

[54] **EMERGENCY EYE WASH FOUNTAIN APPARATUS**

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[58] Field of Search 4/166-168, 4/145, 152, 187 R, 191; 239/25, 443, 446, 393; 128/249

[56]

References Cited

UNITED STATES PATENTS

2,999,249	9/1961	Logan et al.	4/166
3,079,088	2/1963	Hermann et al.	239/25

3,809,315	5/1974	Wright	4/166 X
3,858,252	1/1975	Ejchorszt	4/152 X

FOREIGN PATENTS OR APPLICATIONS

20,090	11/1934	Australia	239/25
722,094	11/1965	Canada	239/25

Primary Examiner—Richard E. Aegerter

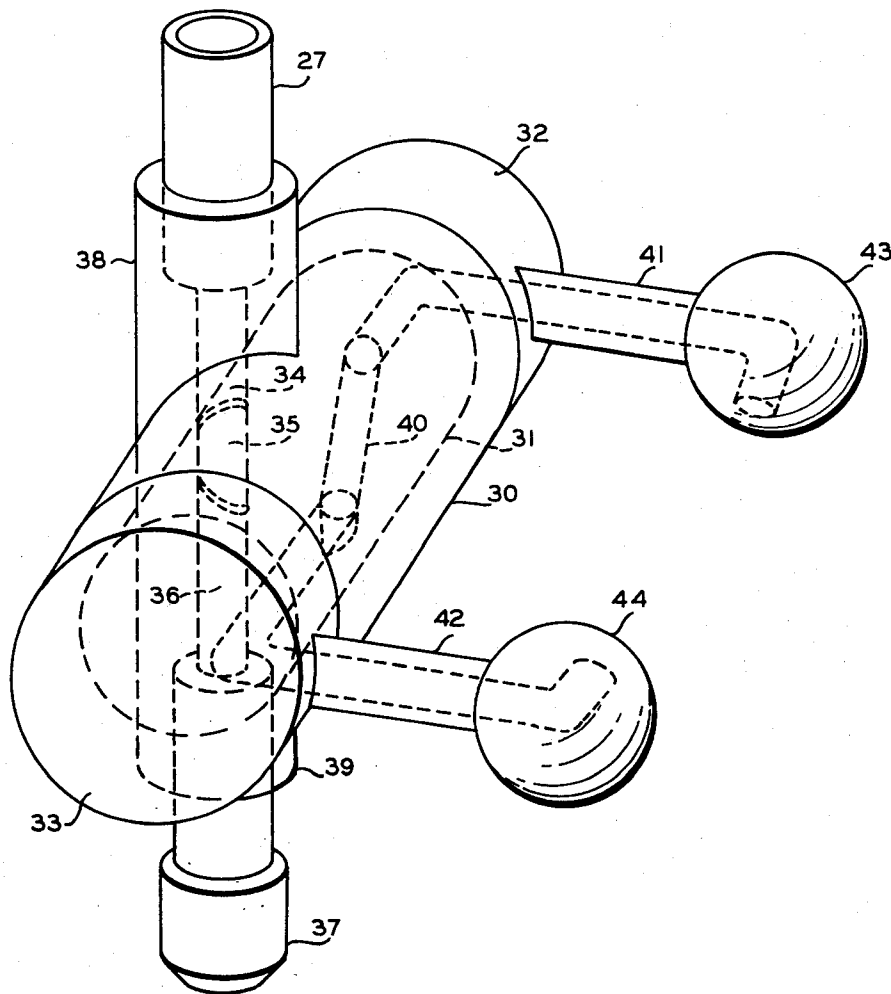
Assistant Examiner—Stuart S. Levy

[57]

ABSTRACT

Eye wash fountain apparatus which can be attached to a sink faucet without disturbing its normal use. When the need arises for irrigating the eyes and face of a worker due to an accident, the apparatus is quickly and easily swiveled into an eye-flushing position in which a valving arrangement diverts water from the sink faucet through the spray heads of the fountain.

5 Claims, 4 Drawing Figures



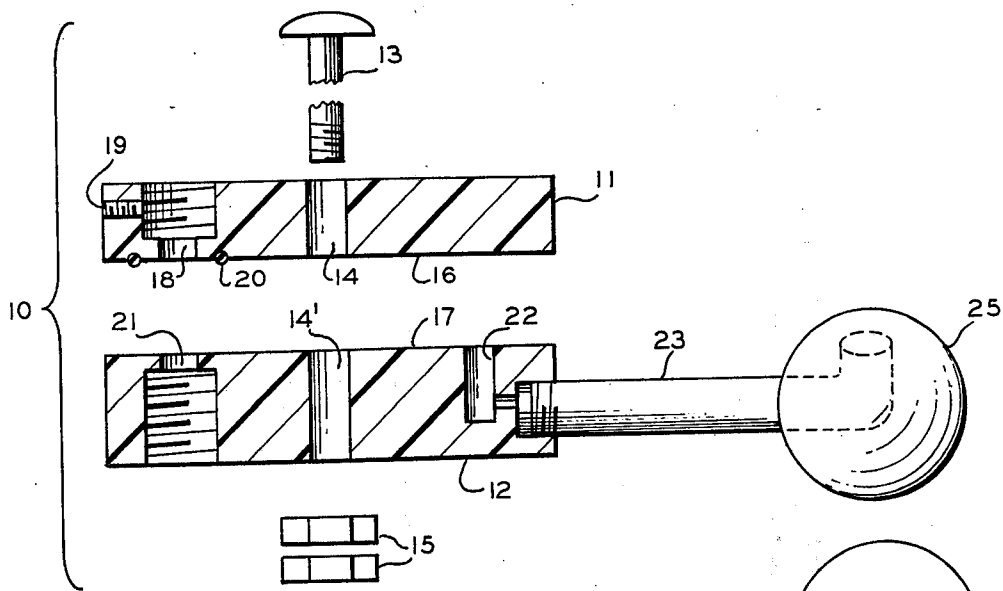


FIG. 1

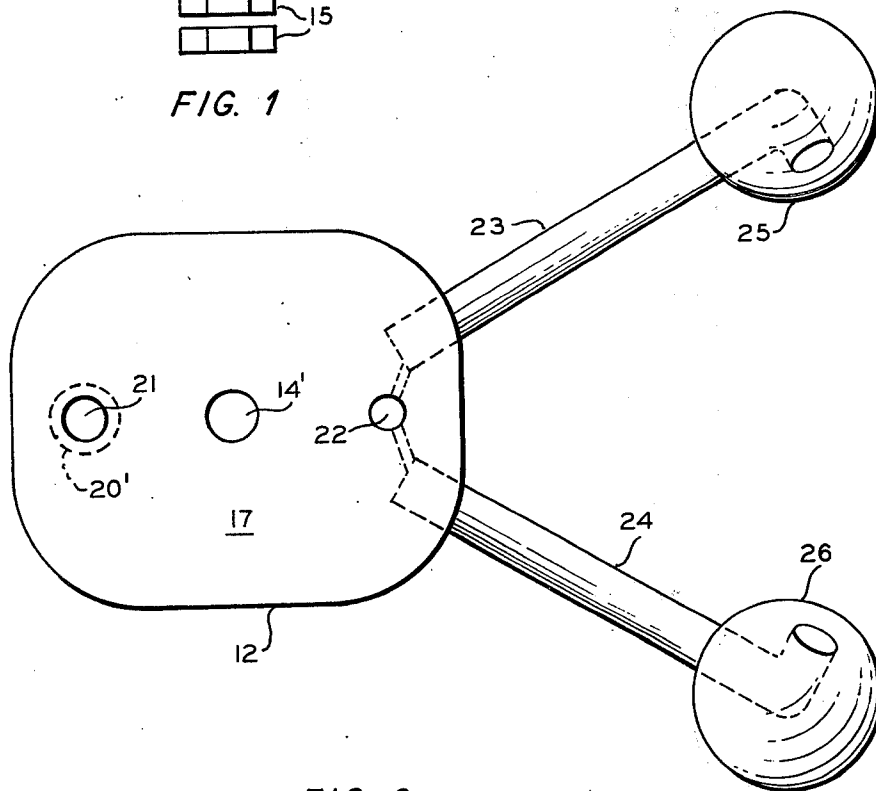
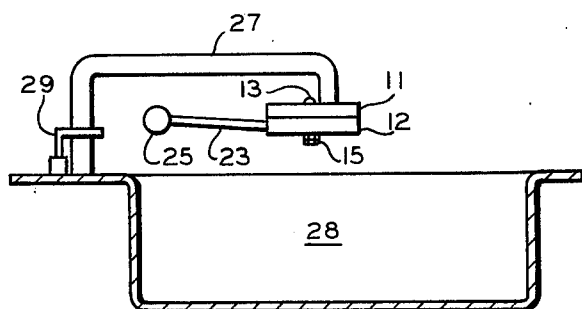
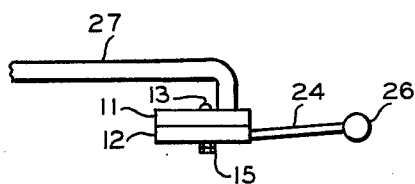


FIG. 2



(a)



(b)

FIG. 3

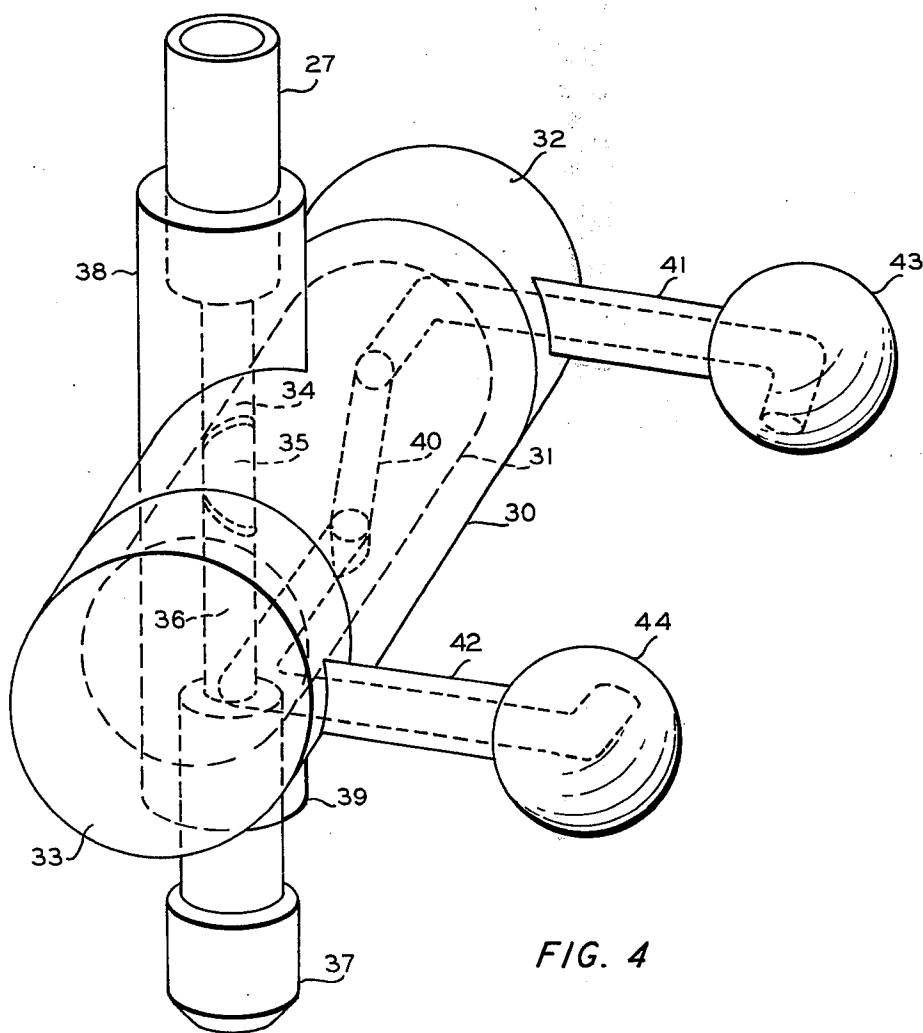


FIG. 4

EMERGENCY EYE WASH FOUNTAIN APPARATUS

BACKGROUND OF THE INVENTION

This invention relates to an eye wash fountain apparatus which can be attached to a sink faucet without disturbing its normal use.

Emergency eye wash fountains are required for employee safety in laboratories, factories and warehouses in which employees handle corrosive materials which may be injurious to their eyes. Eye wash fountains of various types have been in common use for many years. A retractable fountain is described in U.S. Pat. No. 2,999,249 of Logan et al. Such fountains are commonly provided at stations which are adjacent to but somewhat removed from the immediate work area. Because the need to use such facilities is infrequent, their locations are not as well known to workers as are the locations of the commonly used sinks and lavatories. It is particularly desirable to have eye flushing facilities immediately at hand in chemical laboratories where the risk of eye injury is high.

SUMMARY OF THE INVENTION

According to my invention, an eye wash fountain attachment is provided which can be attached to a sink faucet which operates in its normal fashion with the eye wash spray heads swiveled back out of the way but when the heads are pivoted forward into an eye-flushing position, water is diverted from the faucet into the spray heads.

It is an object of my invention to provide an apparatus which can quickly convert a common sink faucet into an eye wash fountain.

Another object is to provide a simple and inexpensive eye wash fountain which can be attached to any sink faucet without interfering with the normal use of the faucet.

These and other objects will be apparent from the following description.

The apparatus of this invention includes a valve body, spray heads and conduit means rigidly connecting the spray heads to the valve body. The valve body has two portions, one which is normally fixed and attaches to the sink faucet, and one which swivels and is pivotally attached to the fixed portion and rigidly attached to the spray heads. By grasping the spray heads and their conduit means one can swivel the spray heads into operating position. This movement changes the position of the swivel portion of the valve body and by thus realigning conduits within the valve body redirects water from the faucet through the spray heads.

BRIEF DESCRIPTION OF THE DRAWING

The invention can better be understood by reference to the drawing in which:

FIG. 1 is an exploded sectional view of one embodiment of my eye wash fountain attachment;

FIG. 2 is a plan view of the lower, swivel portion of the eye wash fountain attachment illustrated in FIG. 1;

FIG. 3, views (a) and (b), is a schematic illustration of my eye wash fountain attached to a faucet in the out-of-use position (a) and in the forward eye-flushing position (b); and

FIG. 4 is an isometric illustration of another embodiment of my eye wash fountain attachment in which the spray heads swivel around the horizontal axis.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to FIG. 1, an exploded sectional view of the preferred embodiment of my eye wash fountain attachment illustrates the valve body 10 as formed from two blocks, an upper or normally fixed portion 11 and a lower, swivel portion 12 which is pivotally attached to the fixed portion 11 by bolt 13 passing along the pivotal axis of the assembly through bore 14 in portion 11 and bore 14' in portion 12 and secured by locking nuts 15. In the assembled position blocks 11 and 12 have flat abutting surfaces 16 and 17, respectively.

Block 11 is drilled with an inlet channel 18 which is threaded at its inlet end so that it may be attached to the threaded nipple of a sink faucet. Inlet channel 18 terminates at surface 16 of the fixed portion 11. A set screw 19 can be used to insure that the fixed portion 11 of the valve body does not rotate on the sink faucet when the eye wash fountain is rotated into its desired position. A water tight connection between portions 11 and 12 of valve body 10 is made by means of O-ring 20 positioned in a groove surrounding the outlet end of inlet channel 18.

In swivel portion 12 of valve body 10 is an outlet channel 21 having its inlet end at the surface 17 of the swivel portion 12 and terminating in a threaded outlet end which can receive an aerator of the type commonly used on sink faucets. Outlet channel 21 is positioned in swivel portion 12 to align with inlet channel 18, as illustrated in FIG. 1, when the spray heads are in an out-of-use position. In this manner water from the sink faucet passes straight through the valve body and the eye wash fountain attachment does not interfere with the normal use and operation of the faucet.

Positioned 180 degrees from the outlet channel 21 with respect to the pivotal axis defined by bore 14' is a second outlet channel 22 which has its inlet end at the surface 17 of swivel portion 12 and passes through said swivel portion 12 in a Y-shape, the outlet ends of the Y-shaped outlet channel 22 being connected to conduit means 23 and 24 which in turn are connected to spray heads 25 and 26 respectively. Conduit means 24 and spray head 26 are not shown in FIG. 1 but are shown in FIG. 2 which is a plan view of the lower or swivel block portion 12 of the valve body and includes the conduit means and spray heads. FIG. 2 also illustrates clearly the Y-shape of outlet conduit 22. As illustrated in FIG. 2, the outlet arms of Y-shaped conduit 22 can be reduced in diameter from the inlet bore in order to keep the pressure of the eye flushing water streams as desired. Also in FIG. 2 the inlet end of outlet conduit 21 is shown in the surface 17 of swivel portion 12 and the circular dotted concentric line 20' illustrates the position of O-ring 20 when block portion 12 is in the out-of-use position.

In the preferred embodiment of my invention blocks 11 and 12 are each a flat symmetrical member with two parallel major flat surfaces separated by the thickness of the blocks as measured along the pivotal axis. The configuration of the perimeters of these blocks are alike and the blocks are symmetrical but non-circular so that when they are aligned in either the out-of-use or in the eye-flushing positions their alignment can be determined by feeling the edges and the bounding surfaces of the two blocks of the valve body. The minimum width of the blocks is determined by the distance of inlet conduit 18 and O-ring 20 from the axis along

bore 14 since the O-ring 20 must remain in full contact with surface 17 of block portion 12 when this swivel portion is pivoted from one position to the other.

Outlet conduit 22 is positioned with respect to the pivotal axis so that when the swivel portion 12 is rotated 180 degrees from its out-of-use position outlet conduit 22 will be aligned with inlet conduit 18. Water passing through the sink faucet is then forced to enter outlet conduit 22, conduit means 23 and 24 and spray heads 25 and 26.

The out-of-use and eye-flushing positions of the swivel portion 12 are illustrated schematically by views (a) and (b) of FIG. 3. Referring to FIG. 3(a), fixed portion 11 of the valve body is shown attached at its inlet conduit to sink faucet 27. In this position the faucet can be operated normally with water flowing into sink 28 as controlled by water valve 29. By pivoting the swivel portion 12 about its axis 180°, as shown in FIG. 3(b), the second outlet channel of swivel portion 12 is aligned with inlet channel 18 of fixed portion 11 so that water passes through the conduit means and into the spray heads where it can be directed into the eyes and face of the user.

While various configurations for channels 21 and 22 in swivel portion 12 are possible, the parallel channels illustrated in FIGS. 1 and 2 are preferred in order to simplify construction of the eye wash fountain attachment. As illustrated, both the outlet channels 21 and 22 and the inlet channel 18 lie along axes which are parallel to the pivotal axis of the valve body defined by bores 14 and 14', while the two outlet ends of the Y-shaped channel 22 lie in an edge of the swivel block portion 12. In this way the conduit means 23 and 24 can be threaded directly into the edge of block portion 12 so that they communicate with the outlet arms of Y-shaped channel 22.

While the fountain attachment which pivots about the vertical axis is preferred, the invention can also be constructed so that the pivotal portion of the valve body rotates about a horizontal axis. Such an embodiment is illustrated in the isometric view of FIG. 4. In this embodiment the normally fixed portion of the valve body is a cylindrical sleeve 30 in which is positioned the swivel portion of the valve body which is a cylindrical plug 31. Plug 31 fits snugly inside sleeve 30 and has retaining means at each end. Preferably these are simply enlarged end portions 32 and 33 which extend beyond each end of the sleeve 30 and fit snugly against each end thereof so that the plug 31 is held in a fixed axial position within sleeve 30.

Fixed cylindrical sleeve 30 has an inlet channel 34 which passes through the wall of the sleeve so that its outlet end lies in the inner surface of the sleeve abutting the surface of plug 31. Outlet channel 35 of plug 31 passes straight through this plug with its inlet end lying in the surface of the plug alignable with the outlet end of inlet channel 34 when the spray heads are in the out-of-use position. The outlet end of channel 35 in plug 31 in the out-of-use position is alignable with discharge opening 36 which is in the lower portion of the wall of sleeve 30 and spaced around the circumference from the inlet channel 34. In the out-of-use position illustrated in FIG. 4, channels 34, 35 and 36 are aligned so that water from faucet 27 passes directly through the valve body and out through aerator 37. In the embodiment illustrated in FIG. 4 extensions 38 and 39 are provided on sleeve 30 for attachment to the sink faucet 27 and aerator 37, respectively.

Plug 31 also contains a Y-shaped outlet conduit 40. The inlet end of this Y-shaped outlet channel lies in the surface of plug 31 adjacent to inner surface of sleeve 30 and alignable with the outlet end of inlet channel 34 when the plug is rotated 180 degrees from the position shown in FIG. 4. The two outlet ends of Y-shaped channel 40 pass through each end 32 and 33 of plug 31 and there communicate with conduit means 41 and 42 which are attached to spray heads 43 and 44, respectively. As illustrated in FIG. 4, when the valve body in the out-of-use position water passes directly through the eye wash fountain attachment without interfering with the operation of the sink faucet. In this position spray heads 43 and 44 are oriented with their spray openings in a downward direction. When the spray heads are rotated 180 degrees with the pivotal valve body 31, the spray heads are then positioned to direct the flow of water upwardly into the eyes and face of the user.

Various materials can be used to construct the apparatus of this invention, such as polyethylene, polypropylene, polystyrene, ABS resins, polyamides, polyesters, polyphenylene sulfides, polytetrafluoroethylene, polyvinyl chloride, and the like. Also metals such as aluminum, brass, zinc, and the like can be used satisfactorily. Polypropylene is presently preferred because of its durability, light weight, ease of molding and machining and low cost.

Embodiments other than those specifically described herein will be apparent to those skilled in the art without departing from the spirit or scope of my invention. I claim:

1. An eye wash fountain for mounting on a sink faucet comprising:

a valve body having a normally fixed portion and a swivel portion pivotally attached to said fixed portion, said fixed and swivel body portions having major flat abutting surfaces in a plane perpendicular to the axis along which said body portions are pivotally attached, and

a pair of spray heads rigidly connected to said swivel portion of said valve body by two conduit means adapted to position said spray heads in a forward eye-flushing position or a back out-of-use position, said fixed body portion having an inlet channel connectable to a sink faucet and passing straight through said fixed body portion with the outlet end of said inlet channel lying in said abutting surface of said fixed body portion, and

said swivel body portion having first and second outlet channels,

said first outlet channel passing straight through said swivel body portion with the inlet end of said first outlet channel lying in said abutting surface of said swivel body portion, said first outlet channel being alignable with said inlet channel when said spray heads are in said out-of-use position and thus aligned directed to pass water straight through said valve body for normal faucet use, and

said second outlet channel passing through said swivel body portion in a Y-shape with the inlet end of said second outlet channel lying in said abutting surface of said swivel body portion and the two outlet ends of said second outlet channel being connected to said conduit means of said spray heads, said second outlet channel being alignable with said inlet channel when said spray heads are swiveled into said forward eye-flushing position and

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thus aligned directed to divert water from said inlet channel to each of said conduit means.

2. Apparatus according to claim 1 wherein the inlet end of said inlet channel is threaded to receive and connect to the threaded nipple of a sink faucet, and the outlet end of said first outlet channel is threaded for connecting to an aerator.

3. Apparatus according to claim 1 comprising an O-ring retained in a groove in said abutting surface of said fixed body portion surrounding said outlet end of said inlet channel.

4. Apparatus according to claim 1 wherein said fixed and swivel body portions are each a flat symmetrical

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member with two parallel major flat surfaces, said fixed and swivel body portions having alike, symmetrical, non-circular perimeters defining the edges of said members bounding said surfaces so that said edges are in true alignment only in said out-of-use and eye-flushing positions which are spaced 180 degrees apart around said pivotal axis.

5. Apparatus according to claim 4 wherein said inlet and first outlet channels are along axes parallel to said pivotal axis and said two outlet ends of said second outlet channel lie in an edge of said swivel body portion.

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