reference to the drawings, a container 10 is provided in which a gas charged liquid, such as champagne, beer, carbonated drinks, or the like, can be stored, transported and sold. The container includes a neck 11 having an enlarged lip 12 and if desired may have a second locking enlargement 13 spaced from the lip 12 and projecting outwardly from the neck 11. The container 10 and the neck 11 are hollow and such neck has a smooth generally cylindrical inner periphery or bore 14 which is normally closed and sealed by a cork or cap (not shown).

Within the neck 11 a stopper or first dispenser portion 17 is adapted to be inserted either at the time the liquid is placed in the container, or at the time the container is opened by removing the cap or other closure member. The stopper includes an elongated generally cylindrical tubular body 18 having a plurality of spaced outwardly extending peripheral rings 19 which engage the inner periphery 14 of the neck and prevent the passage of air or gas between the inner periphery of the neck and the stopper 17. The peripheral rings 19 also grippingly engage the inner periphery 14 and resist axial movement of the stopper. The outer end of the stopper is provided with a threaded portion 20 separated from the main exterior portion of the body 18 by an undercut recess 21. The threaded portion 20 is adapted to extend outwardly from the neck of the container and in order to provide a fluid-tight connection a gasket 22 is mounted within the recess 21 and extends radially outwardly from the stopper 17 in a position to engage the end of the neck 11.

As illustrated in FIGS. 1, 2, 4 and 7, the stopper 17 can be locked within the neck of the container by a thin sheet of flexible material 23 of sheet aluminum, plastic or the like having one end received within the recess 21 and with the main portion of the sheet being formed to the configuration of the lip 12, neck 11 and locking enlargement 13. Within the stopper 17, a valve stem 24 is located substantially axially thereof and such valve stem is connected at one end to a valve 25 which normally engages a valve seat 26 formed at one end of the body 18. A spider or guide 27 is connected to the opposite end of the valve stem 24 and such guide includes a central portion 28 connected by radially extending arms 29 to a ring 30 slidably received within the bore 31 of the body 18. The central portion 28 of the guide is provided with an outwardly extending nipple or projection 32 for a purpose which will be described later.

In order to maintain the valve 25 in engagement with the valve seat 26, the body 18 has an inwardly extending annular ledge 33 adapted to receive one end of a resilient member such as a conical or helical spring 34, the opposite end of which engages the guide 27 and urges such guide to the right, as illustrated in FIG. 7. The spring 34 will maintain the valve 25 in engagement with the valve seat 26 until the projection 32 and the valve stem 24 are moved toward the left in FIG. 7 against the tension of the spring. To prevent accidental movement of the valve stem, a cap 35 is provided which threadedly engages the threaded portion 20 and such cap is provided with a central bulbous portion 36 which surrounds and is spaced from the nipple or projection 32. The bulbous portion 36 prevents accidental opening of the valve 25.

If desired a protective cover or shield 37 can be applied over the cap 35 and the flexible material 23 and function as a seal to prevent unauthorized opening of the container.

In the above description it is assumed that the stopper is placed within the neck of the container at the time that the fluid is introduced thereinto; however, it is contemplated that the stopper 17 could be omitted and the opening of the con-

tainer could be closed by a conventional cork which is wired or otherwise attached to the neck 11, or a cap which is crimped to the lip 12. When the contents of the container are to be dispensed, the cork or cap is removed, after which the stopper 17 can be inserted into the neck 11.

When it is desired to dispense the contents of the container, the protective cover or shield 37 is removed at least in the area of the cap 35, after which the cap is removed from the stopper 17 and discarded. A faucet-type dispenser or second portion 40 is provided including a body 41 having an enlarged end portion 42 with a threaded recess 43. The threads of the recess complementarily engage the threads of the portion 20 so that the dispenser 40 can be connected to the stopper 17. The enlarged end portion 42 is adapted to engage the gasket 22 to prevent the discharge of liquid through the threads.

It is contemplated that a separate gasket (not shown) could be located between the end of the stopper 17 and the bottom of the recess 43. The body 41 has a central bore 44 communicating with an angularly disposed discharge spout 45. Within the bore 44 a valve stem 46 is provided having a barrel portion 47 and a reduced portion 48. The end of the reduced portion 48 remote from the barrel portion 47 is provided with a bulbous enlargement 50 having an annular recess 51 for the reception of an O-ring 97 valve 52 which engages a valve seat 53 in the bore 44.

The end of the barrel portion 47 remote from the reduced portion 48 extends outwardly of the body 41 and is connected by a fastener 54 to a telescopic housing 55. A coil spring 56 is disposed about the barrel portion 47 within the housing 55 and such spring normally urges the movable portion of the housing 55 and the valve stem 46 to the right, as illustrated in FIG. 7, so that the valve 52 normally is in engagement with the valve seat 53. The valve stem 52 can be unseated by applying a pressure axially of the valve stem 46 against the tension of the spring 56. However, in order to provide better control of the valve, as well as to obtain a mechanical advantage, an operating lever 57 is provided.

The operating lever includes a handle 58 connected to a shaft 59 which extends through an opening 60 in a screwcap 61 threadedly engaging a boss or enlargement 62 on the body 41. The enlargement 62 is provided with a central recess 63 connected by a spherical seat 64 to an opening 65 which extends into the bore 44 of the body. A ball or sphere 66 is connected to the shaft 59 and is adapted to cooperatively engage the spherical seat 64. If desired a collar 67 having a spherical inner surface may be provided within the recess 63 and between the ball 66 and the screwcap 61 to retain the ball against the spherical seat 64. The barrel portion 47 of the valve stem 46 is provided with an elongated opening 68 generally in alignment with the opening 65 of the enlargement 62 and such elongated opening 68 is adapted to receive a shoe 69 connected to and extending outwardly from the ball 66. As illustrated in FIG. 7, the operating lever 57 is adapted to swing about the center of the ball 66 and since the distance between the center of the ball and the shoe 69 is substantially smaller than the distance to the end of the handle 58, a substantially mechanical advantage is obtained.

In order to operate the valve 25 when the operating lever 57 is operated, the bulbous enlargement 50 is provided with a central recess or dimple 70 of a size to receive the nipple or projection 32 carried by the guide 27. When the dispenser 40 is attached to the stopper 17, the projection 32 is received within the recess 70 and is substantially in engagement therewith. Movement of the valve stem 46 will move the valve stem 24 so that the valves 52 and 25 will open substantially simultaneously. When pressure on the valve stem 46 is relieved, the springs 34 and 56 will urge both valves into seating engagement with their respective valve seats.

With reference to FIGS. 8 and 9, it may be desirable to charge the contents of the container with a pressurized gas such as carbon dioxide. In order to do this, the body 41 is provided with a boss or enlargement 73 adjacent to the end portion 42 and such boss enlargement has a threaded bore 74 and a counterbore 75 providing a shoulder 76. A plug 77 having an O-ring gasket 78 normally is threadedly connected to the bore

74 to prevent the loss of gas pressure or fluid through such bore. When it is desired to charge the liquid within the container, the plug 77 is removed and a carbon dioxide cartridge housing 79 is inserted.

The housing 79 includes a lower portion 80 having an extension 81 with an O-ring gasket 82 which is receivable within the counterbore 75 and a threaded reduced extension 83 received within the bore 74. An opening 84 extends axially through the extensions 83 and 81 and through a piercing point 85 to provide communication between the interior of the lower housing portion 80 and the bore 44 of the body 41. The upper portion 86 of the housing 79 threadedly engages the lower portion 80 to provide a gastight enclosure for a carbon dioxide cartridge 87.

The cartridge 87 is of conventional construction and is provided with a relatively soft pierceable plug on one end so that after the housing 79 is connected to the body 41, rotation of the upper portion 86 will move such upper portion toward the lower portion and cause the piercing point 85 to penetrate the plug of the cartridge and permit gas to escape from the cartridge through the opening 84 into the area between the valves 52 and 25. The pressure of the gas will force the valve 52 against the valve seat 53 and will force the valve 25 away from the valve seat 26 so that the carbon dioxide or other gas will be introduced into the liquid contents of the container but cannot escape through the discharge spout 45. As soon as the pressure within the valve body 41 and stopper 17 is relieved by discharging the gas into the container, the spring 34 again will close the valve 25.

It is noted that all interior surfaces of the stopper 17 and the dispenser 40 are smoothly and gently curved to avoid any sudden changes of direction of the material being discharged which would cause excessive amount of foaming of the material.

We claim:

1. Apparatus for dispensing the pressurized contents from a container comprising an elongated generally tubular stopper for insertion into the container, said stopper having a first valve seat, a first valve stem located axially of said stopper, a first valve mounted on said first valve stem, guide means fixed to said first valve stem in a position remote from said first valve, first spring means carried by said stopper an engageable with said guide means for urging said first valve into sealing engagement with said first valve seat, independent faucet means detachably mounted on said stopper, said faucet means having an axial bore, a second valve seat at one end of said bore, a second valve stem disposed axially of said bore, a second valve mounted on said second valve stem for engaging said second valve seat, second spring means carried by said faucet means and engaging said second stem for urging said second valve into sealing engagement with said second valve seat, said second valve stem being alignment with and at least in proximity to said first valve stem, an operating handle mounted on said faucet means and engaging said second valve stem for moving the same axially against the tension of said second spring means, said second valve stem moving said first valve stem against the tension of said first spring means, said faucet means having a discharge spout communicating with said axial bore, whereby movement of said operating handle in one direction will move said first and second valve stems against the tension of said first and second spring means to unseat said first and second valves and when said operating handle is released said first and second valves will be seated by said first and second spring means.

2. The structure of claim 1 including a gas inlet port in said faucet means between said first and second valves, and plug means normally closing said gas inlet port.

3. The structure in claim 1 including an adjustable housing for a gas cartridge, said housing having means for engaging said faucet means and said inlet port, said housing having an opening providing communication between said cartridge housing and the interior of said faucet means when assembled, and said housing having means for rupturing the gas cartridge so that gas under pressure will be introduced into said faucet means between said first and second valves.