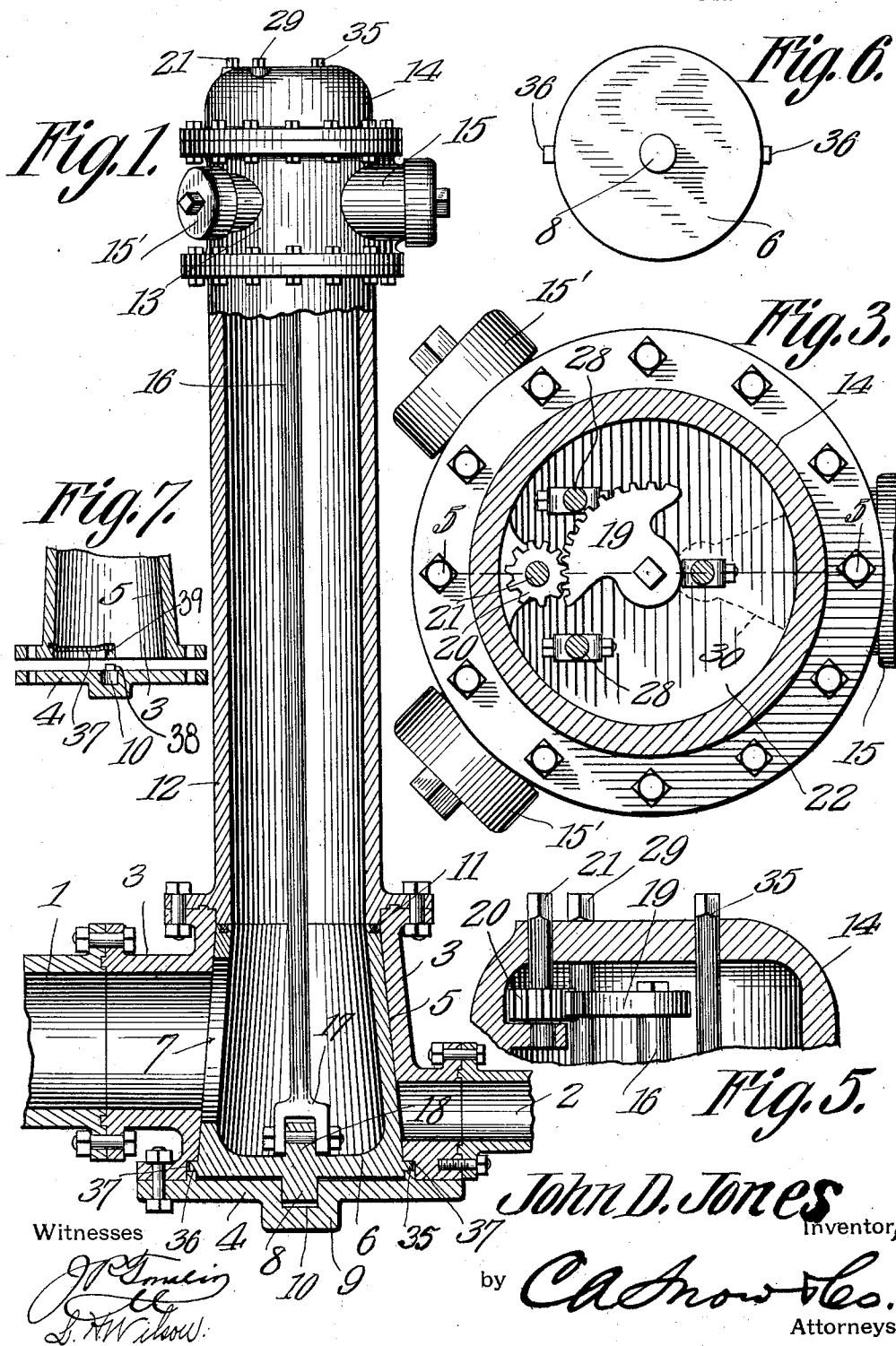


J. D. JONES.
HYDRANT.
APPLICATION FILED FEB. 3, 1912.

1,047,067.

Patented Dec. 10, 1912.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 2.

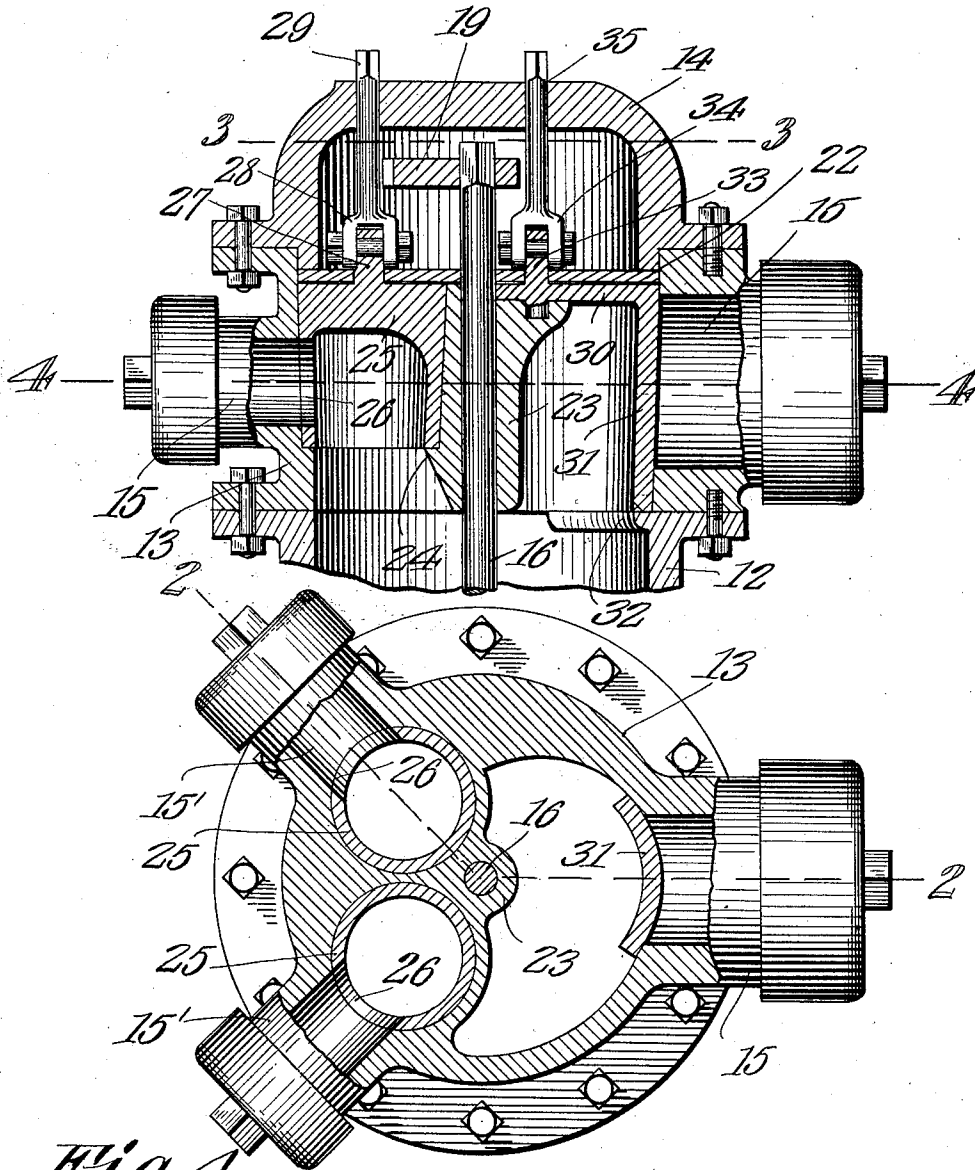


Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

JOHN D. JONES, OF WALLA WALLA, WASHINGTON.

HYDRANT.

1,047,067.

Specification of Letters Patent.

Patented Dec. 10, 1912.

Application filed February 3, 1912. Serial No. 675,165.

To all whom it may concern:

Be it known that I, JOHN D. JONES, a citizen of the United States, residing at Walla Walla, in the county of Walla Walla and State of Washington, have invented a new and useful Hydrant, of which the following is a specification.

The present invention relates to improvements in hydrants, the primary object of the invention being the provision of an anti-freezing type of hydrant provided with a single main valve in its lowermost portion so constructed and arranged as to be operated to lead the water from the main into the main casing of the hydrant and to the various hose outlets thereof, or when in closed position to open the main casing to permit the water remaining in the main casing of the hydrant to be drained and thus prevent any standing of the water.

A further object of the present invention is the provision of a hydrant provided with a plurality of hose connections and with a single engine connection, each of which is provided with its individually controlled valve, whereby either one of the connections may be used separately or all at the same time.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings—Figure 1 is a vertical central sectional view of a hydrant constructed according to and embodying the present invention, the hose coupling end thereof being shown in elevation. Fig. 2 is a section taken on line 2—2 of Fig. 4. Fig. 3 is a section taken on line 3—3 of Fig. 2. Fig. 4 is a section taken on line 4—4 of Fig. 2. Fig. 5 is a section taken on line 5—5 of Fig. 3. Fig. 6 is a bottom plan view of the main valve. Fig. 7 is a sectional view through the lower end of the hydrant taken at right angles to the section of Fig. 1.

Referring to the drawings, the numeral 1 designates the water main and 2 the hydrant drain, which have interposed between them the main valve casing 3 of the hydrant.

The lower end of the main valve casing

is sealed by a removable disk or plate 4 while the walls of the casing as at 5, taper upwardly to provide a receptacle for the hollow truncated conical rotary valve 6 provided with the port 7 in one wall thereof and having its upper end open to the hydrant casing or stand pipe 12.

Connected to and carried concentrically of the bottom of the valve 6 is a journaling stud or pin 8 which is rotatably mounted within the plate 4 within the boss 9 provided with a socket 10. By this means the valve is properly mounted and is insertible through the lower end of the casing 3 and held properly therein by means of the plate 4, pin 8 and the lower end of the stand pipe 12, a soft metal bearing ring 11 being disposed in the upper rim of the valve 6 to produce a non-corrodible bearing surface at such point.

Connected to and carried by the stand pipe or hydrant casing 12 at the upper end thereof, is the valve carrying and hose coupling carrying member 13, which in turn has detachably connected thereto the hydrant cap 14.

Cast integral with the member 13 are the integral fire engine hose coupling 15 and the two ordinary hose couplings 15', each one of which is provided with its individual valve 31, or 25, the detail description of which will appear later on.

In order to operate the main valve 6 the concentric stud 18 is provided and upon it the key 17 of the operating shaft 16 which is disposed concentrically of the casing 12 and is journaled in the sleeve 23 of the member 13, the upper end thereof projecting into the cap 14 and having keyed thereupon the gear segment 19 which is in mesh at all times with the operating gear 20 operable through the key shaft 21 exteriorly of the cap 14. In order to render the operation of the valve 6 slow enough to prevent any damage due to too sudden release or cut off of the water, the key shaft 21 and its gear 20 are so constructed as to require at least four full revolutions to move the shaft 16 from valve closed to open position or vice versa.

The member 13 is sealed at its top by means of the disk 22 which prevents the entrance of any water into the cap 14 and with the sleeve 23, provides a proper mounting for the two hose coupling valves 25 whose lower rims are limited against down-

ward movement by means of the annular shoulder 24, and are each provided with the outlet port 26. Each valve 25 is provided with a concentric stem 27 which projects through the disk 22 within the cap 14, the key 28 for operating the valve being connected to said stem and having its shaft 29 projected exteriorly of the cap 14.

In order to control the outlet of the water through the engine hose coupling 15, the segmental plate 30 carrying the concave valve 31 are provided. The valve 31, whose lower rim rests upon the projection 32, has its stem 33 journaled in the projection 23' of the sleeve 23, while the upper end of said stem is connected to the key 34 of the shaft 35 which projects through the cap 14.

As shown in Figs. 1 and 6, the peripheral face of the valve 6 is provided with the diametrically opposite lugs 36 which co-act with the cam grooves 37 in the adjacent face of the casing 3 when the valve is closed or opened, that is when the port 7 is in or out of registration with the main 1, that the lead gasket 11 will be forced upwardly into tight engagement with the lower end of the casing 12, the taper of the valve 6, also fitting tightly within the casing 3. By this means a water tight connection within the casing 3 and at the junction of the valve with the casing 12, when the valve is open and cut off, is assured.

As shown in Fig. 7, the plate 4 is provided with one lug 38 to each groove 37, each lug 38 being disposed to enter the open end 39 of the groove 37 and thus form a solid portion for the lugs 36 of the valve to ride upon when the valve is moved toward the end 39 of each groove. Without this lug 38, the lugs 36 would not have imparted to them the desired movement when the valve is oscillated.

From the foregoing description taken in connection with the drawings, it is evident that when the port 7 of the valve 6 is in registration with the main 1 that the drain 2 is closed and the water is permitted to enter the stand pipe or hydrant casing 12 into the lower open ends of the valves 25 and into the open portion of the member 13, but as the valves 25 and 31 are normally closed the water is prevented from passing through the hose couplings 15 and 15'.

By operating either one of the stems 29 and 35, the respective valves 25 and 31 are opened to permit the water to flow from the casing 12.

By making the valves in the form illustrated the pressure of the water will normally retain them seated and by reason of the size thereof, the wear thereupon due to the operation of the valves will be reduced to a minimum, thereby producing a highly efficient hydrant for fire and other purposes.

When the valve 6 is operated, to cut off

the main 1 from the casing 3, the port 7 of the valve 6 is moved in the present case, 180° to register with the drain 2, thus permitting the water standing in the casing 12 and valve 6 to be drained from off the casing 12 and valve 6, and rendering the liability to freeze nil.

What is claimed is:

1. A hydrant, having a vertical column, a valve casing mounted at the lower end in communication with the column and provided with a water main connection and drain outlet, a truncated conical valve with a port in one wall thereof, the upper end of said valve being open and of substantially the same diameter as the column, a casing sealing the upper end of the column and provided with a plurality of outlets, a stem having its upper end journaled in said casing and projecting thereabove, its lower end being connected to the valve, an auxiliary valve for each outlet disposed within the sealing casing, a cap connected to the upper end of the sealing casing, and valve stems for operating the auxiliary valves and actuating the stem of the main valve journaled in said cap.

2. A hydrant, having a main casing, a valve casing connected to the lower end thereof with a portion of the lower end of the main casing within the upper end of the valve casing, a hollow truncated conical valve mounted for oscillation within the valve casing and having its upper edge opposed to the lower end of the main casing, means for oscillating the valve, and co-acting means carried by the valve casing and valve to raise the valve and force its upper edge into close contact with the lower end of the main casing when the valve is opened or closed, and to lower the valve when being opened or closed.

3. A hydrant, having a main casing, a valve casing connected to the lower end thereof with a portion of the lower end of the main casing within the upper end of the valve casing, a hollow truncated conical valve mounted for oscillation within the valve casing and having its upper edge opposed to the lower end of the main casing, a soft metal packing carried by the upper edge of the valve, means for oscillating the valve, and co-acting means carried by the valve casing and valve to raise the valve and force its upper edge into close contact with the lower end of the main casing when the valve is opened or closed and to lower the valve when being opened or closed.

4. A hydrant, having a vertical column, a valve casing mounted at the lower end in communication with the column and provided with a water main connection and drain outlet, a cup-shaped valve with a port in one wall thereof, the upper end of said valve being open and of substantially the

same diameter as the column, a casing sealing the upper end of the column and provided with a plurality of outlets, a stem having its upper end journaled in said casing, and projecting thereabove, its lower end being connected to the valve, an auxiliary valve for each outlet disposed within the sealing casing, a cap connected to the upper end of the sealing casing, and valve stems for operating the auxiliary valves and actuating the stem of the main valve journaled in said cap.

5. A hydrant, having a main casing, a valve casing connected to the lower end thereof with a portion of the lower end of the main casing within the upper end of the valve casing, a cup-shaped valve mounted for oscillation within the valve casing and having its upper rim opposed to the lower end of the main casing, means for oscillating the valve, and co-acting means carried by the valve casing and valve to raise the valve and force its upper rim into close contact with the lower end of the main casing when the valve is opened or closed

and to lower the valve when being opened or closed.

6. A hydrant, having a main casing, a valve casing connected to the lower end thereof with a portion of the lower end of the main casing within the upper end of the valve casing, a cup-shaped valve mounted for oscillation within the valve casing and having its upper rim opposed to the lower end of the main casing, a soft metal packing carried by the upper rim of the valve, means for oscillating the valve, and co-acting means carried by the valve casing and valve to raise the valve and force its upper rim into close contact with the lower end of the main casing when the valve is opened or closed and to lower the valve when being opened or closed.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JOHN D. JONES.

Witnesses:

SELINA WILLSON,
ERNEST F. RILEY.