C. L. HOWES.

STREET FIRE HYDRANT.

APPLICATION FILED MAY 1, 1912.

1,145,838.

Patented July 6, 1915.

Fig. 1

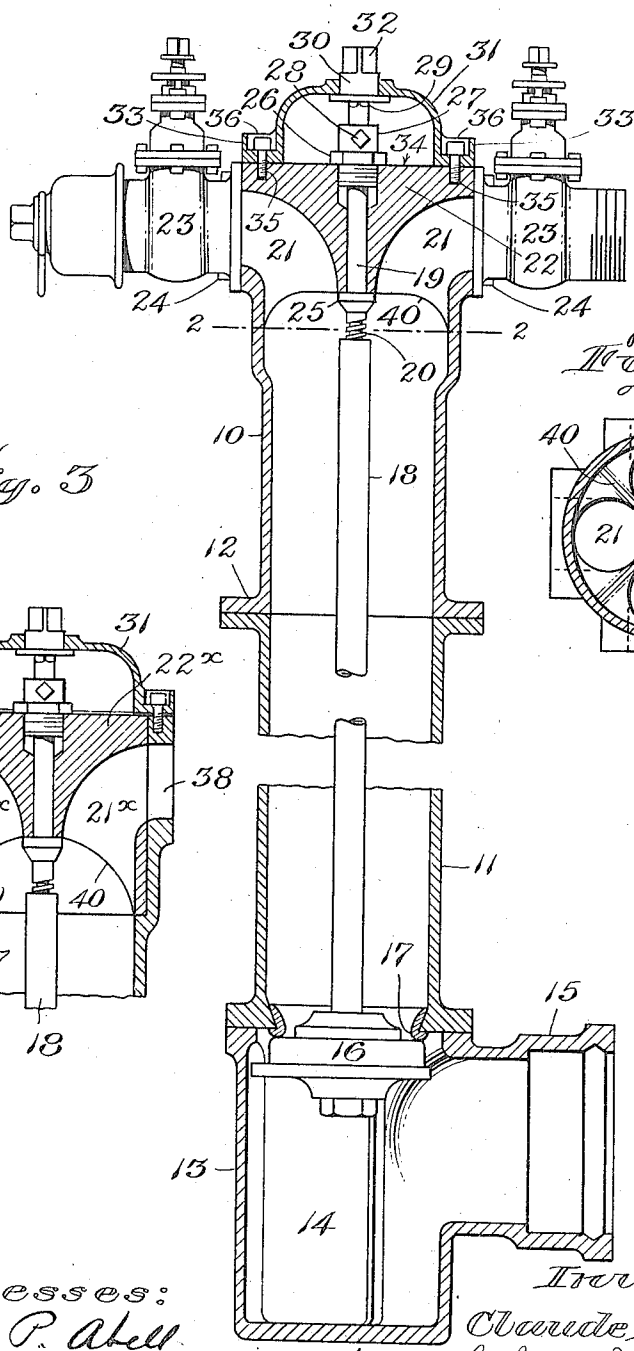


Fig. 2

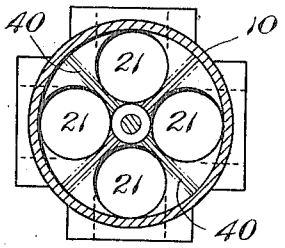


Fig. 3

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CLAUDE L. HOWES, OF BOSTON, MASSACHUSETTS.

STREET FIRE-HYDRANT.

1,145,838. Specification of Letters Patent. Patented July 6, 1915.

Application filed May 1, 1912. Serial No. 694,323.

To all whom it may concern:

Be it known that I, CLAUDE L. HOWES, a citizen of the United States, and resident of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Street Fire-Hydrants, of which the following is a specification.

This invention relates to street fire hydrants, and its chief object is to embody in a hydrant a construction adapted to facilitate the emission of water from the hydrant casing so that there will be less loss of pressure incidental to passing through the hydrant casing than there is in hydrants which have hitherto been devised.

Of the accompanying drawings which illustrate the invention,—Figure 1 represents a vertical section through a hydrant partly broken away and shortened. Fig. 2 represents a horizontal section viewed upwardly from the plane indicated by line 2—2 of Fig. 1. Fig. 3 is a vertical section of a modification.

The same reference characters indicate the same parts wherever they occur.

The barrel or casing of the hydrant is made in two sections, in accordance with the usual practice, said sections comprising an upper or exposed section 10, and the lower or concealed section 11, the upper section being disposed above the ground level, and the lower section being below the ground level. The meeting ends of the two sections are secured together at 12. A pot 13 below the section 11 is formed to provide a chamber 14 for the main valve 16 and to provide an inlet sleeve or hub 15 to receive a water main (not shown). The seat for the main valve is indicated at 17.

The valve stem comprises two coöperative screw-threaded sections indicated respectively at 18 and 19 of which the former is tubular and is internally threaded for connection with the screw-threaded portion 20 of the section 19. The section 19 is journaled in the head 22 of the barrel and may be rotated but is prevented from moving vertically.

The hydrant barrel is provided with one or more, in the present instance a plurality of, outlet passages into whose inner ends water flows upwardly. These passages are curved so that their outer ends emit water horizontally, the walls of the outlet passages being curved in such manner as to gradually change the direction of the water, and being graduated in form to divide the main stream into smaller streams and to gradually change the cross-sectional shape of the latter without subjecting the water to any abutment which will materially reduce its velocity or progress. The outlet passages are indicated at 21 and they are formed in the head 22 at the upper end of the barrel. Outlet valves 23 are secured by bolts 24 to the barrel. The curvature of the walls of the outlet passages 21 is such that, when the outlet valves are open, the water will issue horizontally from the hydrant casing without being churned or otherwise seriously impeded. The inner ends 40 of the webs or division walls which separate the outlet passages 21 are made as sharp as possible in order to cleave the water without offering any undue resistance to the same.

As shown by Fig. 2, the sharp edges 40 which cleave the water to form the separate streams are disposed radially with reference to the axis of the barrel. The water, upon being divided by these edges, first takes the form of sectoral streams, and while the direction of the streams is being gradually changed, the shape of the streams is also gradually changed to circular. The gradual changing of the surfaces of the passageways 21, whereby the shape of the streams is gradually changed, offers the least possible resistance to the flow of the water.

The head 22 is provided with a stuffing box, the gland of which is indicated at 26, to prevent leakage of water through the opening occupied by the section 19 of the valve stem. A collar 25 on the section 19 bears against the under surface of the head 22 to resist upward pressure upon the valve stem. A collar 27, secured on the section 19 by a set screw 28, rests upon the gland 26. A false nut 30 is journaled in a cover or cap 31 and has an angular socket (not shown) coacting with the angular end 29 of the section 19. This nut has exterior angular faces 32 adapted to be engaged by a wrench for operating the main valve. The rim of the cap or cover 31 has a flange 33 which is seated upon the upper surface 34 of the head 22, and is attached by bolts 35 whose heads are countersunk in sockets 36 formed in the flange 33.

In the modification shown by Fig. 3, the head comprises a removable plug 22× in

which the waterways 21× are formed substantially as hereinbefore described. The plug rests upon a shoulder 37 formed on the section 10, and is held in the latter by the cap 31. A gasket 39 is arranged to prevent leakage through the annular crevice between the plug 22× and section 10. The section 10 has outlet ports 38 which register with the delivery ends of the waterways 21×.

I claim:—

A hydrant comprising a vertically disposed barrel through which the water flows upwardly, said barrel having a head provided with a plurality of separate passageways for water, the delivery ends of said passageways being circular and radially disposed to discharge the water horizontally, the inner ends of said passageways being sectoral in cross section and vertically disposed and separated by radial substantially sharp edges, the surfaces of said passageways being curved to gradually change the direction of the streams formed thereby, and being graduated in shape to change the shape of the several streams from sectoral to circular.

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

CLAUDE L. HOWES.

Witnesses:

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