May 5, 1970 C. L. WILSON ET AL 3,510,104

DRIPLESS SPIGOT CONSTRUCTION

Filed Aug. 8, 1967 6 Sheets-Sheet 1

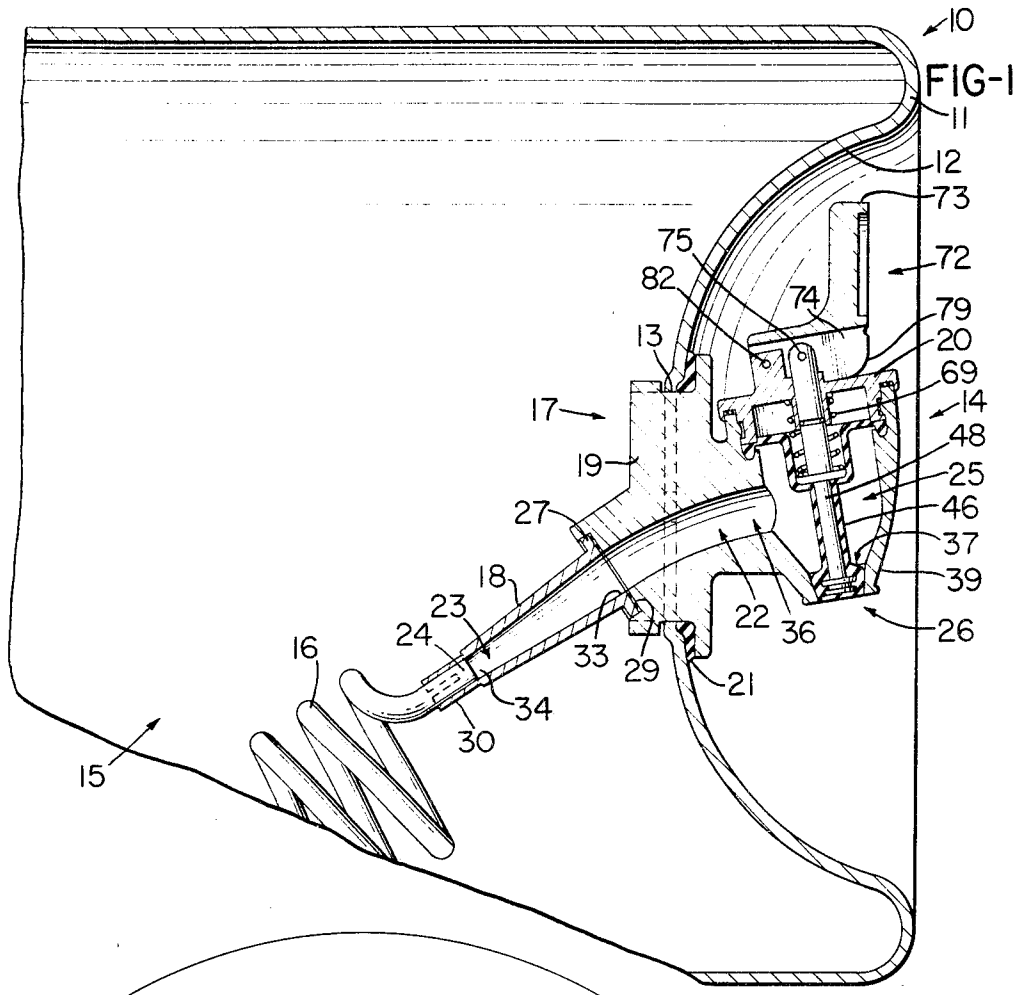


FIG-1

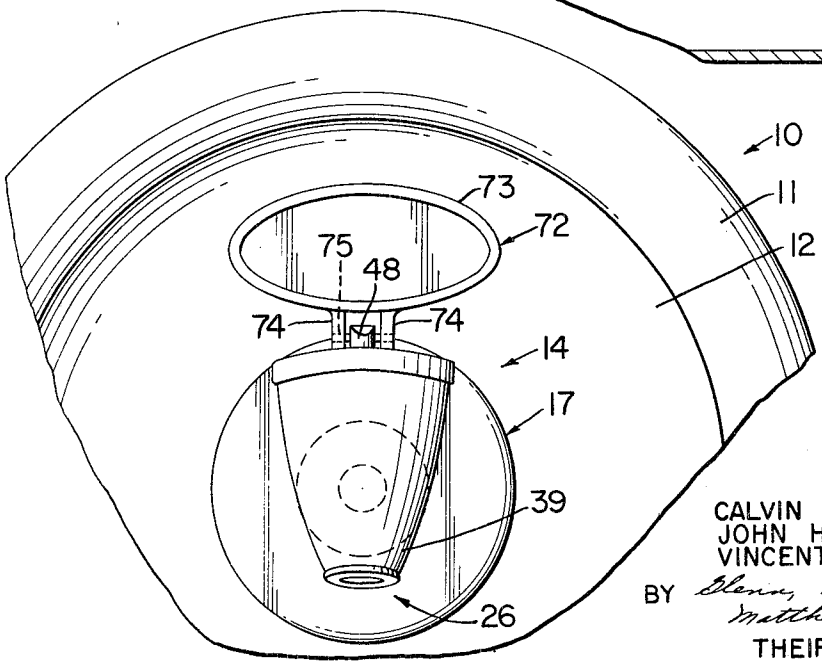


FIG-2

INVENTORS
CALVIN L. WILSON
JOHN H. FOX, JR.
VINCENT J. SERIO, JR.

BY Glenn, Palmer, Matthews & Lyon

THEIR ATTORNEYS

May 5, 1970 C. L. WILSON ET AL 3,510,104

DRIPLESS SPIGOT CONSTRUCTION

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FIG-3

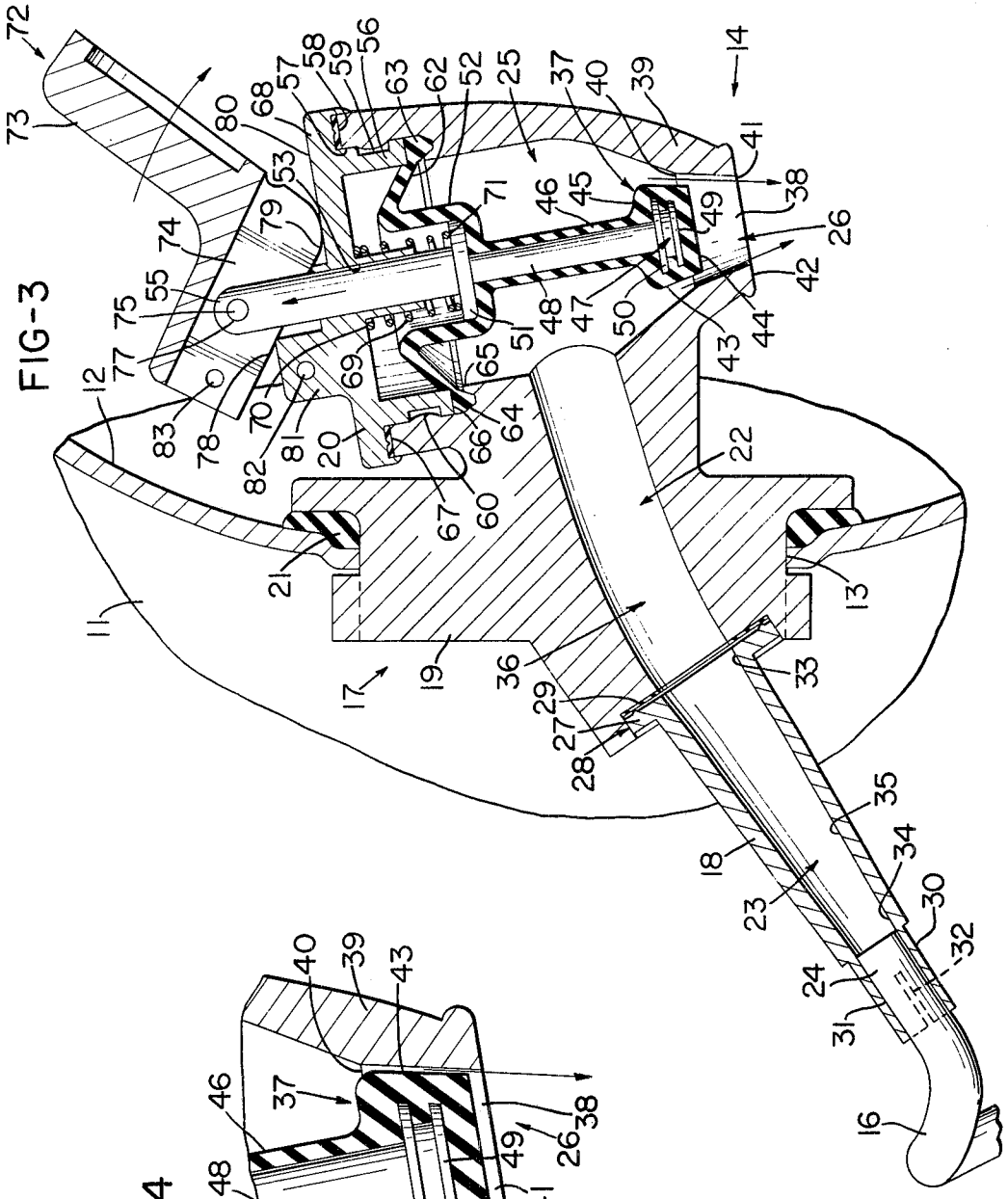


FIG-4

INVENTORS
CALVIN L. WILSON
JOHN H. FOX, JR.
VINCENT J. SERIO, JR.

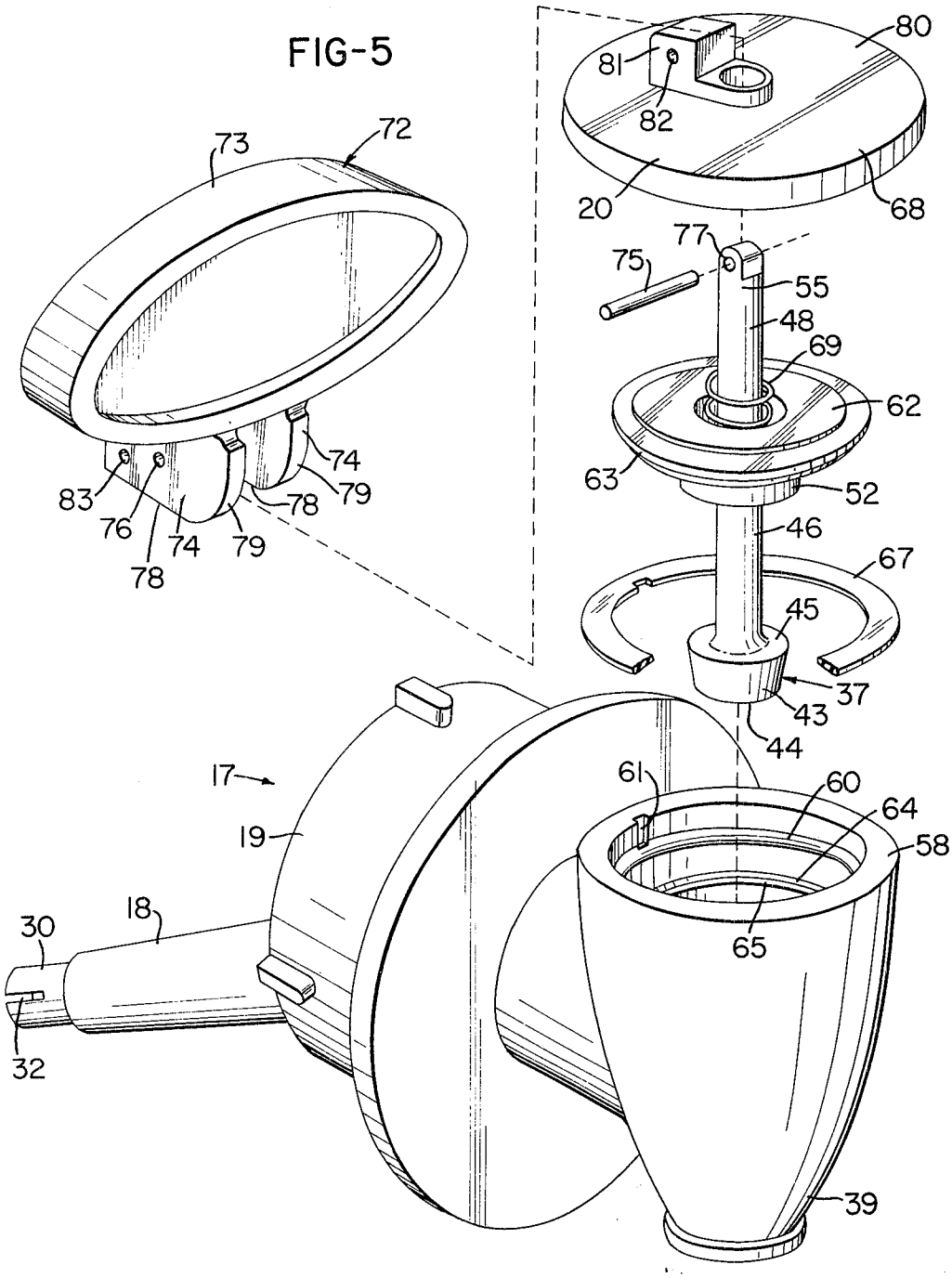
BY Glenn, Palmer, Matthews & Lyne
THEIR ATTORNEYS

May 5, 1970 C. L. WILSON ET AL 3,510,104

DRIPLESS SPIGOT CONSTRUCTION

Filed Aug. 8, 1967 6 Sheets-Sheet 3

FIG-5



INVENTORS
CALVIN L. WILSON
JOHN H. FOX, JR.
VINCENT J. SERIO, JR.

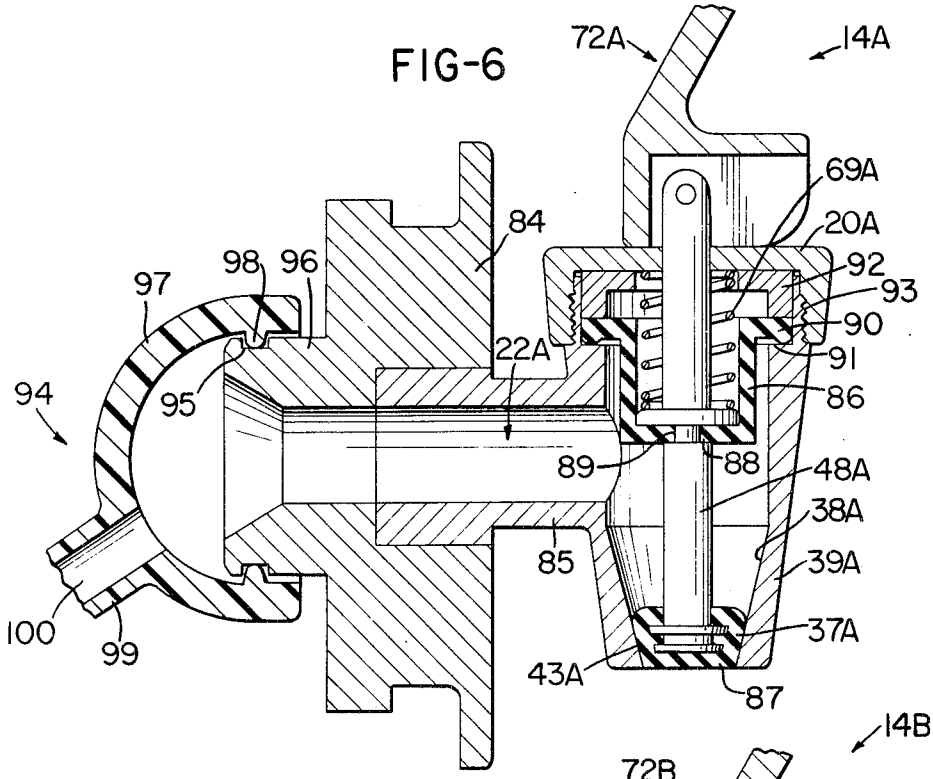
BY Glenn, Palmer, Matthews & Lyne

May 5, 1970 C. L. WILSON ET AL 3,510,104

DRIPLESS SPIGOT CONSTRUCTION

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FIG-6



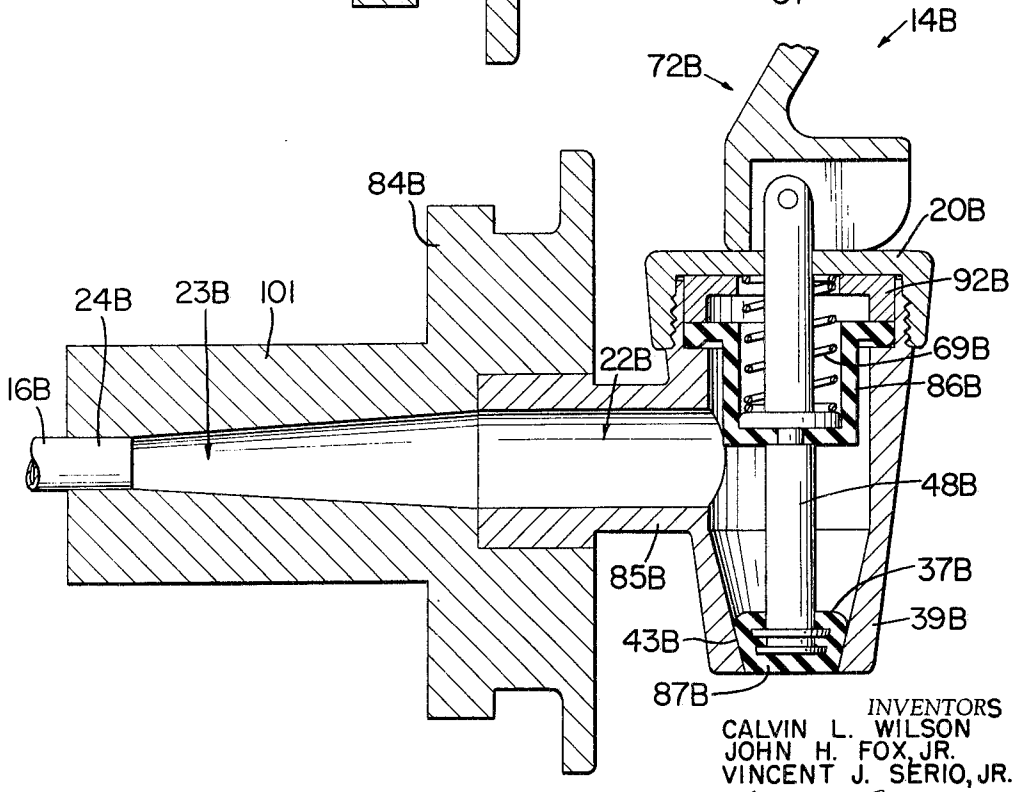


FIG-7

INVENTORS
CALVIN L. WILSON
JOHN H. FOX, JR.
VINCENT J. SERIO, JR.
BY Glenn, Palmer, Matthews & Lyne
THEIR ATTORNEYS

May 5, 1970 C. L. WILSON ET AL 3,510,104

DRIPLESS SPIGOT CONSTRUCTION

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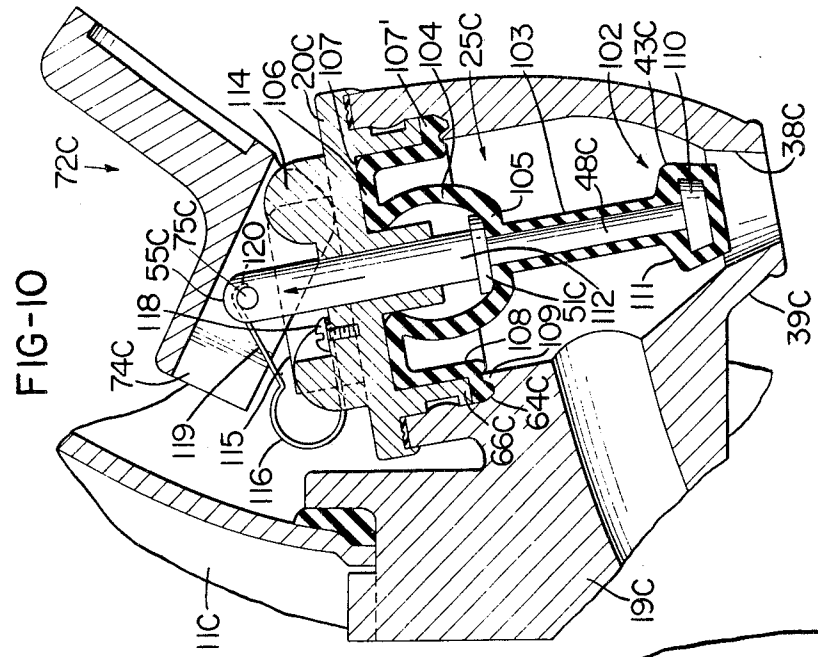


FIG-10

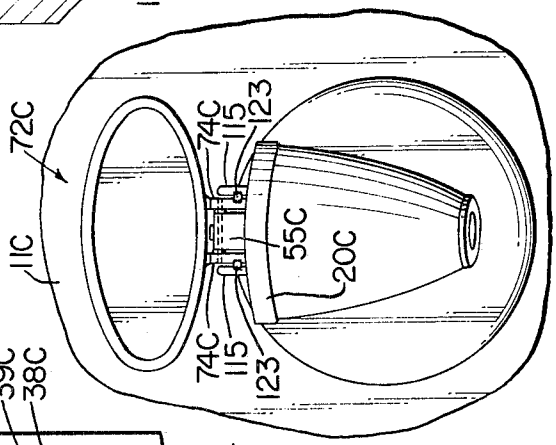


FIG-9

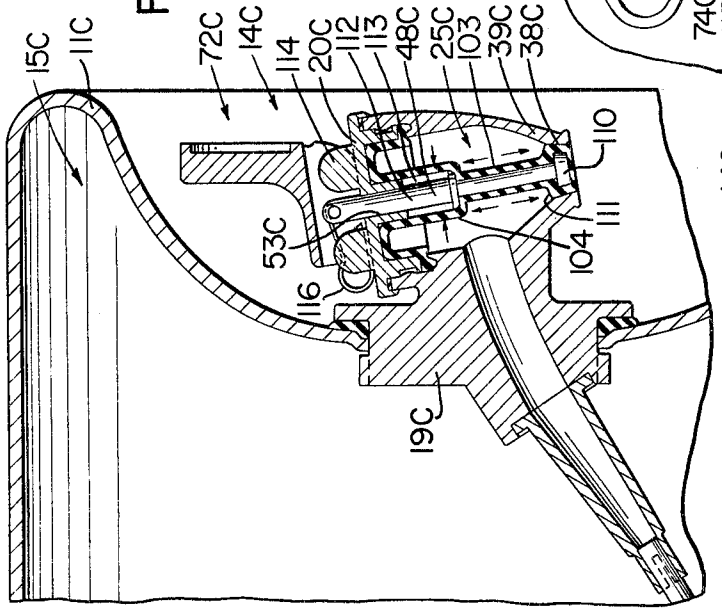


FIG-8

INVENTORS
CALVIN L. WILSON
JOHN H. FOX, JR.
VINCENT J. SERIO, JR.

May 5, 1970 C. L. WILSON ET AL 3,510,104

DRIPLESS SPIGOT CONSTRUCTION

Filed Aug. 8, 1967 6 Sheets-Sheet 6

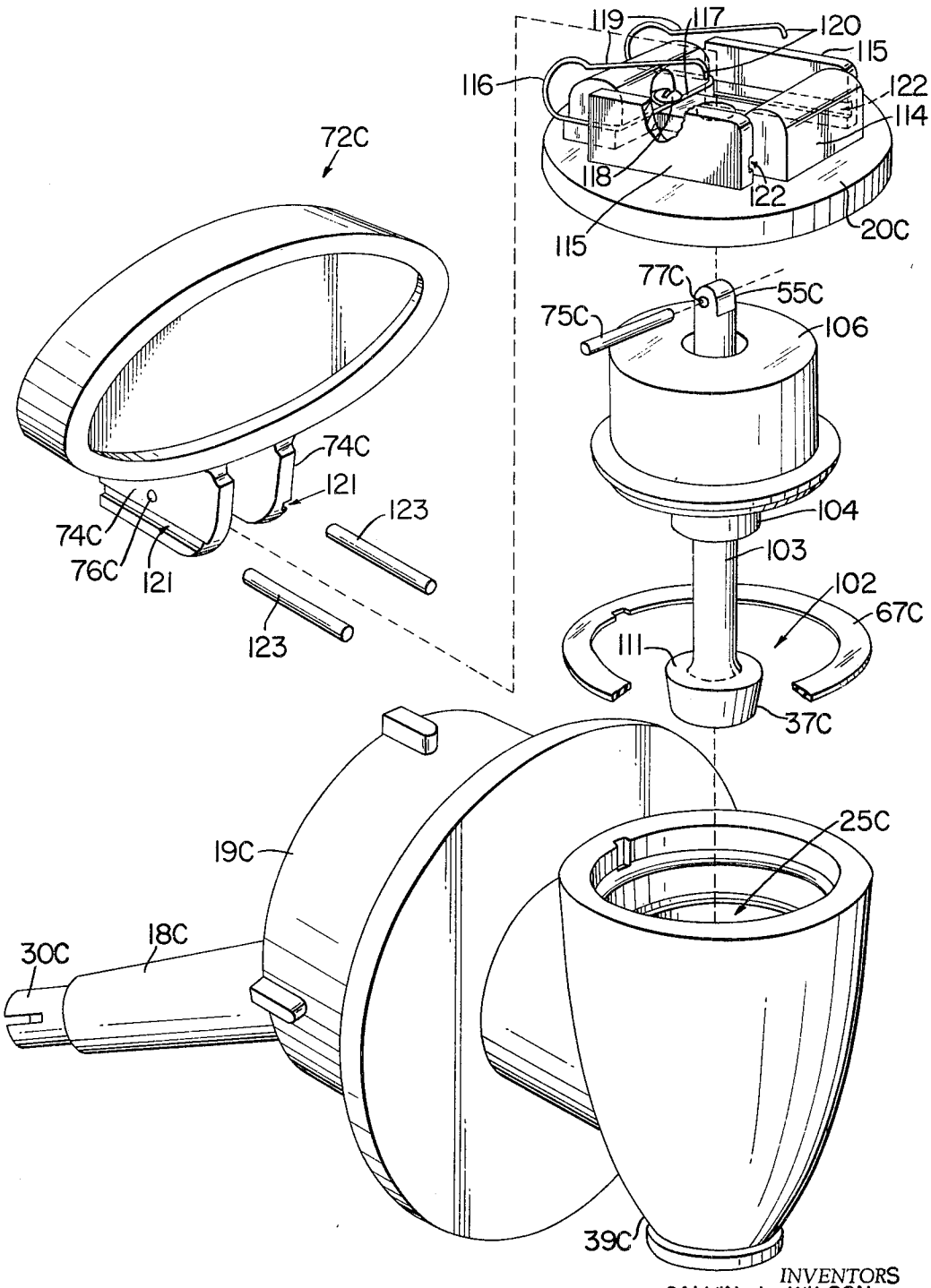


FIG-11

INVENTORS
CALVIN L. WILSON
JOHN H. FOX, JR.
VINCENT J. SERIO, JR.

United States Patent Office 3,510,104
Patented May 5, 1970

3,510,104

DRIPLESS SPIGOT CONSTRUCTION

Calvin L. Wilson and John H. Fox, Jr., Chesterfield County, and Vincent J. Serio, Jr., Henrico County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed Aug. 8, 1967, Ser. No. 662,266
Int. Cl. F16k 23/00, 25/00, 35/00
U.S. Cl. 251—335 25 Claims

ABSTRACT OF THE DISCLOSURE

A spigot construction for a dispensing container for carbonated beverages which avoids excessive foaming of the product. A flexible surface over a frusto-conical plug is resiliently urged into tight sealing engagement with the outlet opening of the spigot thereby preventing any after drip. The means for urging the plug into sealing engagement may be either interior or exterior to the housing of the spigot.

This invention relates to an improved dripless spigot construction as well as to improved parts for such a spigot construction or the like.

It is well known that many beverage producers and the like are marketing their product in a keg-like dispensing container so that the ultimate consumer can dispose such container on a shelf of a refrigerator or the like and draw a glass of the beverage or the like by merely operating a spigot construction of the container.

However, according to the teachings of this invention, it has been found that such prior known spigot constructions have a tendency to drip the beverage after a dispensing operation thereof whereby such dripping condition is particularly adverse when such container is being stored and cooled in a domestic refrigerator or the like because of the many other items normally stored in such refrigerator below the dispensing container.

Further, because such dispensing containers normally contain a carbonated beverage, such as beer, soft drinks and the like, any beverage fluid trapped below the valve members of the prior known spigot constructions by the surface tension thereof will subsequently drip because the CO_2 is subsequently emitted from the liquid and forces the same to drip out of the spout portions of the prior known spigot constructions.

In addition, when such carbonated beverages are being utilized, each prior known spigot construction normally caused excess foaming of the dispensing beverage because of the adverse "squirt" angle of the dispensed fluid relative to the receiving receptacle, such as a glass or the like, when the valve member of the prior known spigot construction is initially cracked open during a dispensing operation.

However, according to the teaching of this invention, a substantially dripless spigot construction is provided wherein all of the above problems are greatly reduced or substantially eliminated whereby not only does the spigot construction of this invention substantially eliminate an adverse dripping problem in the manner hereinafter set forth, but also the spigot construction of this invention tends to reduce the aforementioned adverse foaming problem.

Accordingly, it is an object of this invention to provide an improved dripless spigot construction having one or more of the novel features set forth above or hereinafter shown or described.

Other objects, uses and advantages of this invention are apparent from a reading of this description, which proceeds with reference to the accompanying drawings forming a part thereof and wherein:

FIG. 1 is a fragmentary, cross-sectional view illustrating one embodiment of the spigot construction of this invention mounted to a suitable dispensing container.

FIG. 2 is a fragmentary front view of the structure illustrated in FIG. 1.

FIG. 3 is an enlarged, fragmentary, cross-sectional view of the spigot construction of FIG. 1 and illustrates the spigot construction in its opened position.

FIG. 4 is an enlarged, fragmentary, cross-sectional view of the spout portion of the spigot construction of FIG. 3 and illustrates the same in its squirting position.

FIG. 5 is an exploded perspective view illustrating the various parts of the improved spigot construction of FIG. 1.

FIG. 6 is a view similar to FIG. 3 and illustrates another embodiment of this invention.

FIG. 7 is a view similar to FIG. 6 and illustrates another embodiment of this invention.

FIG. 8 is a view similar to FIG. 1 and illustrates still another embodiment of this invention.

FIG. 9 is a fragmentary front view of the spigot construction illustrated in FIG. 8.

FIG. 10 is an enlarged view similar to FIG. 8 and illustrates the spigot construction in its opened position.

FIG. 11 is an exploded perspective view of the various parts of the spigot construction of FIG. 8.

While the various features of this invention are hereinafter described and illustrated as being particularly adaptable for providing a spigot construction for dispensing beverages and the like, it is to be understood that the various features of this invention can be utilized singly or in any combination thereof to provide dispensing means for other fluids as desired.

Therefore, this invention is not to be limited to only the embodiments illustrated in the drawings, because the drawings are merely utilized to illustrate one of the wide variety of uses of this invention.

Referring now to FIGS. 1 and 2, an improved dispensing container of this invention is generally indicated by the reference numeral **10** and comprises a substantially cylindrical container **11** having a counter-sunk front end wall **12** provided with a central aperture **13** passing therethrough and receiving the improved spigot construction **14** of this invention in a manner hereinafter described.

Normally, the container **11** has a suitable supply of liquid, such as beer, soft drink, or the like, disposed in the chamber **15** thereof and is adapted to be maintained under pressure by suitable propellant means, such as CO_2, whereby the liquid in the container **11** is adapted to be forced by the propellant means into the inlet end of a syphon tube **16** extending to the bottom of the chamber **15** and out through the spigot construction **14** when the spigot construction **14** is opened in a manner hereinafter described.

The particular details of the improved spigot construction **14** of this invention will now be described.

As illustrated in FIGS. 1, 3 and 5. the spigot construction **14** includes a housing means **17** formed from three housing parts **18**, **19** and **20** interconnected together in a manner hereinafter described.

The housing part **19** is adapted to be interconnected to the end wall **12** of the container **11** by a suitable bayonet-type of connection therewith and be sealed in the aperture **13** by suitable sealing or gasket means **21**.

A fluid flow passage means **22** is formed through the housing means **17** and includes an inlet end **23** adapted to be interconnected at one end thereof to the outlet end **24** of the syphon tube **16** and at its other end to an enlarged chamber **25** formed between the housing parts **19** and **20** and leading to an outlet end **26** of the passage means **22** while being substantially coaxial therewith.

The inlet end **23** of the passage means **22** is formed

in the housing part **18** with the housing part **18** having a disc-shaped end **27** received in a circular recess **28** formed in the housing part **19** and being sealed thereto by suitable sealing means **29**, the housing part **18** being secured to the housing part **19** in any suitable manner. The other end **30** of the housing part **18** has a substantially cylindrical bore **31** formed therein and adapted to telescopically receive the outlet end **24** of the syphon tube **16**, the end **30** of the part **18** being suitably slotted, such as at **32**, to permit a press-fit relation with the end **24** of the syphon tube **16**. In addition, the end **24** of the syphon tube **16** can be adhesively secured in the end **30** of the housing part **18**, as desired.

In order to reduce adverse foaming of the carbonated beverage or the like being subsequently dispensed out of the spigot construction **14** of this invention in a manner hereinafter set forth, it has been found that the inlet end **23** of the passage means **22** should gently and substantially progressively increase in cross-sectional raea from the inlet side to the outlet side thereof. Accordingly, the inlet end **23** of the passage means **22** is formed in the housing part **18** in such a manner that the same defines a substantially frusto-conical configuration having the larger end **33** thereof disposed downstream from the smaller end **34** thereof.

In the embodiment illustrated in FIG. 3, the internal peripheral side wall means **35** that defines the frusto-conical inlet end **23** of the passage means **22** defines an angle of approximately 4° relative to the longitudinal axis of the inlet end **23**. However, it is believed that such angle of the side wall means **35** relative to the longitudinal axis of the inlet end **23** of the package means **22** could fall within the range of approximately 3° to approximately 6° although the aforementioned 4° has been found to function satisfactorily to prevent adverse foaming.

The portion of the passage means **22** formed in the housing part **19** and disposed intermediate the larger end **33** of the inlet end **23** and the chamber **25** of the passage means **22** is designated by the reference numeral **36** and has a gently curving longitudinal axis so that the same joins the chamber **25** at substantially right angles relative thereto.

In particular, it has been found that should the passage portion **36** join the enlarged fluid chamber **25** of the passage means **22** at an angle substantially different than a right angle relative thereto, such a discharge of the pressurized beverage into the enlarged chamber **25** causes excess foaming thereof.

The outlet end **26** of the passage means **22** is adapted to be opened and closed by a valve member **37** of this invention.

In particular, the outlet end **26** of the passage means **22** is defined by a substantially frustoconical surface means **38** formed in the housing part **19** and defining the internal part of a spout portion **39** of the spigot construction **14**, the frusto-conical surface means **38** having the larger end **40** thereof joining with the chamber **25** while the smaller end **41** thereof is disposed down the stream therefrom and interrupts a flat end surface **42** of the spout portion **39**.

In order to facilitate the dispensing of the liquid from the container **11** by the spigot construction **14** of this invention, the spout portion **39** of the spigot construction **15** is disposed at an angle relative to the vertical axis so that a glass or the like can be received under the spout portion **39** in the countersunk end wall **12** of the container **11**. For example, the longitudinal axis of the spout portion **39** of the spigot construction **14** of this invention is disposed at an angle of approximately 10° relative to a true vertical axis.

The valve member **37** for opening and closing the outlet end **26** of the passage means **22** has a substantially frusto-conical configuration conforming to the frusto-conical configuration of the outlet end **26** of the passage means **22**.

In particular, the valve member **37** has a frusto-conical side wall means **43** disposed coaxially with the frusto-conical surface means **38** and forming the same angle with the longitudinal axis of the outlet end **26** so that when the valve member **37** is moved to its closed position as illustrated in FIG. 2, substantially the entire frusto-conical side wall surface **33** thereof is disposed in sealing relation against the frusto-conical surface means **38** of the spout portion **39**.

In addition, the smaller end **44** of the valve member **37** is substantially flat and is disposed substantially coplanar with the flat end **32** of the spout portion **39** when the valve member **37** is disposed in its closed position illustrated in FIG. 1 whereby no liquid can be trapped in the spout portion **39** below the end **44** of the valve member **37** to cause the aforementioned adverse dripping problem.

The valve member **37** has its outer surface means formed from a flexible material, such as rubber, plastic or the like, so that the same will fully seat and seal against the frusto-conical surface means **38** of the spout portion **39** when the valve member **37** is disposed in its closed position. In addition, when a pressurized liquid is being contained in the chamber **15** of the container **11**, it can be seen that the force of such pressurized liquid against the larger end **45** of the valve member **37** not only tends to further urge the valve member **37** into its closed position as illustrated in FIG. 1, but also the force of the pressurized liquid deforms the end **45** of the valve member **37** into greater sealing relationship with the frusto-conical surface means **38** of the spout portion **39**.

The flexible outer surface means of the valve member **37** is formed from the aforementioned flexible material and is part of a sealing member indicated by the reference numeral **46**, the sealing member **46** being in the form of a substantially closed sleeve member having the lower end thereof disposed around and in interlocking relation with an enlarged end **47** of an actuating stem **48**.

The actuating stem **48** has a pair of spaced annular shoulders **49** and **50** at the lower end **47** thereof and forming part of the valve member **37** while another shoulder **51** is disposed spaced from the shoulder **50** and is received in a substantially enlarged tubular part **52** of the sealing member **46**.

The housing part **20** has a bore **53** passing therethrough and telescopically receiving the stem **48** therethrough so that an upper end **55** of the stem **48** will project out through the bore **54** in the manner illustrated in FIG. 3. The housing part **20** has a depending tubular portion **56** adapted to be telescopically received in a stepped bore means **57** interrupting an upper end **58** of the housing part **19**, the tubular portion **56** of the housing part **20** having an annular recess **59** formed in the external surface thereof and being adapted to be snapfitted over an inwardly directed annular bead **60** formed inwardly the stepped bore **57** of the housing part **19** to effectively interconnect the housing parts **19** and **20** together. In addition, the housing parts **19** and **20** can have suitable alignment means **61**, FIG. 5, formed thereon to properly orient the part **20** relative to the part **19** when the same are being assembled together.

The upper end of the tubular part **52** of the sealing member **46** includes a flexible disc-like portion **62** which terminates in an outer peripheral bead **63** adapted to be received in an annular recess **64** formed on an annular shoulder means **65** of the housing part **19** whereby the end **66** of the housing part **20** compresses and holds the annular bead **63** of the sealing member **46** in the annular recess **64** of the shoulder **65** of the housing part **19** when the housing parts **19** and **20** are interconnected together.

In this manner, the sealing member **46** completely seals the chamber **25** of the passage means **22** from the housing part **20** and the stem **48**.

If desired, additional sealing means or gasket means **67**

can be disposed between the end 58 of the housing part 19 and an outer flange portion 68 of the housing part 20.

A compression spring 69 has one end 70 disposed against the housing part 20 and the other end 71 disposed against the shoulder 51 of the actuating stem 48 to tend to move the actuating stem 48 and the valve member 37 thereof to its closed position as illustrated in FIG. 1 for the purpose previously described.

A handle member 72 is provided for the spigot construction 14 of this invention and has a grasping portion 73 interconnected to a pair of spaced depending legs 74 adapted to be pivotally mounted to the stem 48 by a pivot pin 75 passing through apertures 75 formed in aligned relation in the legs 74 and an aperture 77 formed in the end 55 of the stem 48. The legs 74 each have a flat end surface 77 interconnected to a rounded cam surface 78 on the forward end thereof.

When the spigot construction 14 is permitted to move to its closed position in a manner hereinafter described, the force of the compression spring 69 moves the actuator 48 and valve member 37 downwardly to its closed position illustrated in FIG. 1 and causes the flat surfaces 77 of the legs 74 of the handle means 72 to rest against the upper flat surface 80 of the cap or housing part 20. However, when the grasping portion 73 of the handle 72 is pulled forwardly in the manner illustrated in FIG. 3, the legs 74 rock against the flat surface 80 of the housing part 20 at the arcuate surfaces 79 thereof in the manner illustrated in FIG. 3 whereby the legs 74 cam the actuator 48 upwardly in the manner illustrated in FIG. 3 to move the valve member 37 to its opened position in opposition to the force of the compression spring 69.

If desired, the cap or housing part 20 can include an upwardly extending flange means 81 adapted to be telescopically received between the legs 74 of the handle means 72 and carry suitable detent means in a bore 82 passing therethrough which will cooperate with aligned bores 83 passing through the legs 74 to tend to hold the handle means 72 in its closed position as illustrated in FIG. 1 because the bore means 83 and 82 align with each other when the handle means 72 is in the closed position of FIG. 1. However, such detent means is merely for "feel" purposes to indicate to the user that the handle means 72 is in its closed position.

When the spigot construction 14 is initially being moved from its closed position to its open position by the user pulling forwardly on the handle part 73 of the handle means 72 in the manner previously described, the initial upward movement of the valve member 37 from the closed position illustrated in FIG. 1 to the cracked open position of FIG. 4 will cause the pressurized liquid to tend to squirt out of the spout portion 39 in the manner indicated by the arrows in FIG. 4. However, because the frusto-conical surface means 26 and frusto-conical side wall means 43 of the valve member 37 are so constructed and arranged, such initial squirting is so controlled that the same is directed into the receptacle or the like being placed under the spout portion 39 so that adverse squirting by the spigot construction 14 of this invention is eliminated.

In addition, should the user desire to hold the valve member 37 in the squirting position of FIG. 4, such squirting position of the spigot construction 14 of this invention is particularly useful with a beverage having a foaming tendency because the squirting operation can be utilized in making ice cream sodas and the like.

Of course, further pivoting or camming of the handle means 72 on the housing part 20 to the position illustrated in FIG. 3 causes the valve member 37 to be moved away from the frusto-conical surface means 38 of the spout portion 39 to such a degree that foaming of the liquid being dispensed out of the spigot construction 14 is held to the desirable level with the dispensing stream of beverage being substantially clear.

In order to accomplish the desired squirting feature of FIG. 4 and to prevent adverse foaming during the dispensing operation of FIG. 3, it has been found that not only is the frusto-conical surface means 38 of the spout portion 39 disposed at a relatively small angle relative to the longitudinal axis of the outlet end 26 of the passage means 22, but also the frusto-conical surface 43 of the valve member 37 is disposed at the same small angle relative to the longitudinal axis. For example, it has been found that the frusto-conical surface means 38 of the spout portion 39 and the frusto-conical surface means 43 of the valve member 37 can be disposed at an angle of approximately 12° relative to the longitudinal axis of the outlet end 26 of the passage means 22.

Thus, since no obstruction is provided between the end 42 of the spout portion 39 and the valve member 37 when the valve member 37 is initially cracked open to the position illustrated in FIG. 4, the squirting of the liquid during the initial opening of the valve member 37 is held to a minimum and is directed into the receptacle below the spout portion 39 being utilized to receive the liquid being dispensed by the spigot construction 14 of this invention.

After the spigot construction 14 has dispensed the desired quantity of liquid through the opened valve member 37 in the manner illustrated in FIG. 3, the user merely releases the handle portion 73 of the handle means 72 whereby the force of the compression spring 69 returns the valve member 37 to its closed position either by itself or by the user additionally pivoting the handle means 72 back to its closed position whereby it can be seen that no liquid can be trapped in the spout portion 39 below the valve member 37 because the flat end surface 44 of the valve member 37 is disposed coplanar with the flat end 42 of the spout portion 39 with the valve member 37 fully sealing against the surface means 38 of the spout portion 39 adjacent the lower end 42 as well as along substantially the entire frusto-conical side surface 43 of the valve member 37.

Thus, it can be seen that this invention provides an improved spigot construction which is substantially dripless, substantially foamless, maintains a foaming characteristic to the desired level, is adapted to utilize a previous adverse squirting problem of prior known spigot constructions to a new use thereof and is relatively inexpensive and simple to manufacture and assemble.

Another embodiment of a dripless spigot construction of this invention is generally indicated by the reference numeral 14A in FIG. 6 and parts thereof similar to the spigot construction 14 are indicated by like reference numerals followed by the reference letter A.

As illustrated in FIG. 6, the spigot construction 13A includes a housing part 84 to permit the spigot construction 14A to be interconnected to the container 11 or the like by a bayonet-type of interconnection in the same manner as the housing part 19 previously described, the housing part 84 being interconnected to another housing part 85 forming the spout portion 39A previously described. However, the frusto-conical surface means 38A of the spout portion 39A extends well above the frusto-conical side wall means 43A of the valve member 37A but functions in the same manner as the surface means 38 previously described. In addition, a separate sealing member 86 is utilized to effectively seal the housing part 20A to the housing part 85 while the valve member 37A is formed from a separate flexible member 87.

In particular, the sealing member 86 has an inner periphery 88 sealingly received in an annular recess 89 formed in the stem 48A and has its outer periphery 90 compressed between a shoulder means 91 on the housing part 85 and a retainer 92 disposed between the sealing member 86 and the housing part 20A.

The housing part 20A is fastened to the housing part 85 by a threaded interconnection 93 therebetween.

The passage means 22A formed through the spigot construction 14A is opened and closed by the valve member 37A in the manner previously described for the spigot construction 14 and is adapted to be fluidly interconnected to a syphon means 94 in a manner now to be described.

The housing part 85 has an annular recess 95 formed on a tubular extension 96 thereof whereby a cup-shaped portion 97 of the syphon means 94 is adapted to be telescoped over the tubular part 96 and have an annular bead 98 thereof snap-fitted into the recess 95 to interconnect the syphon means 94 with the housing part 84, the cup-shaped portion 97 being integrally interconnected to a syphon tube 99 adapted to extend to the bottom of the container carrying the spigot construction 14A of this invention and having a passage means 100 passing therethrough and interconnected to the cup-shaped portion 97 thereof.

In this manner, it can be seen that the spigot construction 14A of this invention is adapted to function in the same manner as the spigot construction 14 previously described while permitting the same to be utilized with a different syphon means 94 for a particular application of the spigot construction 14A.

Similarly, another spigot construction of this invention is generally indicated by the reference numeral 14B in FIG. 7 and parts thereof similar to the spigot constructions 14 and 14A are indicated by like reference numerals followed by the reference letter B.

As illustrated in FIG. 7, the spigot construction 14B is substantially identical to the spigot construction 14A previously described except that the housing part 84B thereof has a substantially cylindrical tubular extension 101 having the inlet end 23B of the passage means 22B thereof formed in substantially the same manner as the inlet end 23 of the spigot construction 14 to include the aforementioned frusto-conical configuration thereof. In this manner, the end 24B of the syphon tube 16B can be inserted in the tubular extension 101 of the housing part 34B to fluidly interconnect the same to the passage means 22B of the spigot construction 14B.

Thus, it can be seen that the spigot construction 14B illustrated in FIG. 7 operates substantially in the same manner as the spigot construction 14 of FIG. 3 while utilizing not only the features of the spigot construction 14A of FIG. 6, but also utilizing the frusto-conical inlet end 23B similar to the inlet end 23 of the spigot construction 14 to minimize the foaming action of a carbonated liquid being dispensed by the spigot construction 14B.

Another spigot construction of this invention is generally indicated by the reference numeral 14C in FIGS. 8–11 and parts thereof similar to the spigot construction 14 are indicated by like reference numerals followed by the reference letter C.

As illustrated in FIG. 8, the spigot construction 14C is mounted to the dispensing container 11C by the housing part 19C in the manner previously described, the housing part 19C defining the internal chamber 25C and frusto-conical valve seat surface 38C in the spout portion 39C in the manner previously described. In addition, the housing part 20C is snap fitted or otherwise suitably secured to the housing part 19C in the manner previously described and has the bore 53C passing therethrough to telescopically receive the actuating stem 48C.

The stem 48C carries an improved valve member 102 formed from a resilient sealing member 103 having an inner annular portion 104 provided with one end 105 disposed against the outwardly directed annular flange 51C of the stem 48C and the other end 106 disposed flush against the inner annular surface 107 of the housing part 20C as illustrated in FIGS. 8 and 10. The outer peripheral portion 107 of the sealing member 103 is trapped in the annular recess 64C formed in the housing part 19C and is compressed therein by the end 66C of the housing part 20C. In addition, the sealing member 103 is provided with an annular recess 108 which receives an internal projection 109 on the housing part 19C that defines the annular recess 64C thereof.

The valve member or part 102 of the sealing member 103 is disposed around a frusto-conical enlarged end 110 of the stem 48C in substantially the same manner as the valve member 37 of the spigot construction 14 except that the part 110 of the stem 48C is not provided with the flange means 49 and 50 previously described. Of course, such flange means 49 and 50 could be included, if desired.

The sealing member 103 is so constructed and arranged that the distance between the frusto-conical part 110 of the stem 48C and the internal annular surface 107 of the housing part 20C when the valve member 102 is in its closed position as illustrated in FIG. 8, that the sealing member 103 is axially under compression between such parts 110 and 107 so that the natural resiliency of the sealing member 103 urges the frusto-conical sealing surface 43C of the valve member 102 into positive sealing relationship with the spout surface 38C to positively seal closed the same when the spigot construction 14C is disposed in the closed position as illustrated in FIG. 8.

In addition, the lower part 105 of the annular portion 104 of the sealing member 103 is so constructed and arranged that the same has substantially the same effective surface area as the top part 111 of the valve member 102 so that when the beverage container 11C contains a pressurized fluid in the chamber 25C thereof, the internal pressure in the chamber 25C does not tend to move the valve member 102 to its opened position as would be the situation if the top part 106 of the annular portion 105 of the sealing member 103 were disposed spaced from the surface 107 of the housing part 20C in substantially the manner provided by the sealing member 46 of the spigot construction 14 previously described.

In addition, it can be seen that the annular portion 104 of the sealing member 103 is normally disposed around and spaced from the upper part 112 of the stem 48C to define an annular chamber 113 therebetween. Thus, when a pressurized fluid is disposed in the chamber 15C of the beverage container 11C and the valve member 102 is disposed in its closed position as illustrated in FIG. 8, such internal pressure within the chamber 25C of the spigot construction 14C tends to force inwardly the annular portion 104 of the sealing member 103 around the upper part 112 of the actuating stem 48 whereby forces are set up in the sealing member 103 in such a manner that the same tends to elongate between the upper part of the sealing member 103 and the valve member 102 whereby such pressurized force acting on the annular portion 104 of the sealing member 103 aids in forcing the valve member 102 into positive sealing engagement with the spout surface 38C to further insure the sealing closed of the spigot construction 14C.

The spigot construction 14C includes a handle means 72C provided with a pair of depending spaced parallel legs 74C pivotally interconnected to the upper end 55C of the stem 48C by the pivot pin 75C in the manner previously described.

However, it has been found that when the handle means 72 of the spigot construction 14 is moved to its opened position as illustrated in FIG. 3, the operator sometimes has a tendency to twist or cock the opened valve member 27 about a substantially vertical axis passing longitudinally through the stem 48 to dispose the legs 74 over the projection 81 so that the handle means 72 cannot return to its closed position.

Thus, the housing part 20C of the spigot construction 14C can be provided with outwardly directed projection means 114 to be fully received between the legs 74C of the handle means 72C regardless of the pivoted position

of the handle means 72C to prevent such twisting or rotation thereof about the longitudinal axis of the stem 48C.

Alternately, or additionally, the housing part 20C can have a pair of upwardly extending flanges or projection means 115 adapted to be disposed outboard of the legs 74C of the handle means 72C to prevent such rotational or twisting movement of the handle means 72C in any of its pivoted positions.

Should it be desired to have additional spring means to positively move the valve member 102 from its opened position in FIG. 2 back to its closed position in FIG. 8 and not completely rely on the compressed annular portion 104 of the sealing member 103 to return the valve member 102 to its closed position, an external spring means 116 can be utilized instead of an internal spring means, such as the internal spring means 69 of the spigot construction 14 previously described.

In particular, the spring means 116 can comprise a suitable spring wire bent into the configuration illustrated in the drawings and have a transverse part 117 thereof secured to the housing part 20C by a threaded fastening member 118 while a pair of legs 119 thereof can have hook-shaped ends 120 hooked around the top of the pivot pin 75C of the stem 48C in the manner illustrated in FIGS. 8 and 10 to provide a continuous force tending to move the stem 48C downwardly to urge the valve member 102 into its sealed closed position.

It has been found that while various spring means and the like are utilized to normally return the handle means 72 and 72C of the spigot constructions 14 and 14C of this invention to their closed position, during shipment and storage of the dispensing containers 11 and 11C severe jarring and bumping of not only the dispensing containers, but also of the handle means of the spigot constructions therefor, causes temporary opening of the spigot constructions whereby an adverse situation is created.

Therefore, the spigot construction 14C of this invention is provided with selectively operable locking means for positively locking the handle means 72C in its closed position for shipping, storing and merchandising purposes.

In particular, the legs 74C of the handle means 72C each has an outwardly facing groove means 121 the length of the respectively flange 115 of the housing part 20C when the handle means 72C is disposed in its closed position as illustrated in FIG. 9. With the handle means 72C disposed in its closed position, and thus having the valve means 102 disposed in its closed position, a locking pin 123 can be inserted in a cooperating groove means 121 and 122 of a particular flange 115 and leg 74C in the manner illustrated in FIG. 9 so that the handle means 72C cannot be accidentally bumped or jarred open during shipping, storing and merchandising of the dispensing container 11C. Of course, two such locking pin means 123 can be utilized in the manner illustrated in FIGS. 9 and 11. Also, if the flanges 115 are not provided on the housing part 20C, such cooperating groove means can be provided between the legs 74C and the projection means 114, as desired.

In event, when the ultimate consumer desires to utilize the dispensing container 11C, the ultimate consumer can remove the locking pins 123 and merely throw the same away or utilize the same for a locking purpose in the manner illustrated in FIG. 9 to substantially render the dispensing container 11C childproof.

When the locking means 123 has been removed and the ultimate consumer desires to dispense fluid from the chamber 15C of the dispensing container 11C, the ultimate consumer pivots the handle means 72C from its closed position illustrated in FIG. 8 to its opened position as illustrated in FIG. 10 whereby the valve member 102 is moved substantially vertically upwardly away from the frusto-conical valve seat surface 38C so that the beverage or fluid can be dispensed out of the spout portion 39C in the manner previously described for the spigot construction 13.

When the valve member 102 is moved to its open position as illustrated in FIG. 10, it can be seen that the annular portion 104 of the sealing member 103 is ballooned substantially outwardly whereby the same is under compression so that the natural force of the compressed annular portion 104 is to return the valve member 102 to its closed position when the ultimate consumer releases the handle means 72C. Of course, the spring means 116 aids in returning the valve member 102 back to its closed position in the manner previously described.

If desired, the rear parts of the legs 74C of the handle means 72C or other handle means of this invention can be provided with cam surfaces so that the particular spigot construction can be opened if the handle means is pivoted toward the dispensing container instead of away from the same as illustrated in the drawings, such modification also being adaptable for the other handle means previously described.

Accordingly, it can be seen that this invention not only provides an improved dripless spigot construction or the like, but also this invention provides improved parts for such a spigot construction or the like.

What is claimed is:

1. A dripless spigot construction comprising a housing means having a flow passage means therethrough, said passage means defining an inlet end and an outlet end in said housing means, said outlet end defining a substantially frusto-conical surface means in said housing means with said surface means forming part of the spout portion of said housing means, and a substantially frusto-conical valve member movably carried by said housing means for selectively opening and closing said outlet end, said valve member closing said outlet end by seating against said surface means, said valve member having the smaller flat base thereof coplanar with the end of said spout portion when said valve member is in the closed position thereof whereby said frusto-conical valve member mates with said frusto-conical surface means at the end of said spout portion when said valve member is in the closed position thereof.

2. A dripless spigot construction as set forth in claim 1 wherein said valve member includes a flexible surface means that seats and seals against said surface means of said housing means.

3. A dripless spigot construction as set forth in claim 1 wherein an actuator stem is movably carried by said housing means and is interconnected to said valve member to move said valve member between its opened and closed positions.

4. A dripless spigot construction as set forth in claim 3 wherein said housing means has a part provided with bore means therethrough, said stem projecting through said bore.

5. A dripless spigot construction as set forth in claim 4 and including spring means disposed between said stem and said housing part for tending to maintain said valve member in its closed position.

6. A dripless spigot construction as set forth in claim 5 wherein said spring means is disposed inside said housing means.

7. A dripless spigot construction as set forth in claim 5 wherein said spring means is disposed outside said housing means.

8. A dripless spigot construction as set forth in claim 4 and including a handle means pivoted to said stem and camming on said housing part to move said valve member between its closed and opened positions.

9. A dripless spigot construction as set forth in claim 8 wherein said handle means has a pair of cam legs straddling said projecting stem and camming on said housing part, said housing part having external projection means received between said legs of said hnadle means and

cooperating therewith to prevent cocking of said handle means in its various pivoted positions.

10. A dripless spigot construction as set forth in claim **8** wherein said handle means has a groove means and said housing part has a groove means, said groove means being disposed in aligned relation to receive a locking pin means when said handle means is disposed in a closed position thereof whereby said spigot construction can be selectively locked in its closed position by said locking pin means.

11. A dripless spigot construction as set forth in claim **4** and including sealing means carried by said stem and sealing said passage means from said housing part.

12. A dripless spigot construction as set forth in claim **11** wherein said housing part is snap-fitted to the remainder of said housing means and comprises said sealing means between said housing part and said housing means.

13. A dripless spigot construction as set forth in claim **11** wherein said sealing means forms part of said valve member.

14. A dripless spigot construction as set forth in claim **13** wherein said sealing means has a natural resiliency to normally tend to urge said valve member into sealing engagement with said surface means of said spout to hold said valve member in its closed position.

15. A dripless spigot construction as set forth in claim **1** wherein said outlet end of said passage means has a longitudinal axis and wherein said frusto-conical surface means defines an angle of approximately 12° with said longitudinal axis.

16. A dripless spigot construction as set forth in claim **15** wherein said longitudinal axis is adapted to be disposed at approximately 10° relative to a vertical axis when said spigot construction is in a normal dispensing position.

17. A dripless spigot construction as set forth in claim **1** wherein said inlet end of said passage means has a substantially frusto-conical configuration with the larger end thereof being downstream from the smaller end thereof.

18. A dripless spigot construction as set forth in claim **17** wherein said inlet end is adapted to have its smaller end interconnected to a syphon tube or the like.

19. A dripless spigot construction as set forth in claim **17** wherein said housing means includes a housing part interconnected to the remainder of said housing means, said housing part having said inlet end of said passage means therein.

20. A dripless spigot construction as set forth in claim **17** wherein said frusto-conical configuration of said inlet end has a longitudinal axis, and wherein said configuration makes an angle of approximately 4° relative to said longitudinal axis.

21. A dripless spigot construction as set forth in claim **1** wherein said passage means defines a chamber between said inlet and outlet ends thereof, said inlet end joining said chamber at substantially a right angle relative thereto.

22. A dripless spigot construction as set forth in claim **21** wherein said chamber is substantially coaxial with said outlet end.

23. A dripless spigot construction as set forth in claim

1 wherein substantially the entire side wall means of said frusto-conical valve member seats and seals against said frusto-conical surface means of said outlet end when said valve member is in its closed position.

24. A dripless spigot construction as set forth in claim **23** wherein said spout portion has a flat end surface and wherein said valve member has its said smaller flat base coplanar with said flat end surface of said spout portion when said valve member is in its closed position, said frusto-conical surface means and said frusto-conical valve member each defining the same angle relative to the longitudinal axis of said outlet end.

25. A dripless spigot construction comprising a housing means having a flow passage means therethrough, said passage means defining an inlet end and an outlet end in said housing means, said outlet end defining a substantially frusto-conical surface means in said housing means with said surface means forming part of the spout portion of said housing means, a substantially frusto-conical valve member movably carried by said housing means for selectively opening and closing said outlet end, said valve member closing said outlet end by seating against said surface means, an actuator stem being movably carried by said housing means and being interconnected to said valve member to move said valve member between its opened and closed positions, said housing means having a part provided with bore means therethrough, said stem projecting through said bore, and sealing means being carried by said stem and sealing said passage means from said housing part, said sealing means forming part of said valve member, said sealing member having an annular portion surrounding said stem in spaced relation, said annular portion being so constructed and arranged that said annular portion forces said valve member into sealed engagement with said surface means of said spout when a pressurized fluid is contained in said spigot construction upstream from said valve member and tends to collapse said annular portion against said stem whereby said sealing member tends to hold said valve member in its closed position.

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SAMUEL SCOTT, Primary Examiner

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