March 3, 1936. H. M. LOFTON 2,032,881

FIRE HYDRANT

Filed Nov. 11, 1931 2 Sheets-Sheet 1

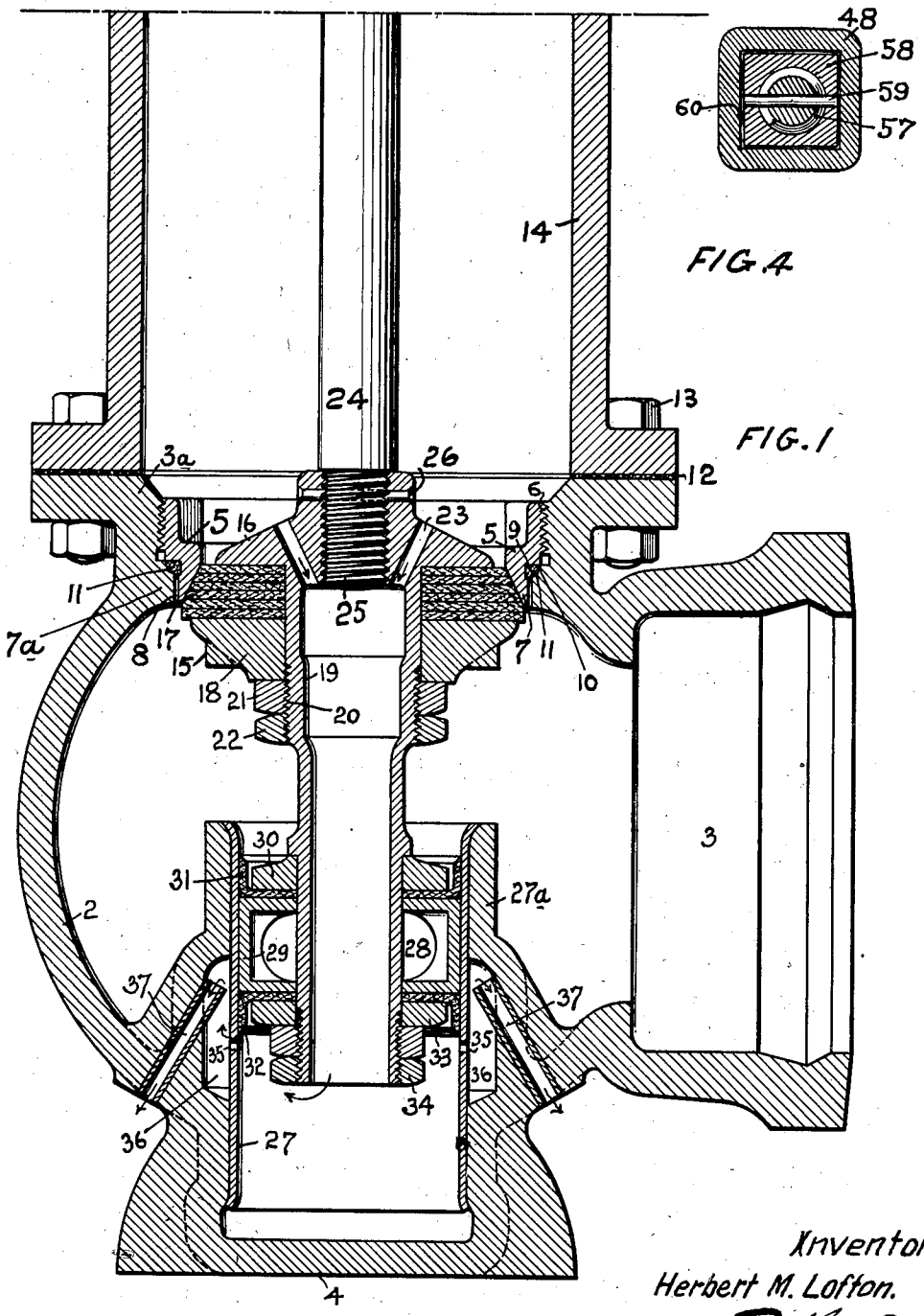


FIG. 4

FIG. 1

Inventor.
Herbert M. Lofton.
By
Attorney.

March 3, 1936. H. M. LOFTON 2,032,881

FIRE HYDRANT

Filed Nov. 11, 1931 2 Sheets-Sheet 2

FIG. 2

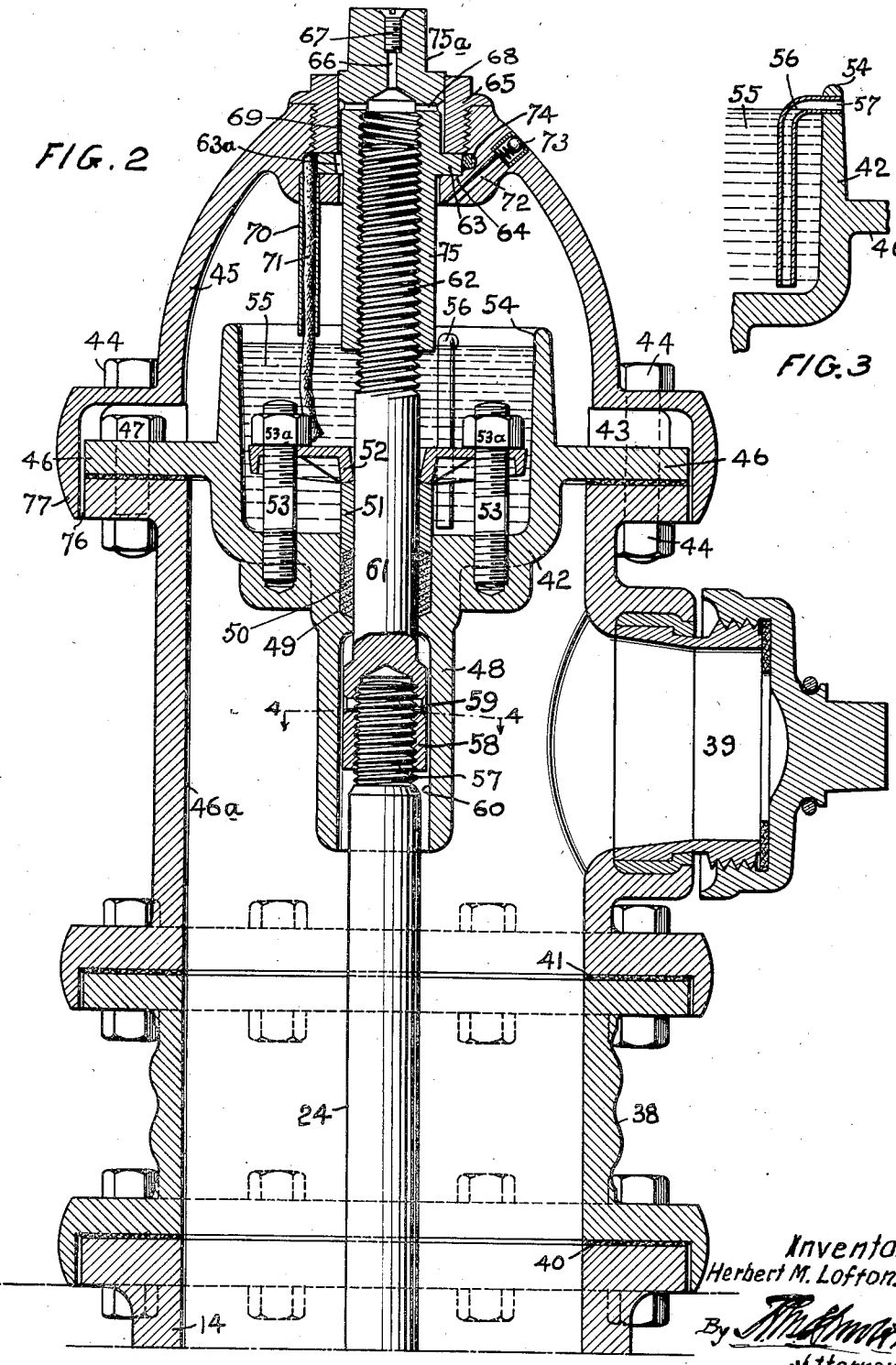


FIG. 3

Inventor
Herbert M. Lofton.
By
Attorney.

Patented Mar. 3, 1936 2,032,881

UNITED STATES PATENT OFFICE

2,032,881

FIRE HYDRANT

Herbert M. Lofton, Chattanooga, Tenn.

Application November 11, 1931, Serial No. 574,284

18 Claims. (Cl. 137—13)

My present invention relates to fire hydrants and is an improvement upon the construction of hydrant for which Letters Patent No. 1,717,392 was issued to me on June 18, 1929, and also upon the construction illustrated in an application Serial No. 561,338 filed by me on September 5, 1931; and more particularly to improvements which relate to the upper structure of the hydrant including means for holding the valve stem against rotation during the opening and closing movements of the main valve, and the means for imparting a reciprocating motion to the said valve stem.

My invention also has special reference to the thorough lubrication of the mechanism employed for imparting the reciprocating movements to the valve stem, whereby the same is maintained in a lubricated condition, and hence easy of operation.

My invention also embodies certain features of construction in the stock or barrel of the hydrant body which extends above the ground and embodying a structure of less resistance to fracture than the main barrel or casing so that in the event of the upper part of the fire hydrant being forcibly struck by a truck or because of impact, the said weakened portion would become broken and limit the damage to a small easily repaired portion of the barrel.

According to the invention, the hydrant comprises stock and bonnet parts combined with a valve to control the flow of water through the stock, a reciprocating shaft for operating the valve, means arranged in the upper part of the hydrant for guiding the shaft and preventing it from rotating, a transverse member providing an oil reservoir in the upper part of the stock and surrounding the upper portion of the shaft for lubricating said shaft where it passes through the oil reservoir, means for fastening the oil reservoir between the stock and bonnet parts, an oil tight packing interposed between the reservoir and the means for preventing rotation of the valve shaft, a rotatable nut arranged at the top of the hydrant for reciprocating the valve shaft, said nut having an annular flange seated in the upper part of the hydrant structure above the oil reservoir, and means for supplying oil upward by capillary action to the said annular flange.

Referring to the drawings: Fig. 1 is a vertical sectional view of the lower or valve portion of the fire hydrant, more particularly illustrating the main valve, the means for draining the stock or barrel of the hydrant, and also showing the means for centralizing and guiding the main valve axially; Fig. 2 is a vertical section through the upper portion of the hydrant including the special construction of the stock or barrel, the means for imparting vertical reciprocation of the valve stem, and the oiling devices; Fig. 3 is a vertical section illustrating the overflow means in connection with the oil reservoir; and Fig. 4 is a transverse section taken on line 4—4 of Fig. 2.

2 is the body of the shoe and is made flat on the bottom portion 4 thereof. The shoe is provided with a lateral tubular flange portion 3 adapted for making connection with the supply main in the street. The upper portion 3*a* of the shoe is flanged and bolted to the flanged lower end of the stock 14 by bolts 13 and with a packing 12 interposed between the flanges. The upper opening in the shoe is screw threaded as at 6 into which the seat ring 5 is screwed, and said seat ring has its lower conical seating portion 7 extended downward below the screw threaded portion and formed with a slight clearance 8 from the vertical wall 7*a*. At the upper end of the juncture 8 of the parts 7 and 7*a*, there is provided an annular groove extending part-way into the seat ring and part-way into the flanged end 3*a* of the shoe, the grooved portion 9 extending into the seat ring on three sides, whereas the groove 10 extending into the flanged end of the shoe has its grooved portion formed of two annular surfaces at an angle to each other. When the seat ring 5 is screwed down into the flanged end 3*a* of the shoe, the gasket 11 normally of rectangular or square shape is caused to assume a different shape by co-action between the walls of the annular groove. It is manifest that the inclined walls 10 formed in the upper flanged end 3*a* of the shoe provide a wedge action upon the lead or other gasket which causes it to be pressed tightly into the recess 9 in the seat ring, and in being so pressed the horizontal shoulder in the bottom of the groove forms an interlock with the gasket so that when the seat ring is unscrewed upward and removed, it carries with it the said gasket 11. It will be seen that as this gasket fits tightly into the undercut part of the seat ring portion, it fits the grooved portion 10 of the shoe in such a manner as to permit immediate separation therefrom upon screwing the seat ring upward for removal. In other words, the gasket becomes firmly attached to the seat ring and readily detached from the upper flanged portion 3*a* of the shoe. From Fig. 1, it will also be seen that the greatest diameter of the gasket in the seat ring 5 is equal to or less than the diameter

of the threads 6 of the flanged portion 3a of the shoe, so that the gasket is in no way injured by removal and re-insertion of the seat ring.

15 is the main valve and comprises an upper disk-like body 16 having formed integral therewith a downwardly extending tubular shaft portion 19, a series of disks of leather or other suitable material forming a tapered packing adapted in shape to fit the beveled seat 7 of the seat ring 5, and a bottom annular plate 18 fitting loosely over the tubular shaft 19 and clamped in position thereon by means of nut 21 and lock nut 22 screwed upon the threaded portion 20 of the tubular shaft. In this manner, the leather packing of the main valve may be tightly clamped together between the two metal parts 16 and 18. The operating shaft or valve rod 24 has a screw threaded end 25 which is screwed into the upper disk-like body 16 of the main valve and is pinned therein by a transverse pin 26 so that said shaft and valve piece move as a unit and without rotation.

23 are ports or passages from the space at the bottom of the stock 14 and downward and into the hollow passage portion of the tubular shaft 19. The main valve and its operating stem or shaft 24 is permitted to have vertical movement but prevented from being rotated. The interior of the shoe and the bottom portion thereof is provided with a cylindrical casting 27a which is internally fitted with a bronze bushing 27 of tubular like form and preferably with outwardly curved upper and lower ends as shown. This tubular bushing 27 is provided about half way up with lateral drainage apertures 35, said apertures opening into an annular drainage chamber 35 formed between the casting 27a and the annular bushing, the said annular drainage space 36 extending considerably above the aperture 35 and having a drainage tubular portion 37 whose upper end opens into the upper portion of the annular space 36 and providing an outlet from said space at a considerable distance above the drainage aperture 35.

Surrounding the tubular shaft 19 and movable with it is a fluid tight piston 28, said piston forming an annular spacing circular body having clamped between said body and a washer plate 30 a cup shaped leather packing 31. Similarly, at the bottom of the piston spacing circular body is arranged a downwardly extending leather cup packing 32 which is clamped in position by the clamping plate 33 and nuts 34 screwed upon the lower end of the tubular shaft 19. The cylindrical bushing 27 is axially in perfect alinement with the axis of the main valve so that it acts to positively guide the main valve and its attached piston axially of the valve seat.

The drainage water from the stock 14 of the hydrant flows by gravity through the orifices 23 in the upper annular body part 16 of the main valve, said water flowing downward through the tubular shaft 19 to a level below the piston 28 therein. The level of this drainage water rises in the said cylinder 27 and passes outwardly through the lateral port 35 therein and thence through the annular space 36 and into the upper open end of the tubular drain portions 37, the upper end thereof being at or somewhat higher than the lower cup shaped leather packing 32 of the piston 28. In this manner, the leather packing is maintained submerged in the waste water from the hydrant, and if, for any reason, the hydrant was out of use for a long period, the water in the lower part of the cylinder 27 will be retained at a level which will be above the said packing 32 and consequently keep it in a moist and pliable condition. It is also evident that if the hydrant is in connection with a source of water supply, the entire shoe would be filled and water would have access to the upper cup shaped packing 31, and in that manner maintain the same in a pliable and workable condition.

The piston 28 being positively connected with the main valve 15 and spaced therefrom, said parts are each adapted to be subjected to the pressure of the water supply entering the shoe, said pressure operating upon the underside of the main valve 15 and upon the upper side of the piston 28. By reason of this construction, the main valve is substantially counter-balanced by the piston 28 and greatly reduces the amount of effort required to open the main valve. The main valve is somewhat larger in diameter than the diameter of the piston 28 of the counter-balance and waste valve. While it is desirable to have some excess pressure to normally hold the main valve closed upon its seat, it is equally desirable that the excess pressure be reduced to an amount only sufficient to insure a tight valve and, at the same time, to be limited to such an extent that the counter-balance effect operates to reduce the power necessary to open the valve to a minimum. The counter-balance feature of my improvements, while being of the same nature as shown in my patent hereinbefore referred to, in association with other features of improvements, is important and insures desirable results over and above what is illustrated in my said previous patent. While the valve may be opened to any degree desired, its total movement is limited by the contacting between the under part of the annular plate 18 of the main valve and the upper rim of the cylindrical casting 27a and bushing 27 thereof.

Aside from the functions of the parts illustrated in Fig. 1 acting as a means for counter-balancing the main valve 15 to facilitate its opening and closing movement, I have arranged for holding the main valve concentric with the seat ring 5 by employing the balanced valve cylinder 27 precisely in line with the valve seat, this being accomplished by means of the spacer or piston 28 fitting fairly within the said balanced valve cylinder 27 through the connections 19 between said piston or spacer and the main valve itself. The advantages of this arrangement are highly important for the reason that it removes all cross obstructions from any point above the valve opening, thereby permitting unimpeded flow of water when the main valve is opened. The drain is entirely automatic and requires no synchronized or screw adjustment of any kind and is entirely proof against derangement for the reason that when the main valve is closed the lower cupped leather 32 rises sufficiently above the hole 35 in the bronze casing or cylinder 27, thereby permitting the water to flow out from the point above the main valve of the hydrant through the openings 35, as previously pointed out.

Referring more particularly to Figs. 2 and 3, illustrating the upper portion of the hydrant, and especially those portions above the ground level, the following features may be enumerated. At the upper end of the stock 14 there is fitted an annular section 38 of relatively short vertical lengths and of a more or less weak condition relatively to the strength of the stock 14 and the body part 46a immediately above it, the purpose and object of which is to provide a weakened part of less strength than the stock or body portion so that in case of severe impact by collision of a

heavy truck or car, the said weakened portion will be ruptured before any damage would be done to the stock, hose nozzle or operating means at the top of the hydrant. Furthermore, this weakened section **38** may be formed with a corrugated surface providing annular weakened portions which also may embody certain ornamental features. I deem it immaterial whether the corrugations are formed upon the outer surface or upon the inner surface, since the results would be the same.

Immediately above the weakened section **38** of the stock and the body portion **46***a* before referred to, there is provided a transverse plate **46** bolted to the upper portion of the body part **46***a* by bolts **47** and in a water tight manner, said plate having its central portion provided with a deep cup **42** constituting an oil reservoir and said cup extending centrally downward at **48** and provided within its lower part with a vertical aperture of polygonal cross section, as indicated at **60** in Fig. 4. **61** is an operating stub-shaft extending vertically through a stuffing box **49** having packing **50** therein. The stub-shaft has its lower end formed of polygonal cross section, as shown at **58** in Fig. 4, and loosely fits within the polygonal aperture **60** of the rigid portion **48**. In this manner, the stub-shaft may be adjusted up or down but cannot rotate. Screwed into the bottom portion **58** of the stub-shaft **61** is the screw threaded upper end **57** of the valve rod **24**, the said parts **57** and **58** being secured against relative rotation by means of a transverse pin or rivet **59**. Any other suitable means may be employed for permitting the valve rod to be held against rotation during its vertical reciprocation. Any suitable packing means may be employed about the stub-shaft **61**, but that shown is well adapted to its purpose. This packing comprises the asbestos or other suitable packing **50** held down in a packed condition about the shaft by an annular gland portion **51** slidably surrounding the shaft. The gland **51** is, in turn, forced downward into clamping position by means of an annular flange portion **52** surrounding the stub-shaft and being forcibly adjusted toward the gland by means of studs **53** provided with adjustable nuts **53***a*. In this manner, oil **55** within the cup **42** may be received to a level close to the upper rim **54** of the cup, this level being assured by an overflow pipe **56** extending upwardly from near the bottom of the cup to an outward discharge **57***a* through the cup immediately below the rim **54** thereof, as clearly indicated in Fig. 3. There is shown in Fig. 2 a lateral nozzle **39**, the same opening to the interior of the body portion **46***a* below the transverse diaphragm plate **46** and in direct communication with the stock or barrel portion **14**. There may be more than one such nozzle and the same are provided with caps of the usual construction.

Arranged above the transverse diaphragm plate **46** and extending above the oil reservoir **42** is a bonnet **45** which is clamped in position above the body portion **46***a* by means of clamping bolts **44** which extend through the flanged portion of the bonnet and the flanged portions of the transverse diaphragm plate **46** and upper flange of the body **46***a*. The bonnet preferably rests upon hub or spacing portions **43** extending upwardly from the face of the transverse plate portion **46**. **75** is an operating nut loosely screwed upon the threaded portion **62** at the upper end of the stub-shaft **61**, and this nut is provided with a polygonal upper end **75***a* upon which an operating wrench may be applied for rotating it. This nut is, furthermore, provided with an annular flange **63** at its upper portion, which flange rests upon the upper surface **64** of a socket portion and is held in such position by a threaded bushing **65** which is screwed down into the upper end of the bonnet. In this manner, the rotation of the nut **75** will cause the stub-shaft **61** (together with its valve stem **24**) to be raised or lowered while at the same time being held against rotation. **72** is an oil port arranged in the upper portion of the bonnet and inclined downward so that oil squirted through said port will be delivered into the reservoir **42**, and said port is normally closed by a spring actuated valve device **73** which permits the entrance of the oil supplying means while normally holding the said port in sealed condition against the entrance of dirt.

Arranged about the annular flange **63** of the revolving nut **75** is a wick-like material **74**, said wick extending downwardly at **71** through a guide tube **70** secured at its upper end in the bonnet and so positioned that the wick may extend downwardly and into the lubricating oil **55** within the reservoir **42**. By means of this wick the oil will rise by capillary action and will thus supply lubricant to the revolving portions of the nut and any excess will return to the reservoir about the outer surface of the nut **75**. The extreme upper end of the nut is preferably provided with an oil passage **66** normally closed by a screw **67**, the lower end of said passage discharging upon the top of the stub-shaft **61** so as to lubricate the screw connection between it and the nut. Any surplus oil thus supplied may overflow through the lateral passages **68** and find its way back into the reservoir, and this may be facilitated by the hole **63***a* through the annular flange **63** of the nut. By these means, the operating nut and screw threaded portion of the stub-shaft may be properly lubricated so as to be easy of operation at all times.

While the wick feature **71** may be omitted if desired, nevertheless, I prefer to employ such wick since it is a constantly operating lubricating means which obviates a necessity for attending to the lubrication of the hydrant except over long intervals.

The holding of the valve stem **24** against rotation at a point entirely above the main valve, as I have provided for in the improvement described in the present application, is of considerable value as it brings the resistance to torsional strain wholly upon the stub-shaft **61** at the top of the main or valve shaft and thereby removes all torsional strain from the latter and the mechanism connected at the lower end thereof; and moreover, the removal of the torsional strain from the valve shaft **14** permits a lighter and less expensive and obstructive shaft to be employed for operating the valve.

These improvements at the upper portion of the hydrant not only provide for lubrication but they bring all of the working parts in position where it is impossible for them to freeze, and particularly so as the stuffing box and oil reservoir project downwardly and into an air tight compartment, thus giving it practically what is equivalent to being in a vacuum chamber, which is assured to a more or less extent due to the filling of the water in the main stock when the hydrant is draining itself.

In respect to the overflow means comprised in the pipe **56** shown in Figs. 2 and 3, it will be un-

derstood that any excess of oil introduced into the reservoir **42**, either directly or indirectly, will cause the more impure oil at the bottom of the reservoir to be discharged through the opening **57***a* and find its way into the space immediately above the diaphragm plate **46** and escape therefrom through the space **76** formed between the perimeter of the said plate and the downwardly extending flange **77** of the bonnet **45**. By keeping the oil within the reservoir to a definite height, all the working parts are insured as to the supply needed, and in this manner the working parts are capable of lasting many times the life of ordinary unlubricated parts at the upper part of the hydrant.

Of course, the hydrant structure shown and described herein may be modified and changed in various ways without departing from the invention herein set forth and hereafter claimed.

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

1. A hydrant comprising stock and bonnet parts, a valve to control the flow of water through the stock, a reciprocating shaft for operating the valve, means arranged in the upper part of the hydrant for guiding the shaft and preventing it from rotating, an oil reservoir secured to the upper part of the stock and surrounding the upper portion of the shaft for lubricating said shaft where it passes through the oil reservoir, means for supporting the oil reservoir independently of the bonnet part, an oil tight packing interposed between the reservoir and said first means, a rotatable nut arranged at the top of the hydrant for reciprocating the valve shaft, said nut having an annular flange seated in the upper part of the hydrant structure above the oil reservoir, and means for supplying oil upward by capillary action to the said annular flange.

2. A hydrant comprising stock and bonnet parts, a valve to control the flow of water through the stock, a reciprocating shaft for operating the valve, means arranged in the upper part of the hydrant for guiding the shaft and preventing it from rotating, an oil reservoir secured to the upper part of the stock and surrounding the upper portion of the shaft for lubricating said shaft where it passes through the oil reservoir, means for supporting the oil reservoir independently of the bonnet part, an oil tight packing interposed between the reservoir and the means for preventing rotation of the valve shaft, a rotatable nut arranged at the top of the hydrant for reciprocating the valve shaft, said nut having an annular flange seated in the upper part of the hydrant structure, and means for supplying oil to the said annular flange of the nut, said oil supplying means comprising a wick extending from the oil reservoir to the rotatable nut portion of the means for imparting reciprocating motion to the valve shaft.

3. A hydrant comprising stock and bonnet parts, a valve to control the flow of water through the stock, a reciprocating shaft for operating the valve, means arranged in the upper part of the hydrant for guiding the shaft and preventing it from rotating, an oil reservoir secured to the upper part of the stock and surrounding the upper portion of the shaft for lubricating said shaft where it passes through the oil reservoir, means for supporting the oil reservoir independently of the bonnet part, an oil tight packing interposed between the reservoir and the means for preventing rotation of the valve shaft, a rotatable nut arranged at the top of the hydrant for reciprocating the valve shaft, said rotatable nut having an annular flange seated in the upper part of the hydrant structure, means for supplying oil to the said annular flange of the nut, said oil supplying means comprising a wick extending from the oil reservoir to the rotatable nut portion of the means for imparting reciprocating motion to the valve shaft, said wick having its upper portion arranged about and in contact with the annular flange of the rotatable nut.

4. In a fire hydrant, the combination of the stock and a vertically reciprocable valve operating shaft with an oil reservoir within the stock at its upper part and through which the shaft extends, a packing arranged within the oil reservoir and between said reservoir and the shaft for providing an oil tight bearing, a rotatable nut journaled in the upper part of the hydrant above the reservoir and screwed upon the shaft for reciprocating it, and a vertical wick extending from the oil reservoir to the journal bearing of the nut.

5. A hydrant comprising stock and bonnet parts, a valve to control the flow of water through the stock, a reciprocating shaft for operating the valve, means arranged in the upper part of the hydrant for guiding the shaft and preventing it from rotating, an oil reservoir secured to the upper part of the stock and surrounding the upper portion of the shaft for lubricating said shaft where it passes through the oil reservoir, means for supporting the oil reservoir independently of the bonnet part, an oil tight packing interposed between the reservoir and the first means, a rotatable nut arranged at the top of the hydrant for reciprocating the valve shaft, and means for supplying lubricant from the reservoir to the valve operating means above the reservoir.

6. A hydrant comprising stock and bonnet parts, a valve to control the flow of water through the stock, a reciprocating shaft for operating the valve, means arranged in the upper part of the hydrant for guiding the shaft and preventing it from rotating, an oil reservoir secured to the upper part of the stock and surrounding the upper portion of the shaft for lubricating said shaft where it passes through the oil reservoir, means for supporting the oil reservoir independently of the bonnet part, an oil tight packing interposed between the reservoir and the means for preventing rotation of the valve shaft, and a rotatable nut arranged at the top of the hydrant for reciprocating the valve shaft, said oil reservoir provided with an overflow aperture leading into the bonnet space which space provides a drainage port for escape of excess of oil from the reservoir to the outside of the stock and bonnet parts, said bonnet secured to the stock and extending over the oil reservoir and carrying the rotatable nut and provided with means above the reservoir for supplying oil thereto.

7. A hydrant having a stock, a main valve and shaft therefor, a stub-shaft forming a jointed extension of the valve shaft, said stub-shaft externally screw threaded at its extreme upper end and having the portion immediately below the said threaded end made smooth and threadless, means removably mounted adjacent the union of the stock and bonnet parts including an oil reservoir for surrounding the stub-shaft and ar-

ranged to provide a smooth vertical sliding oil tight connection between the stub-shaft and the oil reservoir, oil packing means tightly positioned about the lower end of the threadless portion of the stub-shaft and below the stationary means, and a hollow nut at the lower end of the stub-shaft into which the upper end of the valve stem is screwed for permitting reciprocation of the valve stem but preventing rotation thereof.

8. In a hydrant having shoe, stock and bonnet parts, a valve to control the flow of water through the stock, and a reciprocating shaft for operating said valve, transverse means held between said stock and bonnet parts providing means for guiding the shaft and preventing its rotation, said transverse means also provided with an oil reservoir surrounding part of said shaft, and means to prevent water from passing from said stock into said reservoir.

9. In a hydrant having shoe, stock and bonnet parts, a valve to control the flow of water through the stock, and a reciprocating shaft for operating said valve, transverse means held between said stock and bonnet parts providing means for guiding the shaft and preventing its rotation, said transverse means also provided with an oil reservoir surrounding part of said shaft, packing to prevent water from passing from said stock into said reservoir, gland means for said packing, and means for adjusting said gland.

10. A hydrant comprising stock and bonnet parts, a valve to control the flow of water through the stock, a reciprocating shaft for operating the valve, means arranged in the upper part of the hydrant for guiding the shaft and preventing it from rotating, an oil reservoir secured to the upper part of the stock and surrounding the upper portion of the shaft for lubricating said shaft where it passes through the oil reservoir, means for supporting the oil reservoir independently of the bonnet part, an oil tight packing interposed between the reservoir and said first means, a gland for said packing, means for adjusting said gland, a rotatable nut arranged at the top of the hydrant for reciprocating the valve shaft, said nut having an annular flange seated in the upper part of the hydrant structure above the oil reservoir, and means for supplying oil upward by capillary action to the said annular flange.

11. A transverse member for hydrants having stock and bonnet parts, a valve, and a valve operating shaft, said member comprising annular means for fastening same between the stock and bonnet parts, an oil reservoir for surrounding part of said shaft, packing means for retaining the oil in said reservoir, and means for preventing rotation of said shaft.

12. A transverse member for hydrants having stock and bonnet parts, a valve, and a valve operating shaft, said member comprising annular means for fastening same between the stock and bonnet parts, an oil reservoir for surrounding part of said shaft, packing means to prevent water from the stock entering said reservoir, an adjustable gland for said packing, and means for preventing rotation of said shaft.

13. In a hydrant having a casing including a shoe, stock and bonnet parts, a valve to control the flow of water through the stock, and a reciprocating shaft for operating said valve, transverse means removably mounted in said casing adjacent the union of the bonnet and stock providing means for guiding the shaft, said transverse means also being provided with an oil reservoir surrounding part of said shaft, and means to prevent water entering said reservoir from said stock.

14. A transverse member for hydrants having a casing including stock and bonnet parts, a valve, and a valve operating shaft, said member comprising means for removably securing the same within the casing adjacent the union of the stock and bonnet parts, an oil reservoir for surrounding part of said shaft, and packing means for preventing water entering said reservoir from said stock.

15. In a hydrant having a shoe, stock and bonnet parts, a valve to control the flow of water through the stock, and a reciprocating shaft for operating said valve, transverse means held between said stock and bonnet parts providing for guiding the shaft, said transverse means also being provided with an oil reservoir surrounding part of said shaft, and means for preventing water entering said reservoir from said stock.

16. A transverse member for hydrants having stock and bonnet parts, a valve, and a valve operating shaft, said member comprising means for fastening the same between the stock and bonnet parts, an oil reservoir for surrounding part of said shaft, and packing means for preventing water entering said reservoir from said stock.

17. In a hydrant having a casing including a shoe, stock and bonnet parts, a valve to control the flow of water through the stock, and a reciprocating shaft for operating the valve, transverse means removably mounted in said casing adjacent the union of said stock and said bonnet providing means for guiding the shaft and preventing its rotation, said transverse means also being provided with an oil reservoir surrounding part of said shaft, and means for preventing water entering said reservoir from said stock.

18. A transverse member for hydrants having a casing including stock and bonnet parts, a valve, and a valve operating shaft, said member comprising means for fastening the same within said casing adjacent the union of said casing and bonnet parts, an oil reservoir for surrounding part of said shaft, packing means for preventing water entering said reservoir from said stock, and means for preventing rotation of said shaft.

HERBERT M. LOFTON.