

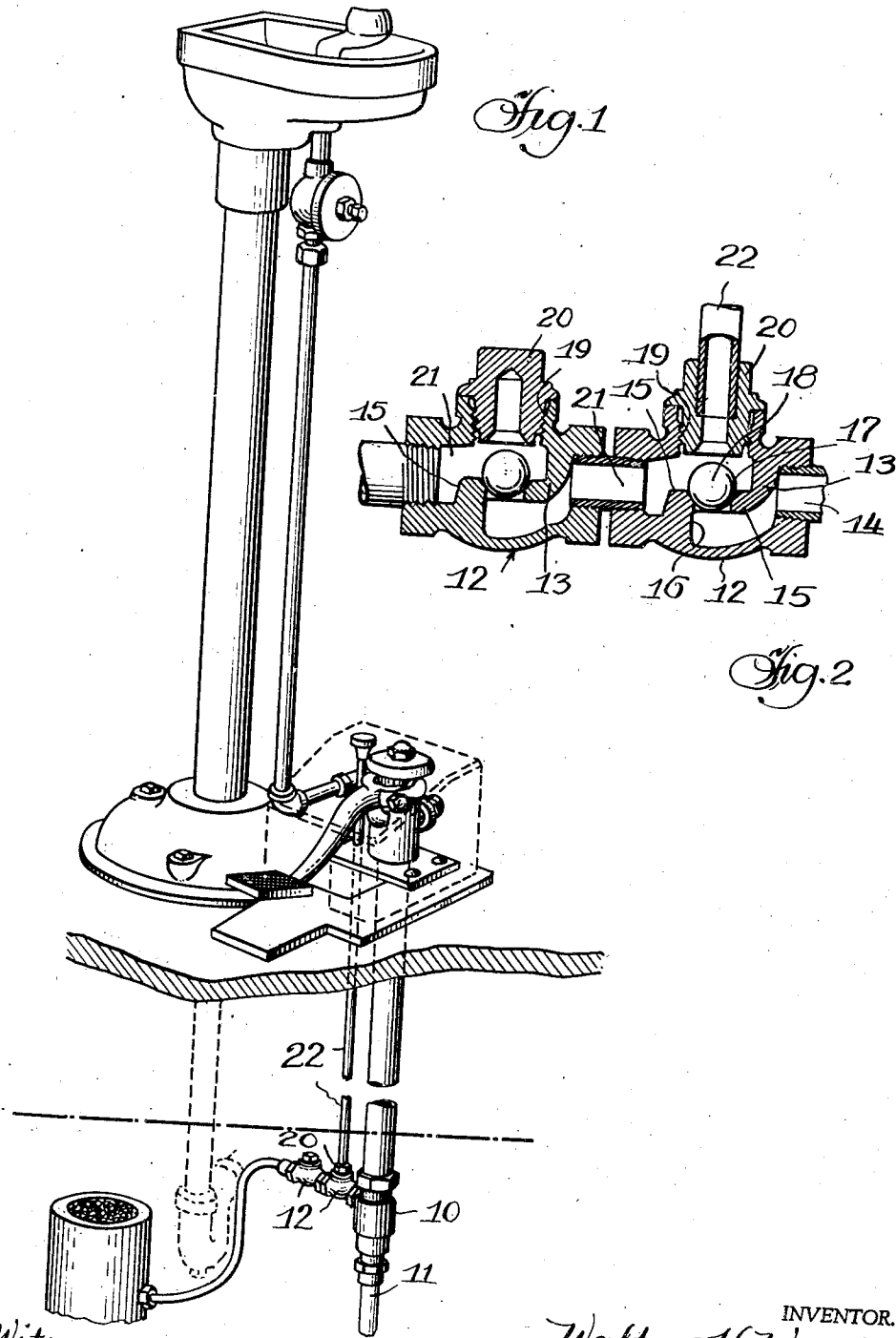
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WASTE FITTINGS

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WASTE FITTING

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2 Claims. (Cl. 299-13)

My present invention relates to improvements in apparatus for securing the disposition of waste from freeze-proof or frost-proof drinking fountains and other varieties of freeze-proof or frost-proof plumbing fittings.

As the descriptive name indicates, freeze-proof or frost-proof drinking fountains and other like plumbing fittings are designed for installation out of doors or in other locations where the temperature at certain seasons goes below the freezing point, and, if proper provisions were not made, the water in the drinking fountain or other fitting would be liable to freeze and break the fitting. The provision heretofore made for preventing the freezing of water in the fountain or fitting consists in bringing the service water supply pipe to the location of the fountain or fitting below the frost line and making a connection with the service pipe below the frost line with a valve, operable from a position at or above the surface of the ground, to let water into the supply tube of the drinking fountain or other fitting. Such a valve must also have provision when closed to permit the water above the valve to drain away.

Several draining valves, as above described, have been devised and, on the whole, function fairly satisfactorily as intended and designed, under usual and normal circumstances, but extraordinary and abnormal circumstances at times develop in connection with the operation of any and all plumbing devices. For instances, if the facilities for supplying the service water under pressure are interrupted in their operation a vacuum may be established in the service water supply pipe which would cause it, if opened, to suck into the system anything present in the fitting or its connections. For this reason there has been almost universally adopted a rule prohibiting an interconnection between a supply and a waste system and for this reason waste from freeze-proof and frost-proof drinking fountains and like fixtures have heretofore generally been discharged into the ground below the frost line and adjacent the location of the fitting. In some cases a section of pipe filled with sand or aggregate has been employed to facilitate the draining away of the waste. In a great many cases such an arrangement has been found to work very satisfactorily. However, if the location does not happen to have good drainage and particularly if a wet season occurs or a great excess of surface water from a sudden hard precipitation occurs, the drainage from the fountain may not take place as intended and desired.

Also, if an undesirable amount of moisture ac-

cumulates the drainage may become invaded with worms or other organisms.

The objects of my present invention are to provide instrumentalities for positively preventing the back flow of water into the valve fitting if and when normal drainage is interrupted. Another object is to provide instrumentalities for preventing the drawing of any water back into the fitting if the pressure in the service water supply becomes subnormal and creates a vacuum or partial vacuum therein. I have also provided facilities for positively and visually disclosing the interruption of drainage upon the first use of the fitting or fixture after the interruption of the drainage has occurred.

I have attained the foregoing objects by means of the structure and arrangement of parts illustrated in the accompanying drawing in which—

Fig. 1 is an elevation of a freeze-proof or frost-proof drinking fountain with connection with service water supply pipe and waste or drain having my improvements installed in such waste or drain and

Fig. 2 is a section to an enlarged scale of the check valves and vent arrangement constituting my invention.

It will be understood that valve 10 for freeze-proof or frost-proof drinking fountains and like fixtures is opened to permit the inflow of water from the service water supply pipe 11 when the fountain is being used and when closed prevents further communication between the service water supply pipe and the valve and at the same time opens a waste port which permits the water standing in the fountain above the valve 10 to drain away so that there will be no water in the fountain above the frost line to freeze if the temperature falls below the freezing point.

I attach immediately to the waste port in the casing of the valve 10, in tandem arrangement, a pair of horizontally disposed, gravity operated, check valves 12-12.

Such valves, as is usual, have a web 13 which depends from the top of the casing opposite the entering port 14 and then runs horizontally as at 15 and then vertically as at 16 to its juncture with the bottom of the valve casing. In the horizontal portion 15 of the web is provided a valve seat 17 cooperating with a gravity operated ball valve 18. Immediately above the location of the valve seat 17 and ball valve 18 is provided an interiorly tapped port 19 closed with a threaded plug 20. The port 19 is for installing the ball valve and for other purposes and the discharge port 21 opens directly from the ball

valve. It will now be seen that water may flow into the entering port 14 up by the valve 18 with only such force as is necessary for displacing the valve, which force is not great, but water cannot flow in an opposite direction as any and all force applied to the valve from above acts to seat such valve and close the port.

To prevent any suction or low pressure which might develop in the valve 10 from drawing waste from beyond the ball valve 18, I perforate the plug 20 and install therein a tube 22 which extends upwardly to the surface of the ground and about half the distance to the discharge opening at the top of the fountain or other fitting or fixture. This tube 22 acts as a vent to relieve any suction which may develop in the valve 10 as long as normal drainage through the waste is operating but, if normal drainage through the waste is clogged, drainage of the column of water in the fountain or other fitting or fixture will come up and overflow the tube 20 which extends to only half the height, or less, of the column of water in the fountain.

At the very first use of the fountain after drainage therefrom is interrupted such interruption will be disclosed by an overflow from the top of the tube 22.

The addition of an extra check valve 15 is for the purpose of preventing the cycle of operations above indicated from being interfered with by the entry of worms or other organisms through the open or discharge end of the waste.

It will now be seen that abnormal conditions such as the development of suction in the valve 35

10 or the interruption of flow through the waste will be positively prevented from causing contamination of the water supply and that an interference with discharge from the waste will be visually indicated upon the first operation of the apparatus after such clogging has occurred.

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

1. In combination with freeze-proof or frost-proof drinking fountains and like plumbing fixtures having a valve for admitting a service water supply to said fixture and adapted to permit the escape of water in the fixture when the service water supply thereto has been closed, a waste valve assembled with the drain port from said valve including a pair of check valves arranged in tandem and a vent pipe extending from the check valve nearest the fitting to the surface of the ground and to a height substantially less than the column of water in the fixture when the valve is closed.

2. In combination with freeze-proof or frost-proof drinking fountains and like plumbing fixtures having a valve for admitting a service water supply to said fixture and adapted to permit the escape of water in the fixture when the service water supply thereto has been closed, a waste conduit assembled with the drain port from said valve including a check valve and a vent tube extending from above the valve and valve seat in said check valve to the surface of the ground and to a height substantially less than the column of water in the fixture when the valve is closed.

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