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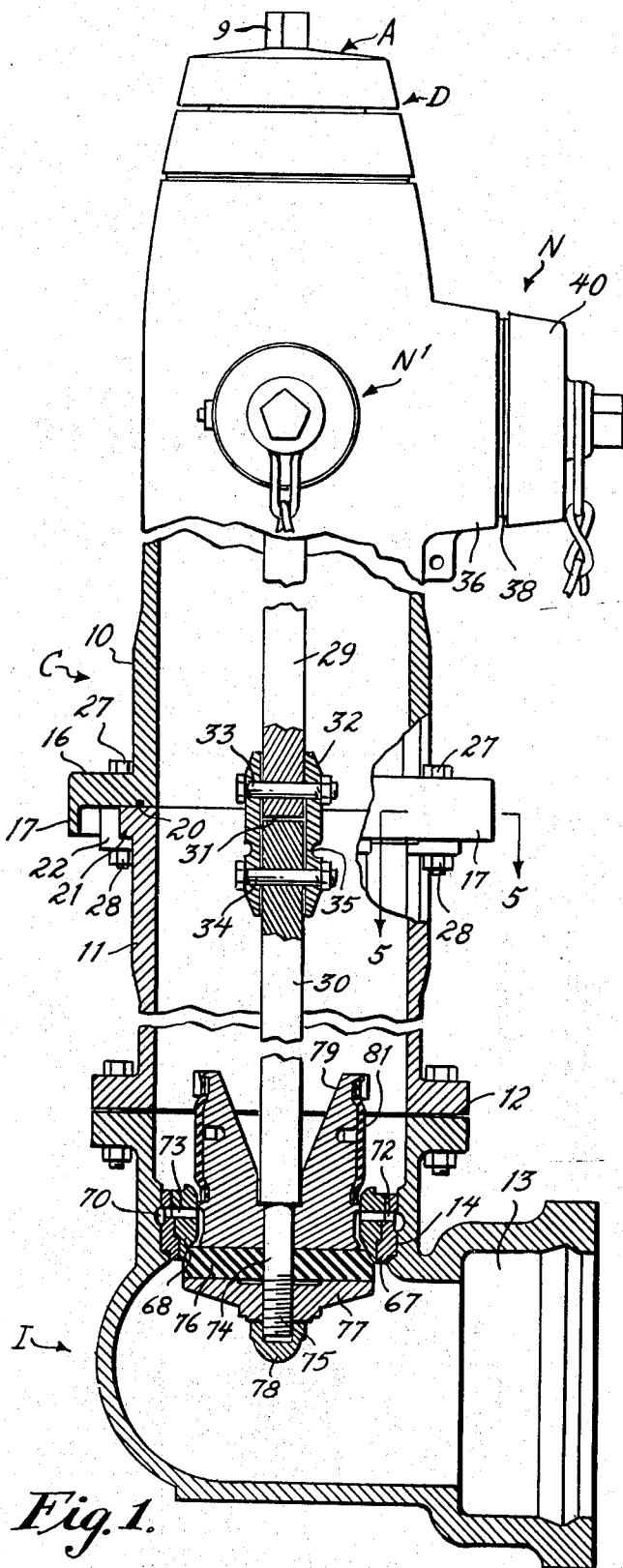
J. T. DUNTON

3,534,941

FIRE HYDRANT

Original Filed Jan. 18, 1965

2 Sheets-Sheet 1



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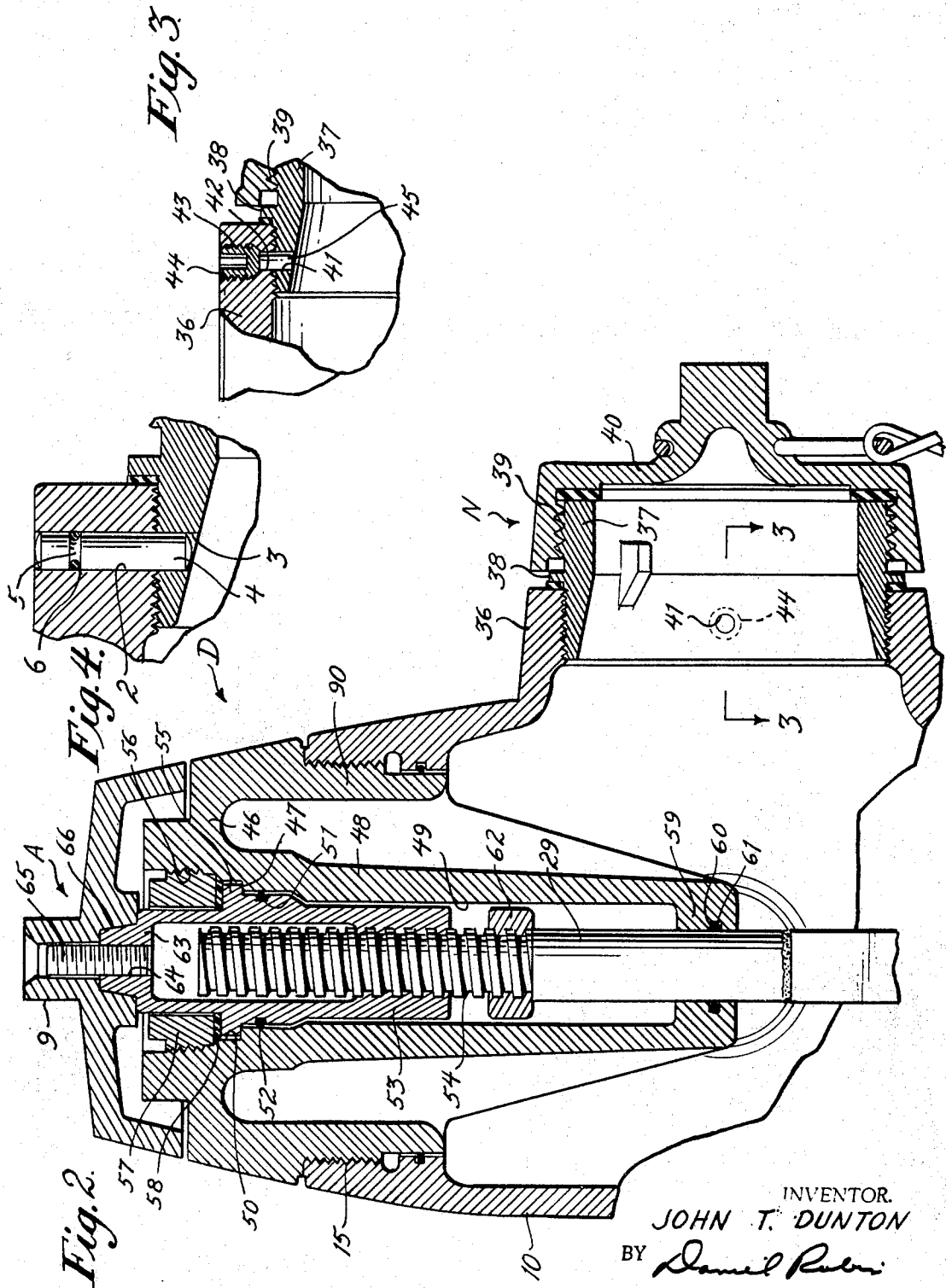
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1

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FIRE HYDRANT

John T. Dunton, Bradford, Pa., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Original application Jan. 18, 1965, Ser. No. 421,580.
Divided and this application Sept. 20, 1967, Ser. No. 678,137

Int. Cl. F16k

U.S. Cl. 251—360

2 Claims

ABSTRACT OF THE DISCLOSURE

An improved fire hydrant nozzle construction. The forwardly extending hydrant nipple threadedly supports an outwardly extending nozzle to which it is interlocked by means of a force fit cross pin extending through adjacent walls of each.

This is a division of application Ser. No. 421,580, filed Jan. 18, 1965, now abandoned.

The present invention relates to a fire hydrant and is concerned primarily with certain improvements which result in improved utility of such hydrants.

In accordance with conventional practice the upper end of a fire hydrant casing is provided with a pair of discharge nozzles in right angular relation. Each of these nozzles consists essentially of a short sleeve having a central abutment flange. On the inner side of this flange, the sleeve is threaded and screwed into an internally threaded nipple on the casing. On the outer side of the flange, the nozzle is provided with threads which receive either a cap during a period of non-usage or a hose connection when the hydrant is being used. An important object of the present invention is to provide a new and improved means for locking the discharge nozzle in the nipple aforesaid. To accomplish this, the nipple and nozzle are drilled after assembly to form aligned openings which receive a lock pin. When it is desired to remove the nozzle all that is required is to drive the pin inwardly and unscrew the nozzle from the nipple.

For a full and more complete understanding of the invention reference may be had to the following description and accompanying drawings, wherein:

FIG. 1 is a side view partly in section and partly in elevation and with parts of the casing broken away, of a fire hydrant embodying the improvements of this invention.

FIG. 2 is a sectional view on an enlarged scale of the upper end of the hydrant.

FIG. 3 is a detail sectional view of the lock for the nozzle being taken about on the plane represented by the line 3—3 of FIG. 2, and

FIG. 4 is a section view similar to FIG. 3 of an alternative form of locking pin for the nozzle.

A fire hydrant embodying the improvement of this invention comprises a casing which is referred to in its entirety by the reference character C. This casing C comprises an upper casing part 10 and a lower casing part 11. The parts are secured together by a frangible connection. Secured to the lower end of the lower casing part 11 by a bolted flange connection 12 is an intake shoe I. The shoe I includes an intake opening at 13 which is connected to a water main and has a cylindrical bore 14 which receives a valve seat.

The upper casing part 10 carries a plurality of discharge nozzles, each of which is referred to in its entirety by the reference characters N and N' which are in right angular relation. Secured to the upper end of the upper casing part 10 by a threaded connection 15 is a dome D which in turn carries a dust cap A.

2

Integrally formed with the upper casing part 10 and at the lower end thereof is a comparatively wide outwardly extending flange 16 which in turn carries a depending skirt 17. The flange 16 is formed with a series of bolt holes 18. The lower end face of the casing part 10 has an annular groove 19 which receives an O-ring packing member 20 that engages the upper end face of the lower casing part 11.

The upper end of the lower casing part 11 is formed with a comparatively narrow outwardly extending flange 21 that is spaced from the skirt 17. A plurality of lugs 22 are received in this space, the number of lugs corresponding to the number of bolt holes 18.

A valve stem comprises an upper stem part 29 and a lower stem part 30, both of non-circular cross section such as the square shape illustrated. These stem parts have confronting end faces at 31. A connecting sleeve 32 is connected to the upper stem part 29 by a bolt 33 and the lower stem part 30 by a bolt 34. The sleeve 32 has a bore corresponding in cross section to that of the stem. This sleeve 32 is weakened by an annular groove 35 which will be noted is offset from the confronting end faces 31.

Except for the difference in diametrical dimension, the nozzles N and N' are substantially duplicates and only one of them is here described in detail as that is believed to be sufficient for the purposes of this specification.

Referring now more particularly to FIGS. 2 and 3, the upper casing part 10 is shown as formed with an outwardly extending nipple 36 which is internally threaded. A sleeve 37 has a central abutment flange 38 and on the inner side of the latter is externally threaded and is screwed into the nipple 36 with a gasket interposed between the two. On the outside of the flange 38, the sleeve 37 is provided with coarse threads 39 onto which is screwed a cap 40 as shown in the drawing or a hose connection when the cap is removed.

When the sleeve 37 is located in sealing engagement with the nipple by the gasket, a passage 41 is drilled providing an aperture 42 in the nipple 36 with the aperture being counterbored at 43 and the counterbore receiving an externally threaded plug 44. A lock pin 45 is driven into the apertures 41 and 42 locking the sleeve 37 in the nipple 36. The plug 44 is then screwed into the internally threaded aperture 43 providing sealed closure of the aperture 42 and counterbore 43. However, when occasion arises, the plug 44 can be removed and lock pin 45 may be removed from its locking position by simply driving it inwardly whereupon the sleeve 37 may be unscrewed.

An alternative form of locking device for securing the sleeve 37 in the nipple 36 is shown in FIG. 4. These elements are formed with aligned apertures 2 and 3 and a lock pin 4 is driven thereinto with a tight fit. The pin 4 is formed with a groove 5 which receives an O-ring 6. The O-ring 6 serves to provide a seal. When removal of the sleeve is desired all that is necessary is to drive the pin 4 inwardly.

The dome or bonnet D comprises a skirt 90 that is externally threaded with the threads being received in internal threads formed in the upper casing part 10 to achieve the threaded connection 15.

Integrally formed with the skirt 90 is a pressure plate 46 formed with an annular shoulder 47. Depending from this shoulder 47 is a sleeve 48 providing a bore 49 and a counterbore 50 separated by the shoulder 47. A stem actuator 53 is screwed onto the upper end of the valve stem part 29 which is threaded such as indicated at 54. The stem actuator 53 is formed with an annular groove 51 which receives an O-ring 52. The O-ring 52 provides an effective seal between the stem actuator and pressure plate sleeve 48.

3

The stem actuator 53 is formed with an outwardly extending flange 55 which engages the shoulder 47. The dome or bonnet is formed with a threaded opening at 56 which receives a retaining nut 57. A Teflon thrust bearing 58 is interposed between the nut 57 and the flange 55. This Teflon thrust bearing is self-lubricating and serves to reduce friction created by upward thrust of the stem actuator.

The top plate 63 of the actuator 53 is provided with non-circular surfaces at 66 which in turn fit the corresponding surfaces on the dust cap A. The latter is formed with wrench engaging surfaces 9. Thus, the dust cap may be rotated to rotate the actuator.

The operating valve includes a shoe I in a threaded bore 14 and the bore 14 of the shoe I is threaded. Screwed into this threaded bore is a seat carrying ring 67 which is also internally threaded. Screwed into the latter is a valve seat ring 68 formed with a conical valve seat 69.

The intake shoe I is formed with an inwardly opening annular groove 70 which communicates with the exterior of the intake I through the medium of a drainage port 8. The seat carriers 67 and 68 are formed with aligned ports 72 and 73 which communicate with the groove 70. Thus, when the inner end of the port 73 is opened, communication between the interior of the casing and exterior of the intake shoe is provided and any water retained in the casing will be drained off through ports 72 and 73, groove 70, and drainage port 8.

The lower valve stem part 30 is reduced at 74 and the lower end of this reduced portion is threaded at 75. Mounted on this reduced stem part 74 is a main valve 76 which is held in position by a retaining plate 77 and lock nut 78 with a gasket interposed between the latter to prevent corrosion of threads 75.

While preferred specific embodiments of the invention are hereinbefore set forth, it is to be clearly understood that the invention is not to be limited to the exact constructions, mechanisms, and devices illustrated and de-

4

scribed because various modifications of these details may be provided in putting the invention into practice.

What is claimed is:

1. In a fire hydrant, a casing having an outwardly extending internally threaded nipple, a nozzle having an externally threaded end portion screwed into said nipple and formed with a radially extending aperture, said nipple having an aperture opening into the internal threads thereof and aligned with said aperture in said nozzle, a lock pin snugly fitted in said aligned apertures, said nipple aperture being counterbored at the outer end, and a plug screwed into said counterbore providing closure for the apertures.

2. In a fire hydrant, a casing having an outwardly extending internally threaded nipple, a nozzle having an externally threaded end portion screwed into said nipple and formed with a radially extending aperture, said nipple having an aperture opening into the internal threads thereof and aligned with said aperture in said nozzle, a lock pin snugly fitted in said aligned apertures, the lock pin having a groove, and an O-ring in said groove providing closure of the said apertures while at the same time locking said nipple to said casing.

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