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J. E. GRUND ET AL,
MULTIPLE INTAKE VALVE

Original Filed May 1, 1923

Fig. 1.

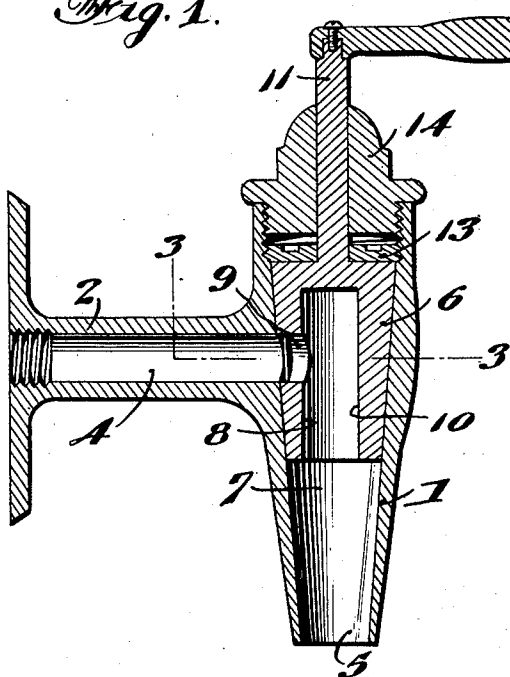


Fig. 2.

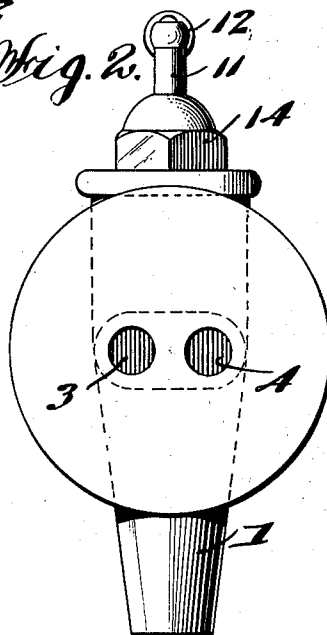


Fig. 3.

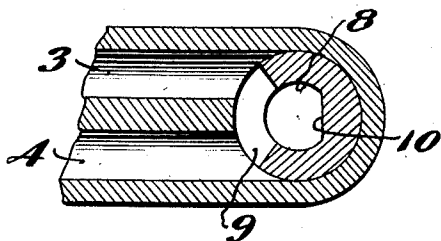
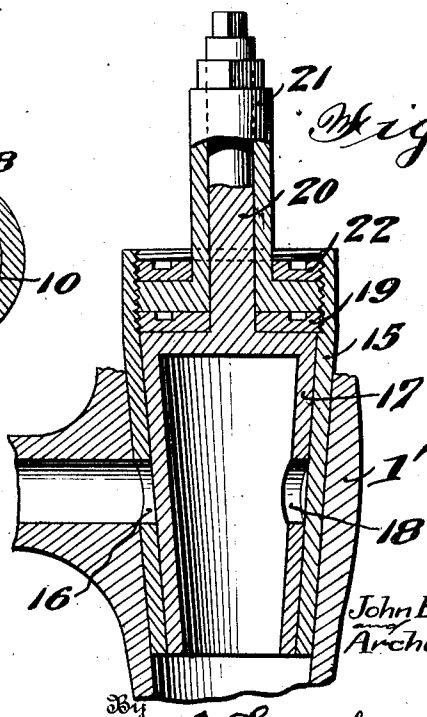


Fig. 4.



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MULTIPLE INTAKE VALVE.

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This invention relates to multiple intake valves, and particularly to a turning plug valve adapted to have its intakes connected with different sources of supply.

5 An object is to provide a valve of this character which can be set to draw liquid from both intakes, or to close off both intakes, or to connect the discharge with only one of the intakes, the structure being such
10 that the proportion of liquid or fluid passing through the valve from the two intakes can be varied.

A further object resides in so constructing the parts that the turning plug can be adjusted to take up looseness, due to wear or
15 other causes, and thus maintain the valve always in most efficient condition.

A further object resides in so constructing the turning plug and the passage within the
20 valve that liquid passing therethrough will not have a circular or swirling travel, and consequently spray at the discharge will be avoided.

With the above and other objects in view, which will be apparent to those skilled in the
25 art, our invention includes certain novel features of construction and combinations of parts which will now be set forth.

In the drawing:

30 Figure 1 is a vertical sectional view through a valve constructed in accordance with our invention.

Fig. 2 is a view in elevation, taken from the intake end of the valve.

35 Fig. 3 is a fragmentary sectional view on the line 3—3 of Fig. 1.

Fig. 4 is a sectional view taken vertically through a modified form of valve structure.

In the main embodiment, the shell 1 is supported in vertical relation by a neck 2 which has the horizontally extending spaced intake
40 passages 3 and 4. The shell 1 is cored or otherwise hollowed out and the opening thereof is formed on a long, gradual taper, this opening terminating at its lower smaller
45 end in a discharge mouth 5. The intake passages 3 and 4 open into the passage of the shell 1 and are horizontally spaced, the remaining ends of these passages being threaded
50 or otherwise adapted for connection to sources of liquid or fluid supply.

The turning plug 6 is tapered to correspond with the tapering of the shell passage 7, and is made of a diameter to fit and turn

within that portion of passage 7 into which
55 intake passages 3 and 4 open. This plug 6 has a central passage 8 opening through that end disposed adjacent the discharge mouth 5 of shell 1, and a wide intake port 9 opens laterally through the wall of the plug to be
60 in line with the discharge ends of intake passages 3 and 4. The wall of discharge passage 8 in the plug 6 is flattened as at 10, and this flattened side is disposed opposite the port 9, so that liquid or fluid passing through the
65 port will strike against the flat wall and swirling or rotating currents will be broken up.

The plug 6 has an operating stem 11 extending axially from the head end thereof,
70 and an operating handle 12 is carried by the end of this stem.

The upper end of passage 7 is internally screw-threaded, and an adjusting nut 13, having an opening to receive stem 11, is
75 turned into this threaded end of the passage to bear against the head of plug 6 and hold the plug in proper fitting within the passage 7 of shell 1. This adjusting nut can be
80 turned into place and adjusted by the use of a spanner wrench or other suitable tool. A cap 14, having an opening through which stem 11 passes, is turned into the threaded
85 end of passage 7 to form a bearing for stem 11, and to close the open top of the shell 1.

In the use of our improved valve, the intake passages 3 and 4 will be connected with separate liquid or fluid supplies, and the valve is preferably supported in the position
90 shown in the drawings, with the discharge mouth 5 downwardly. When it is desired to draw off liquid from one of the intake passages, the plug 6 is turned to bring port 9 into registry with the predetermined passage, and a solid portion of the plug is dis-
95 posed to cover the remaining intake passage. Continued turning of the plug will dispose the port 9 to establish communication with both of the intake passages, and by adjusting the position of the valve plug 6, the de-
100 gree of opening from the two passages can be proportioned to correspondingly proportion the liquid from the two sources of supply. Liquid passing through port 9 will flow from discharge mouth 5, and as the
105 stream of liquid strikes the flattened wall or side 10 in the discharge passage 8 of plug 6, swirling or circular movement is stopped

and consequently there will be no spray or splashing at the discharge mouth 5 of the valve.

In the modified construction, referring to Fig. 4, the shell 1' is constructed in the same manner as hereinbefore described, and any number of intake passages can be provided with their inner ends in communication with the passage of the shell. The turning plug 15, turning within shell 1, is provided with a tapered passage, this passage being internally screw-threaded at its upper end. A port 16 is provided through plug 15 in line with the intake passages of the shell, and a second turning plug 17 is mounted to turn within the plug 15, this second plug having a port 18 which lines up with port 16 and the intake passages of the shell. An adjusting nut 19 is turned into the threaded end of plug 15 to properly hold plug 17 in its working position, the turning stem 20 of plug 17 being extended through this nut. A hollow turning stem 21, revolubly receiving stem 20 is provided with a threaded flange to be turned into the threaded end of plug 15 to jam against nut 19, and a locking nut 22 is provided to retain this stem 21 in place.

This modified form of the valve structure provides a double seal between the intake and discharge, and with the use of this structure, it will be possible to provide a plurality of ports 16 through plug 15 and secure a wider range of opening and closing adjustments by manipulating the two turning plugs.

While in the foregoing we have shown and described only certain specific embodiments, it will be appreciated that changes and variations can be made in the form and ar-

rangement of the parts, without departing from the spirit and scope of our invention.

We claim:

1. In a valve, a shell provided with a discharge passage and having an intake passage opening laterally thereinto, a turning plug mounted in the shell in line with the intake passage, and provided with a substantially circular bore opening for discharge at one end, said turning plug having a lateral port in line with the intake discharge and having the bore thereof flattened on that side opposite the port, and means to turn the plug.

2. In a valve, a shell having an intake passage opening thereinto, a turning valve plug mounted in line with the intake passage provided with a substantially circular bore flattened on one side, and a port opening laterally through said turning plug in line with the intake passage, and at a point diametrically opposite the flattened wall of the bore.

3. A valve comprising a shell having a valve-receiving opening therein, spaced and separated intake passages leading into said valve opening, a turning plug valve mounted in the opening in line with the intake passages, said turning plug valve having a substantially circular bore therein opening to discharge at one end and flattened on one side, and a lateral port through the wall of the turning plug valve diametrically opposite the flattened wall elongated laterally to communicate with the two passages when the plug is turned to an opened position.

In testimony whereof we affix our signatures.

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