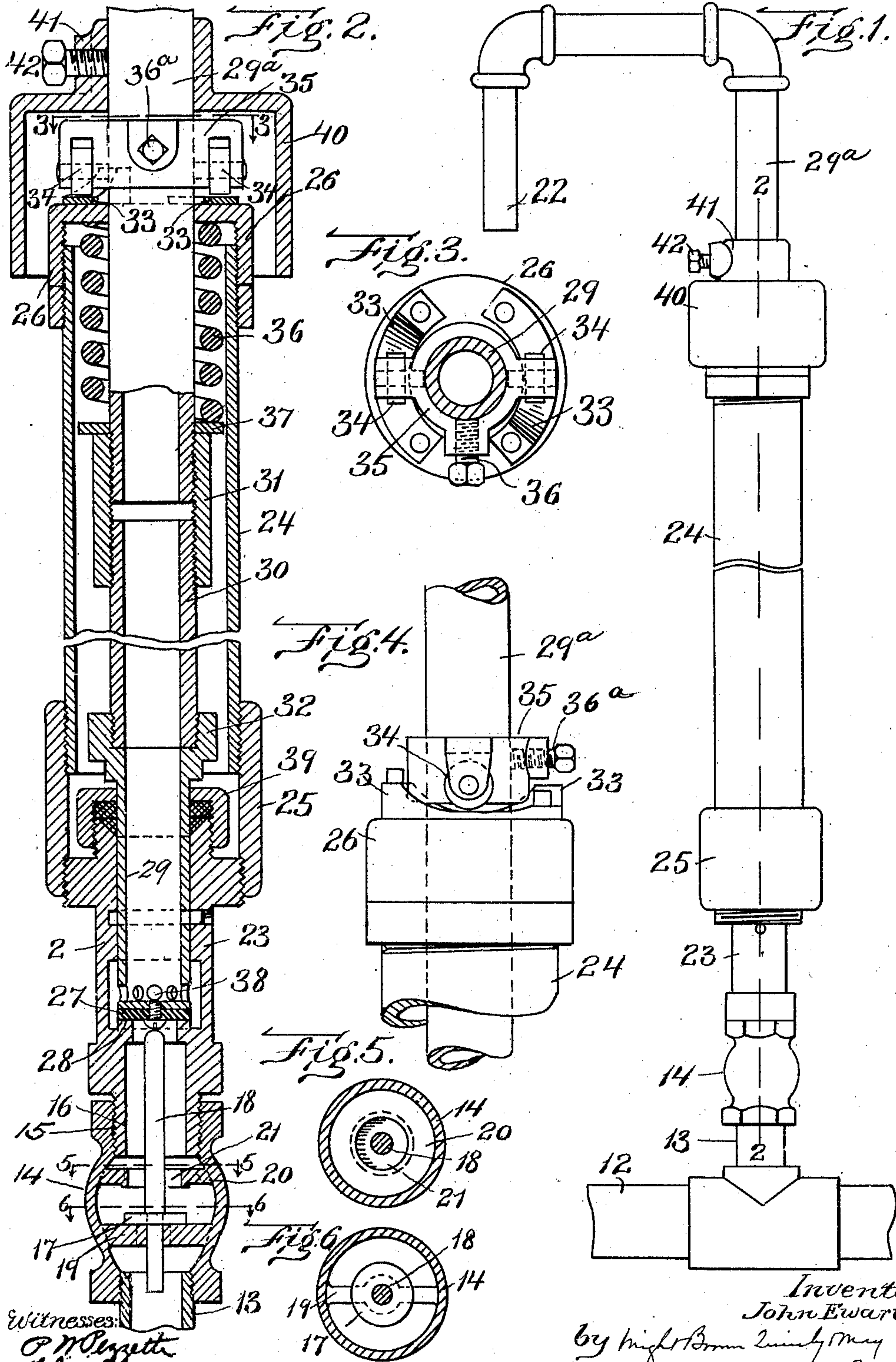


J. EWART.
HYDRANT.

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983,545.

Patented Feb. 7, 1911.



Witnesses:
O. M. Bennett
H. L. Allen

Inventor.
John Ewart
by Hugh Brown Quincy May
Attys.

UNITED STATES PATENT OFFICE.

JOHN EWART, OF ARLINGTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO M. P. McLAUGHLIN, OF WAKEFIELD, MASSACHUSETTS.

HYDRANT.

983,545.

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To all whom it may concern:

Be it known that I, JOHN EWART, of Arlington, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Hydrants, of which the following is a specification.

This invention relates to hydrants which are employed for drawing water from water-pipes or mains at frequent intervals, the invention having especial reference to hydrants such as are used in yards adjacent railway stations for drawing water for car washing and other purposes.

The invention has for its object to provide a hydrant of simple construction and free from liability to be rendered inoperative by freezing of the water contained therein, and adapted to be removed from the water main without releasing water therefrom.

The invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification,—Figure 1 represents a side view of a hydrant embodying my invention engaged with a water-main. Fig. 2 represents a section on line 2—2 of Fig. 1. Fig. 3 represents a section on line 3—3 of Fig. 2. Fig. 4 represents a side view of a portion of the hydrant. Fig. 5 represents a section on line 5—5 of Fig. 2. Fig. 6 represents a section on line 6—6 of Fig. 2.

Similar reference characters indicate the same or similar parts in all the figures.

In the drawings, 12 represents a water-main which is or may be located under ground and below the frost line, and is provided with an outlet branch 13, to which is rigidly connected a valve casing 14, having at one end an internal screw thread 15, adapted to detachably engage an externally threaded nipple 16, on the lower end of the hydrant, the arrangement being such that the hydrant may be disconnected from the main and from the valve casing 14, by disengaging the nipple 16 from the thread 15. The valve casing 14 is provided with a check valve 17 adapted to be closed by water pressure within the main to prevent the escape of water through the branch 13 when the hydrant is removed. Said check valve has a stem 18 which projects above the casing 14 and enters the lower part of the hydrant. When the hydrant is in place a portion of it

bears on the stem 18 and holds the valve 17 in a depressed position against a guide or spider 19. The casing is provided with an internal flange 20 having a liquid passage 21 surrounding the stem 18 and located above the check valve. The under side of the flange 20 constitutes a valve seat against which the valve 17 is forced by water pressure within the main when the hydrant is removed, so that the removal of the hydrant for the purpose of repairing the same, is accompanied by an automatic closure of the passage through which water flows from the main into the hydrant.

As here shown, the hydrant is composed of a sectional casing rigidly secured to the valve casing 14, and a conduit which is rotatable and movable endwise in said casing, the conduit extending from the upper end of the casing, and terminating in a downwardly directed nozzle 22.

The casing is preferably composed of a lower section 23 on which the nipple 16 is formed, an upper section 24 connected by an internally threaded sleeve 25 with the lower section 23, said sections 23 and 24 having external screw threads which engage the internal threads in the sleeve 25, as shown by Fig. 2, and an internally threaded cap 26 engaged with an external thread on the upper end portion of the upper section 24.

The rotatable and longitudinally movable conduit is preferably composed of a lower section 29 having at its lower end a valve 27 adapted to bear on a seat 28 formed on the lower casing section and thus close the hydrant, an upper section 29^a which projects through the cap 26 and is connected as shown by Fig. 1 to the outlet nozzle 22, and an intermediate section 30 connected at one end with the conduit section 29^a by a sleeve 31, and engaged at its lower end with an internally threaded socket 32 formed on the outer end of the lower section 29.

The cap 26 is provided with cams 33 which are formed to constitute tracks for rolls 34 journaled in bearings on a collar 35 which is affixed by a set screw 36^a to the conduit section 29^a. The form of the cams 33 is such that when the conduit portion is turned to the position shown by Figs. 2, 3, and 4, it is pressed downwardly by a spring 36 interposed between the cap 26 and an enlargement 37 on the conduit portion, said enlargement being preferably a washer seated on

the upper end of the coupling sleeve 31. The spring 36 holds the valve 27 on its seat 28, thus closing the hydrant. When the conduit portion of the hydrant is given a partial rotation from the position shown by Figs. 2, 3, and 4, the rolls 34 and the conduit portion of the hydrant are raised by the cams 33 against the pressure of the spring 36, the valve 27 being thus raised from its seat so that liquid flows through the hydrant, the lower conduit section being provided with passages 38 immediately above the valve 27.

It will be seen therefore, that in order to cause the discharge of water from the hydrant, it is only necessary to partially turn the conduit portion, the outlet nozzle 22 and the tubing connecting the same with the conduit section 29^a constituting a handle or lever by which this operation may be effected. When it is desired to close the hydrant the conduit portion is turned in the opposite direction until the spring 36 closes the valve 27.

The casing is provided with a suitable stuffing box 39 which prevents leakage of water around the exterior of the conduit section 29.

40 represents a shield or cover having a hub 41 which is attached by a set screw 42 to the conduit section 29, said shield projecting downwardly and surrounding the cams 33 and collar 35.

The hydrant may be removed from the main, when this is required for any purpose, by unscrewing the nipple or coupling member 16 from the complementary coupling member or internal screw thread 15. When this is done the check valve 17 is closed by liquid pressure in the main, so that there is no leakage of water from the main while the hydrant is removed. The act of replacing the hydrant causes the valve 27 to displace the stem 18 and check valve 17, the latter being thus opened.

The rollers 34 constitute runners movable upon the cams 33, it being obvious that these runners may be non-rotary if desired.

The main 12 and its outlet, including the check valve casing 14, are usually located under ground and below the frost line. The advantage of the check valve, adapted to be automatically closed when the hydrant is removed and opened by the installation of the hydrant, will therefore be readily seen.

I claim:—

1. A hydrant comprising a tubular casing adapted for attachment to a water-main, and having an internal valve seat, a tubular conduit rotatable and movable endwise in said casing and provided with a valve adapted to close on said seat, a spring adapted to move the conduit in one direction to close the valve, cams supported by the casing and runners connected with the conduit and pressed by the spring against said cams, the cams and runners causing an endwise movement of the conduit to open the valve when the conduit is rotated in the casing.

2. A water-main having a valve casing constituting an outlet and provided with a coupling member and an internal valve seat, and a check valve movable against said seat by water pressure in the main and provided with a stem projecting above said coupling member, combined with a hydrant comprising a casing having a complementary coupling member adapted to detachably engage the coupling member on the check valve casing, and to receive the outer end of said valve stem, said hydrant casing having also an internal valve seat, a conduit rotatable and movable endwise in the hydrant casing, said conduit having a valve adapted to simultaneously close on the hydrant valve seat and engage the check valve stem to open the check valve, and means for moving the conduit endwise to open and close the hydrant valve.

In testimony whereof I have affixed my signature, in presence of two witnesses.

JOHN EWART.

Witnesses:

C. F. BROWN,
H. L. ALLEN.