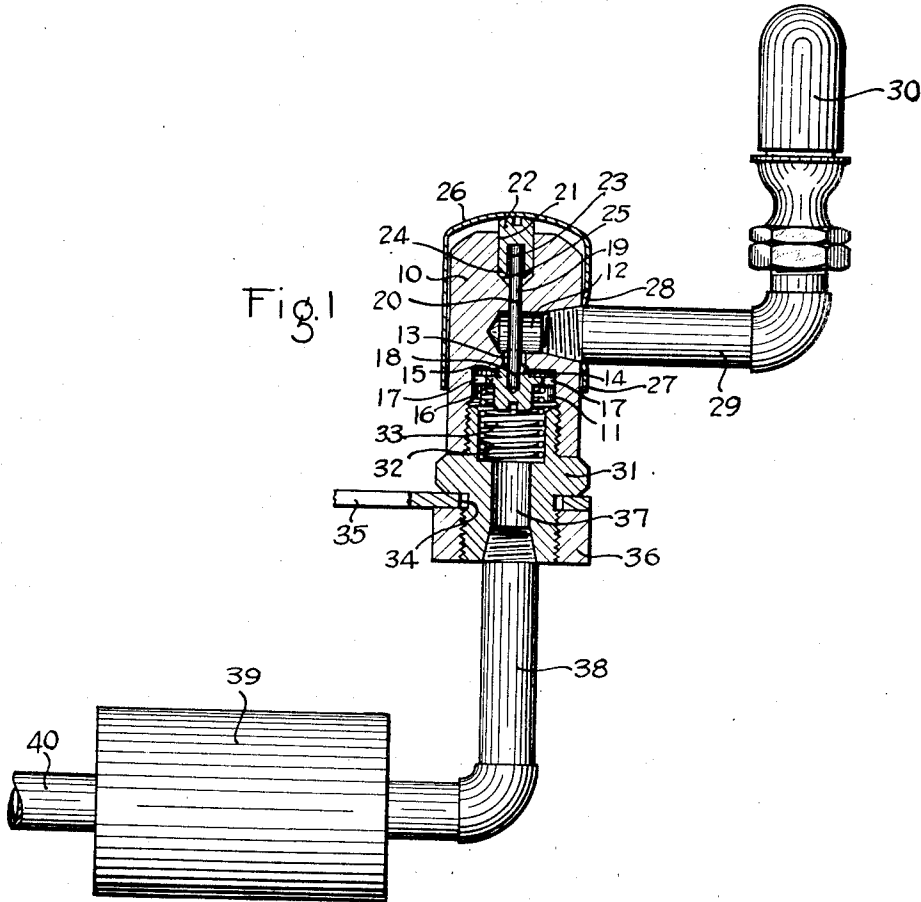
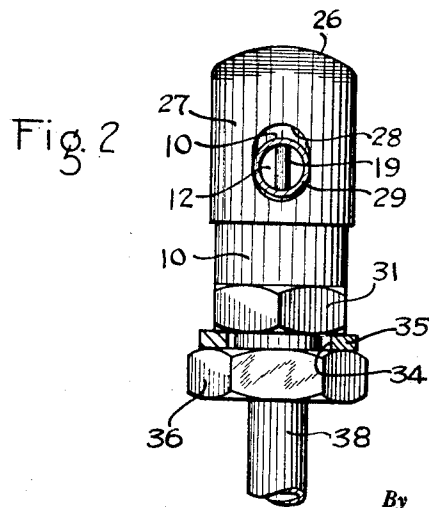


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PUSH BUTTON VALVE
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PUSH BUTTON VALVE

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1 Claim. (Cl. 251—137)

This invention relates to valves and more particularly to manually operated push button valves adapted for various uses such as means for controlling the supply of fluid under pressure to operate whistles, gong ringers and similar devices.

The primary object of the present invention is the provision of an improved push button valve of simple design which is effective in operation and one which may be constructed at a comparatively small cost.

A further object of my invention is to provide a push button type of valve device in which a valve operating cap is held associated with the valve device by the fluid outlet pipe of the valve device.

Other objects and advantages will appear from the following description of an illustrative embodiment of the present invention.

In the drawing; Fig. 1 is a diagrammatic view of a portion of the signal system showing the push button valve in section and embodying my invention;

Fig. 2 is an elevational view of the push button valve shown in Fig. 1 in a plane at right angles to that of Fig. 1.

The push button valve device, shown in the accompanying drawing, may comprise a body portion 10 containing a pair of chambers 11 and 12. A passage 13 connects the chambers 11 and 12 and a valve seat 14 is formed at the juncture of the passage 13 and the chamber 11. A valve 15 is adapted to register with the seat 14 to control the passage of fluid under pressure from the chamber 11 to the chamber 12. The valve 15 is provided with a guide flange 16 which serves to maintain it centrally disposed within the chamber 11. The marginal portion of the flange 16 is provided with cut-out portions 17 to permit a free flow of fluid past the flange. The valve 15 contains a bore 18 adapted to receive an actuating pin 19 which is guided in a bore 20 formed in the body portion 10 of the valve device. The pin 19 is secured in the bore 18 of the valve 15 by means of a pressed fit. The upper extremity of the pin 19 lies in an enlarged portion 21 of the bore 20. A push button 22 which contains a recess 23 is adapted to fit loosely over the upper end of the pin 19 and forms a sliding fit in the enlarged bore 21. The lower end of the button 22 forms a valve 24 adapted to register with a seat 25 formed at the base of the bore 21. A cap 26 adapted to cover the top of the valve body 10 is provided with a depending marginal flange 27. By reason of its size and

shape, the cap 26 provides a ready means for the application of manual pressure necessary to actuate the valve 15. An elongated aperture 28 formed in the flange 27 of the cap 26 is adapted to register with the opening through which a pipe 29 is connected to the chamber 12. The application of the pipe 29 serves as a means for preventing the accidental removal of the cap, while the elongated aperture 28 permits the necessary displacement of the cap to effect the operation of the valve.

A whistle 30 which is adapted to be sounded by the admission of fluid under pressure is connected to the outer end of the pipe 29.

The outer end of the chamber 11 is provided with screw-threading adapted to receive a cap nut 31. A recess 32 formed in the nut serves to position and retain a coil spring 33 which acts against the flange 16 of the valve 15 to normally retain the valve against the seat 14. The outer end of the nut 31 is reduced in size so as to be passed through a hole 34 formed in a suitable mounting bracket 35. The reduced portion of the nut is threaded to receive a nut 36 which serves to anchor the valve upon the mounting bracket 35. A longitudinally extended passage 37 which extends through the nut is threaded to receive a fluid supply pipe 38. The supply pipe is connected to a reservoir 39 which is adapted to be supplied with fluid under pressure from any suitable source through a pipe 40.

The coil spring 33 normally urges the valve 15 against the seat 14 so that fluid under pressure supplied to the chamber 11 from the reservoir 39 is trapped in the chamber.

When a blast of the whistle 30 is desired, the operator may exert manual pressure upon the cap 26 to cause the valve 15 to be depressed against the action of the coil spring 33. As the valve 15 leaves the seat 14, fluid under pressure which is supplied to the chamber 11 from the reservoir 39 passes the valve 15 and is supplied through passage 13, chamber 12 and pipe 29 to operate the whistle 30.

The aperture 28 in the flange 27 of the cap 26 is elongated sufficiently to permit the cap to be moved downwardly against the button 22 until the valve 24 at the lower end of the button engages the seat 25. The seating of the valve 24 prevents the escape of fluid under pressure through the bore 20 around the actuating pin 19. In this manner it is possible to provide a push button valve in which the loss of fluid under pressure past the actuating means is reduced to a minimum so that the operation of the whistle

is in no way impaired through the loss of operating fluid under pressure which should be utilized for effecting the operation of the whistle. Fluid under pressure will be supplied to the whistle as long as the cap 26 is maintained under sufficient pressure to retain the valve 15 away from its seat. Upon the relief of manual pressure from the cap 26, the coil spring 33 will act to seat the valve 15 and terminate the blast of the whistle by cutting off the supply of fluid under pressure from the reservoir 39 to the whistle 30.

From the foregoing description, it will readily be understood that a simple and effective push button valve has been provided for use in conjunction with signal devices. The valve device of the present invention provides a novel means for insuring the prompt and proper operation of the whistle by providing a valve means effective to prevent the loss of fluid under pressure which should be utilized in sounding the whistle. Furthermore, the valve device of the present invention may be manufactured and assembled at a comparatively low cost and by reason of its simplicity of design and operation may be used

for an indefinite period of time without fear of fatigue or faulty operation.

While the invention has been described in considerable detail in the foregoing specification, it is understood that various changes may be made in its embodiment without sacrificing any of the advantages hereinafter claimed.

Having now described my invention, what I claim as new and desire to secure by Letters Patent, is:

A fluid pressure controlling valve device comprising a valve body having a fluid inlet and a fluid outlet, a pipe connected to said outlet, a valve mounted in said body for controlling communication from said inlet to said outlet, and a cap movably mounted on said valve body for operating said valve, said cap having an elongated opening extending longitudinally of the valve body and through which said pipe extends, whereby said pipe acts to retain said cap associated with said valve body, while permitting movement of the cap to operate said valve.

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