Nov. 6, 1962 W. J. KNIGHT 3,062,452

DRINKING FOUNTAIN ATTACHMENT FOR WATER FAUCETS

Filed May 8, 1961 3 Sheets-Sheet 1

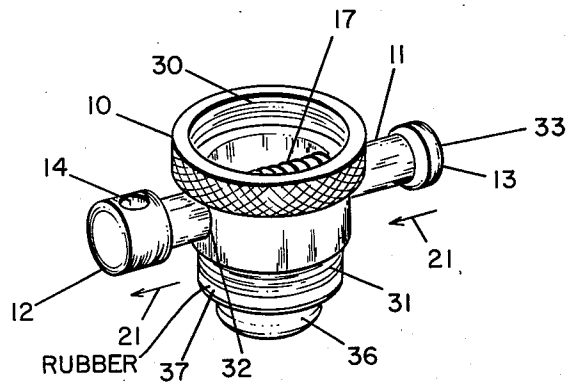


FIGURE 1

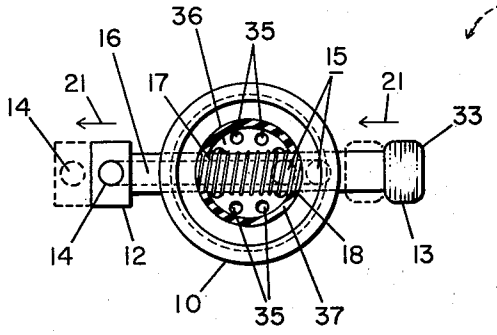


FIGURE 2

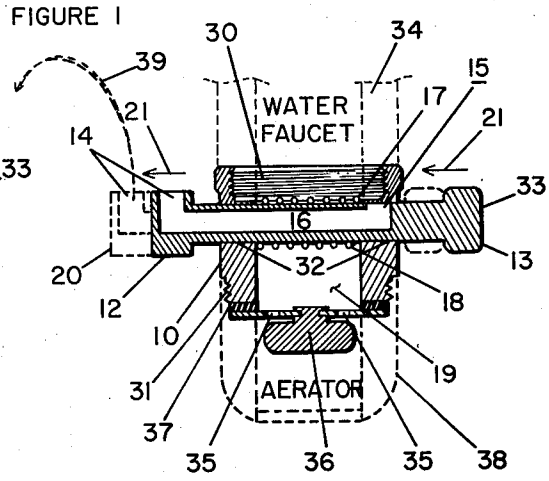


FIGURE 3

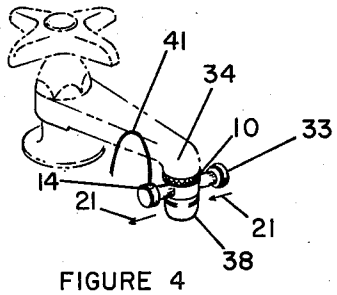


FIGURE 4

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DRINKING FOUNTAIN ATTACHMENT FOR WATER FAUCETS

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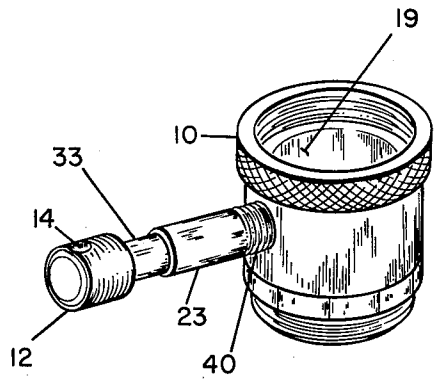


FIGURE 5

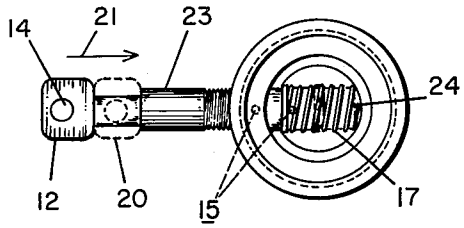


FIGURE 6

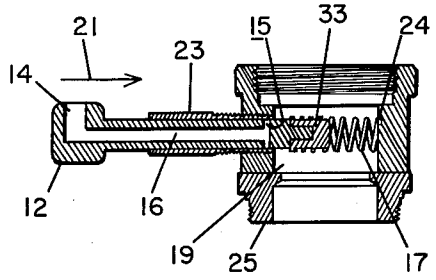


FIGURE 7

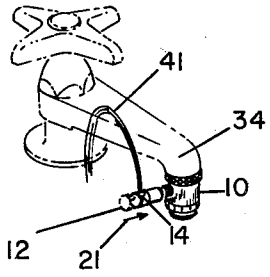


FIGURE 8

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DRINKING FOUNTAIN ATTACHMENT FOR WATER FAUCETS

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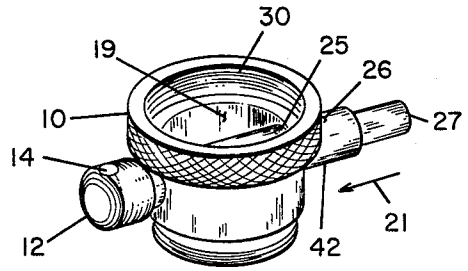


FIGURE 9

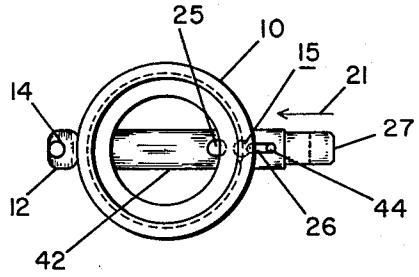


FIGURE 10

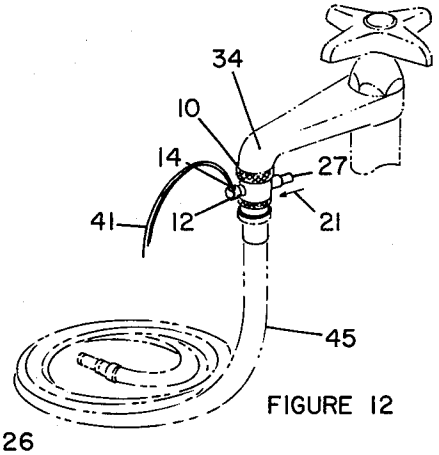


FIGURE 12

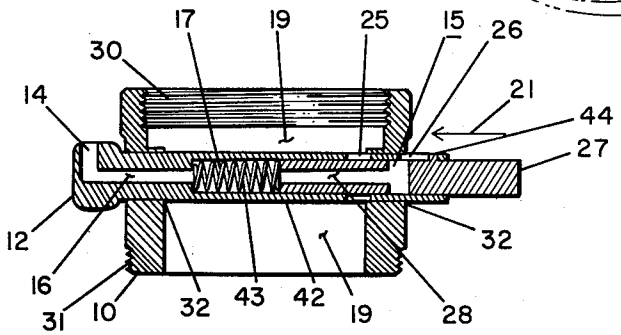


FIGURE 11

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3,062,452

DRINKING FOUNTAIN ATTACHMENT FOR WATER FAUCETS

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Filed May 8, 1961, Ser. No. 108,375
5 Claims. (Cl. 239—25)

This invention relates to drinking fountain attachments for water faucets, and more particularly to an attachment for water faucets which is operable without impedance to the normal water flow of said faucets to provide an upward drinking water stream in kitchen or bathroom faucets.

It is an object of this invention to provide an attachment for water faucets which includes a manually operable valve and external upwardly directed spout operable from said valve by which a drinking fountain may be had at the faucet without impedance of the water downflow therefrom.

It is another object of the invention to provide a drinking fountain attachment for water faucets which is both economical to produce and simple to operate and will not be unsightly when attached to the faucets.

It is a further object of this invention to provide a drinking fountain attachment for faucets which screws onto the faucets readily and is equipped to receive other attachments thereto as well.

It is again an object of this invention to provide an easily manually actuatable attachment for water faucets by which an upwardly directed stream of water is made available while the normal downflow of water is unimpeded, and which may be readily attached to any faucet.

It is still another object of this invention to provide in a drinking fountain attachment for water faucets a simple resilient valve means forming an integral upspout outlet for the drinking stream and operable upon pressure thereon.

It is yet another object of this invention to provide a drinking fountain attachment for water faucets including a resiliently urged closure means normally held in the closed position by said resilient urge and opened to the downflow stream of the faucet upon pressure to provide an upwardly directed stream of water for drinking purposes or the like.

These and other objects of this invention will become more clear from the specification which follows and the appended claims, taken together with the accompanying drawings, in which:

FIGURE 1 is a perspective view of one embodiment of the drinking fountain attachment of this invention;

FIGURE 2 is a top view of the attachment shown in FIGURE 1;

FIGURE 3 is a cutaway side view of the embodiment shown in FIGURE 1;

FIGURE 4 is a view showing how the attachment of FIGURE 1 is affixed to a faucet and how an aerator is attached thereto;

FIGURE 5 is a perspective view of another embodiment of the invention showing additional details thereof;

FIGURE 6 is a top view of the embodiments of the invention shown in FIGURE 5;

FIGURE 7 is a cutaway side view of the attachment shown in FIGURE 5;

FIGURE 8 shows a typical attachment of the invention to a typical faucet;

FIGURE 9 is a perspective view of another form of the drinking fountain attachment of this invention;

FIGURE 10 is a top view of the embodiment of the invention shown in FIGURE 9;

FIGURE 11 is a cutaway side view of the embodiment shown in FIGURE 9; and

FIGURE 12 shows the embodiment of the drinking fountain attachment of FIGURE 9 as connected to a faucet and having a hose attached to the drinking fountain attachment.

When brushing one's teeth, some persons cup their hands under the faucet to get water for rinsing the mouth and drink from cupped hands; others use a glass. It is much more convenient if the water faucet be equipped with an attachment by which a small stream of water may be directed upward in a fountain-like stream for drinking or for mouth-wash purposes.

In FIGURES 1, 2, 3 and 4, to which reference is now made, such an attachment is shown. It consists of a cylinder or housing **10** which has an inner thread **30** near the top thereof and an outer thread **31** near the bottom thereof. Threads **30** are of such nature as to fit a standard water faucet end. Threads **31** correspond to those of the faucet so that other items may be connected to cylinder **10**, as further mentioned below. Cylinder **10** has a transverse bore **32** through the central diameter thereof, to accommodate the barrel **11** of a valve device **33** having a central communicating bore **16** terminating in an outlet aperture **14** to the outside of cylinder **10** and an inlet aperture **15** normally terminating within the wall of cylinder **10**. A coil spring **17** is wrapped around and attached to barrel **11** at **18** and normally urges said barrel **11** to the position thereof shown in FIGURE 3, so that in the normal position, so indicated, inlet aperture **15** is closed to any flow of water downward from the water faucet **34** shown in dashed lines. Cylinder **10** may be screwed onto water faucet **34**. An aerator **38** is connected to the lower threads **31** of cylinder **10**. Aerator **38** includes a washer **37** and a baffle plate **36**. Baffle plate **36** has several perforations **35** in it to permit water flow under pressure through the aerator **38**.

Manual pressure on knob **13** of barrel **11** against the urge of spring **17** of valve **33**, in the direction of arrow **21**, positions inlet aperture **15** of barrel **11** within the flow area inside of cylinder **10**, and positions outlet aperture **14** in the knob **12** on barrel **11** to the dashed position thereof shown in FIGURE 2. Thus, water flowing in the faucet down through cylinder **10** and aerator **38** enters aperture inlet **15** in valve **33** and flows on through bore **16** and out of outlet **14** in an upward stream as shown by arrow **39**. When knob **13** is released, the flow is shut off because inlet **15** of valve **33** is urged back into the wall of cylinder **10** by spring **17**.

In FIGURE 4, the drinking fountain attachment cylinder **10** and aerator **38** is shown as coupled to a typical faucet **34**.

In FIGURES 5, 6, 7 and 8, to which reference is now made, another embodiment of the invention is shown wherein parts which correspond to those shown in FIGURES 1 through 4 are given the same numerical reference designations.

Here again, cylinder **10** with threaded portions **30** and **31** is provided, but has a single threaded bore **40** in the wall thereof. A guide tube **23** is threaded into bore **40**. A valve rod **33** similar to **11** previously shown, but not having knob **13** on the far end thereof, now is inserted into guide tube **23** so that inlet **15** is normally held in the wall of cylinder **10** by spring **17**, here urging valve rod **33** towards the outside of cylinder **10**. Spring **17** is attached to the inner wall of cylinder **10** at **24**. Inlet aperture **15** connects with outlet aperature **14** through the bore **16** in valve rod **33** and normally has no flow-through since inlet aperture **15** is within the wall of cylinder **10**. When pressure in the direction shown by arrow **21** is applied to knob **12**, rod **33** is pushed into guide tube **23** so that inlet aperture **15** is now in the water flow path

through cylinder **10** when the cylinder is attached to a running water faucet **34** (FIGURE 8) and water flows through rod **33** out of outlet **14** in a stream **41**, as shown in FIGURE 8. Upon release of knob **12**, the water flow-through rod **33** is cut off because inlet aperture **15** thereof is returned to the position in the wall of cylinder **10** by the pressure of spring **17** on rod **33**.

In FIGURES 9, 10, 11 and 12, a third embodiment of the drinking fountain attachment of this invention is shown, and here again, the parts forming the same functions as those in the other figures are give the same reference number designations.

The cylinder **10** has inner threads **30** in the upper portion and outer threads **31** in the lower portion thereof. A transverse bore **32** has inserted therein a two-part valve cylinder **42** having an inner communicating bore **16** connecting with outlet **14** outside of cylinder **10**, and a larger inner bore **43** communicating with bore **16**, and thus forming continuous paths **16**, **43** and **28** between inlet aperture **15** and outlet aperture **14**. An upper flow aperture **25** connecting with larger inner bore **43** of valve cylinder **42** is drilled into the casing of valve cylinder **42**. External to cylinder **10** in one surface of valve cylinder **42**, a slot **26** is provided. Slot **26** is generally oval in shape and its longest dimension is in the direction of the longitudinal axis of valve cylinder **42**. Inserted in bore **43** of valve cylinder **42** is a valve pin **27**. Valve pin **27** has a guide pin **44** protruding through slot **26** in valve cylinder **42**. A cross bore is drilled in pin **27** forming an inlet aperture **15** connecting with one end of longitudinal bore **28** (previously mentioned). A spring **17** is inserted between the inner end of pin **27** and the terminal end of center bore **16** of valve cylinder **42**, within the larger inner bore area **43**. Spring **17** normally urges pin **27** towards the outer diameter of cylinder **10**. The travel of pin **27** is limited by the stopping of guide pin **44** against the outer end of guide slot **26**. When pressure is applied to pin **27** against the urge of spring **17** in the direction of arrow **21**, inlet aperture **15** is brought into alignment with input flow aperture **25** so that water flowing through area **19** of cylinder **10** will enter aperture **25** and into inlet **15** through connecting bores **28** and **43** into bore **16** and out of outlet **14** in an upward directed stream, as shown in FIGURE 12.

In FIGURE 12, the drinking fountain faucet attachment of FIGURE 9 is shown attached to a faucet with a hose **45** connected at the bottom end thereof, suggestive of a backyard use as a drinking fountain for children.

There have been shown three embodiments of a drinking fountain attachment for water faucets in accordance with the concept of this invention. Others may occur to those familiar with this art. The principal combination of a screw-on cylinder such as **10** which may be attached to a faucet such as **34** having any one of a variety of spring-loaded valve means such as those represented at **33** of FIGURE 1; **23**, **33** of FIGURE 5; or **42**, **27** of FIGURE 9, generally comprise the inventive concept. The spring-loaded valve devices all have external outlets and normally shut-off internal inlets, held in the shut-off position by a spring such as **17**. The valves are actuated by pressure thereon against the urge of spring **17** to bring the inlet aperture into the water flow so that water may enter the aperture such as **15**, proceed through a connecting aperture such as **16** and out of an outlet aperture **14** communicating with the connecting aperture **16** to provide an upflowing fountain-like stream of water for drinking purposes or the like. In the usual application of the drinking fountain valve attachments for faucets, according to this invention, a restriction on the normal flow path of water is preferable through the faucet to which the drinking fountain attachment is connected. Such a restriction is best provided by an aerator **38** such as shown in FIGURES 3 and 4. A similar aerator such as **38** may also be connected to the attachments shown in FIGURES 5 and 9. Any form of flow impedance device will provide sufficient back pressure to operate the drinking fountain valves according to this invention. It may also be noted that cylinders, such as **10**, used in the invention, may be inserted in the event that the faucet has internal rather than external threads.

What is claimed as new is:

1. A drinking fountain attachment for water faucets comprising a cylinder adapted for coupling to a faucet at one end and having a coupling means similar to that of said faucet at the other end thereof, said cylinder having a cross bore therein perpendicular to the axis of said cylinder; a spring-loaded valve inserted in said cross bore having a downward inlet, an upward outlet, and having a normally closed position and an open position within said cross bore; and an actuating means coupled with said spring-loaded valve whereby upon pressure upon said actuating means against the spring-loaded position of said valve, said valve is opened to permit a small amount of the water normally flowing out of said faucet when in use to be directed out of said valve upwardly as a drinking fountain stream.

2. In combination with a water faucet, a drinking fountain valve attachment comprising a cylindrical tube threaded internally at the top thereof for attachment to said faucet and at the bottom thereof to receive an aerating device, said cylindrical tube being drilled through transversely; a valve means inserted in said drilled-through portion of said cylindrical tube, said valve means comprising a slidable hollow rod having an inlet aperture near one end thereof within said cylindrical tube and an outlet aperture external to said cylindrical tube, said inlet and outlet apertures being interconnected by the central bore within said hollow rod; and a spring attached at one end thereof to said hollow rod, the other end thereof seating against the inner wall of said cylindrical tube, said spring normally urging said hollow rod to a closed position wherein said inlet aperture is closed off by being positioned within the wall of said cylindrical tube and out of the flow stream of water in said faucet, said hollow rod being positionable against the urge of said spring to an open position wherein said inlet aperture is in the flow stream of water in said faucet and whereby said flow stream enters into said inlet aperture through the connecting bore of said hollow tube and flows out of said outlet aperture in an upward stream for drinking therefrom.

3. In combination with a water faucet, a drinking fountain attachment comprising a cylindrical housing; a slidable valve transversely positioned through a diametral axis of said housing, said slidable valve having resilient means attached thereto and seating against the inner wall of said housing; an inlet aperture and an outlet aperture, said inlet and outlet apertures thereof being interconnected with a communicating passage through said valve, the inlet aperture thereof being normally positioned by the urge of said resilient means so as to be closed off by being within the wall of said housing, said outlet aperture being at all times outside of said housing and directed upwardly thereof; and pressure-responsive means coupled with said valve and positioned outside of said housing whereby when pressure is applied thereto, said valve is moved into said housing to position said inlet aperture within the stream of water in said faucet, the water flowing into said inlet aperture and out of said outlet aperture in an upward stream for drinking.

4. A drinking fountain attachment for water faucets comprising: a tubular housing having means at one end for coupling to a water faucet and means at the other end thereof for attachment of an aerator or similar article thereto, said housing having a central cross-bore; a feed through valve means slidably inserted in said cross-bore and having a small inlet aperture, said valve having a normal position in which said inlet aperture is within the wall of said tubular housing, and thereby closed to the downflow of water through said tubular housing; said

valve means being movable within said cross-bore to bring said inlet aperture into said downflow, said valve means also having an upwardly directed outlet aperture communicating therethrough with said inlet aperture, and a resilient means fixed at one end thereof against the interior of said housing and at the other end thereof to said valve means to urge said valve means into said normal position wherein said inlet aperture is closed to water downflow, said valve means being manually slidable against the urge of said resilient means to bring said inlet aperture within said water downflow of said faucet to permit a stream of water to flow through said valve means and out of said outlet in an upward direction.

5. In a drinking fountain attachment of the character described a valve comprising: a housing cylinder; a guide tube having an outlet aperture external to said housing cylinder and a keyway in a part of the surface thereof; a communicating inner bore within said guide tube in communication with said outlet aperture; a separate inlet pin slidably inserted in said guide tube, said inlet pin having an inlet aperture and a communicating bore therethrough; a spring inserted between said inlet pin and said communicating inner bore of said guide tube to urge said inlet aperture of said inlet pin to a normally closed position, said communicating inner bore

of said guide tube and said communicating bore of said inlet pin being in communication and in alignment with one another; and a stop key positioned in said inlet pin protruding through and movable in said keyway to limit the motion of said inlet pin within said guide tube between said normally closed position and an open position thereof, whereby when pressure is applied to said inlet pin against the urge of said spring said inlet aperture of said inlet pin is moved into said guide tube to said open position and is thereby positioned in the stream of water to permit water to flow into said communicating bore of said inlet pin, through said communicating inner bore of said guide tube and out of said outlet aperture in a fountain stream from which one can drink.

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