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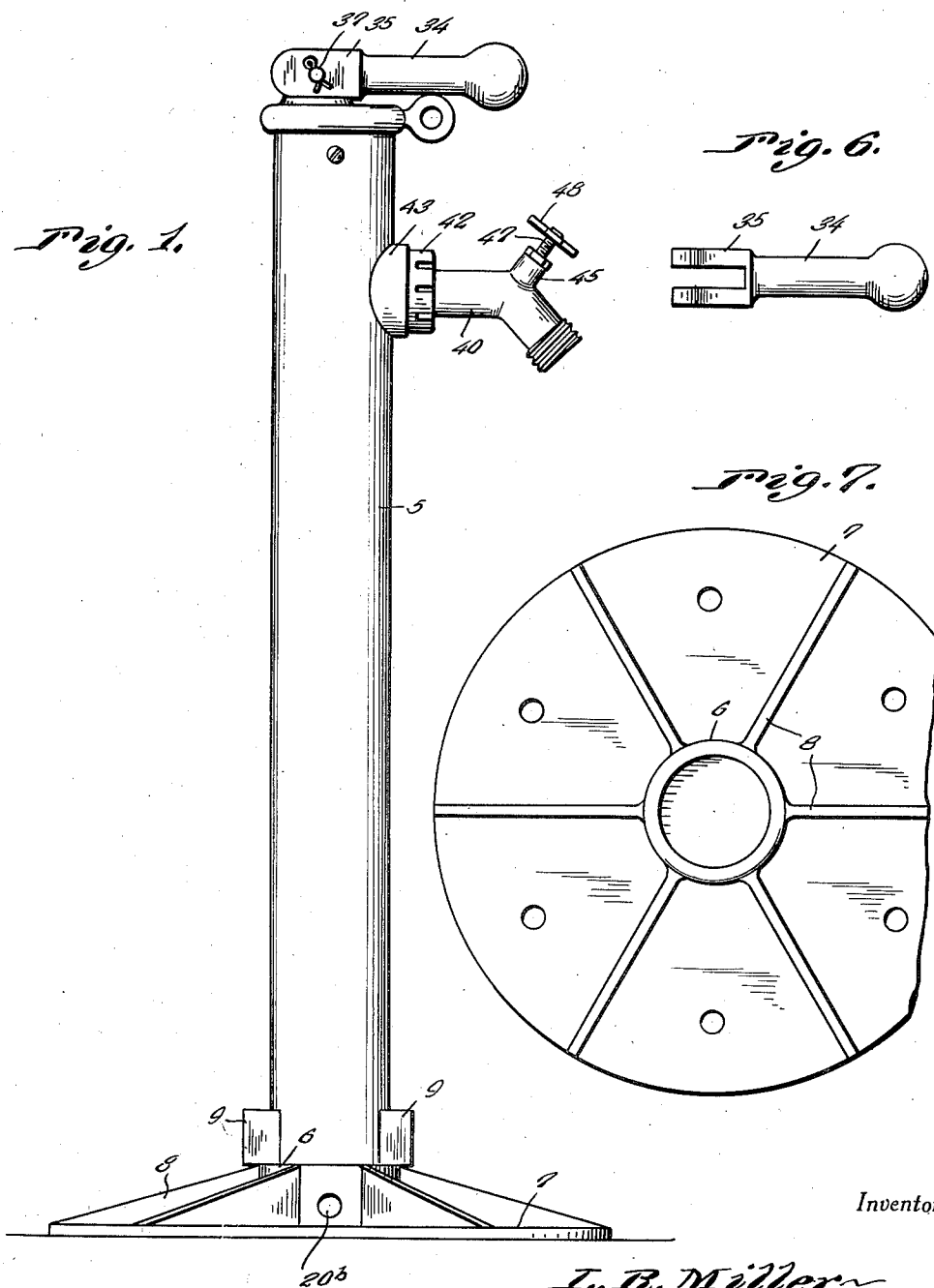
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2,097,733

HYDRANT

Filed Feb. 16, 1937

4 Sheets-Sheet 1



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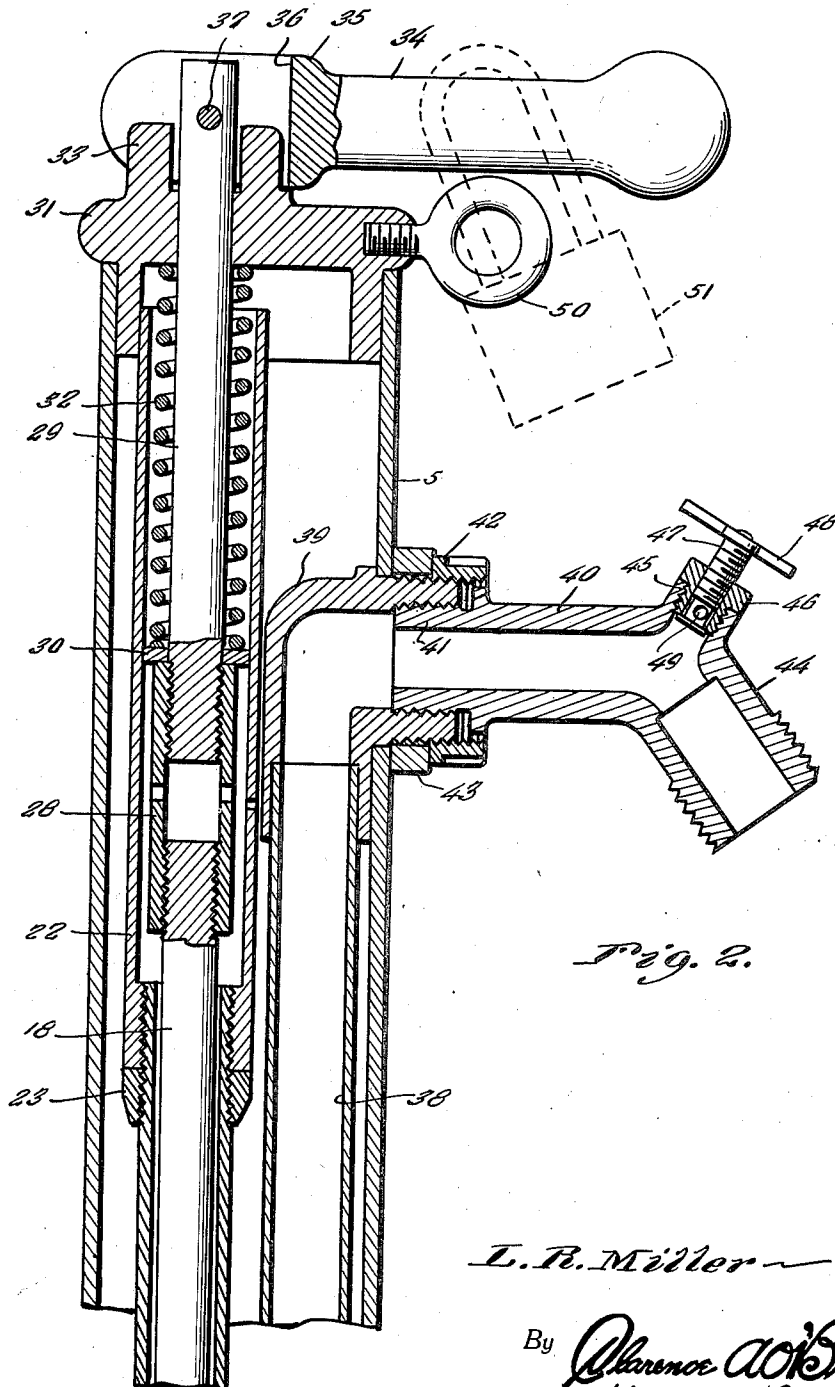
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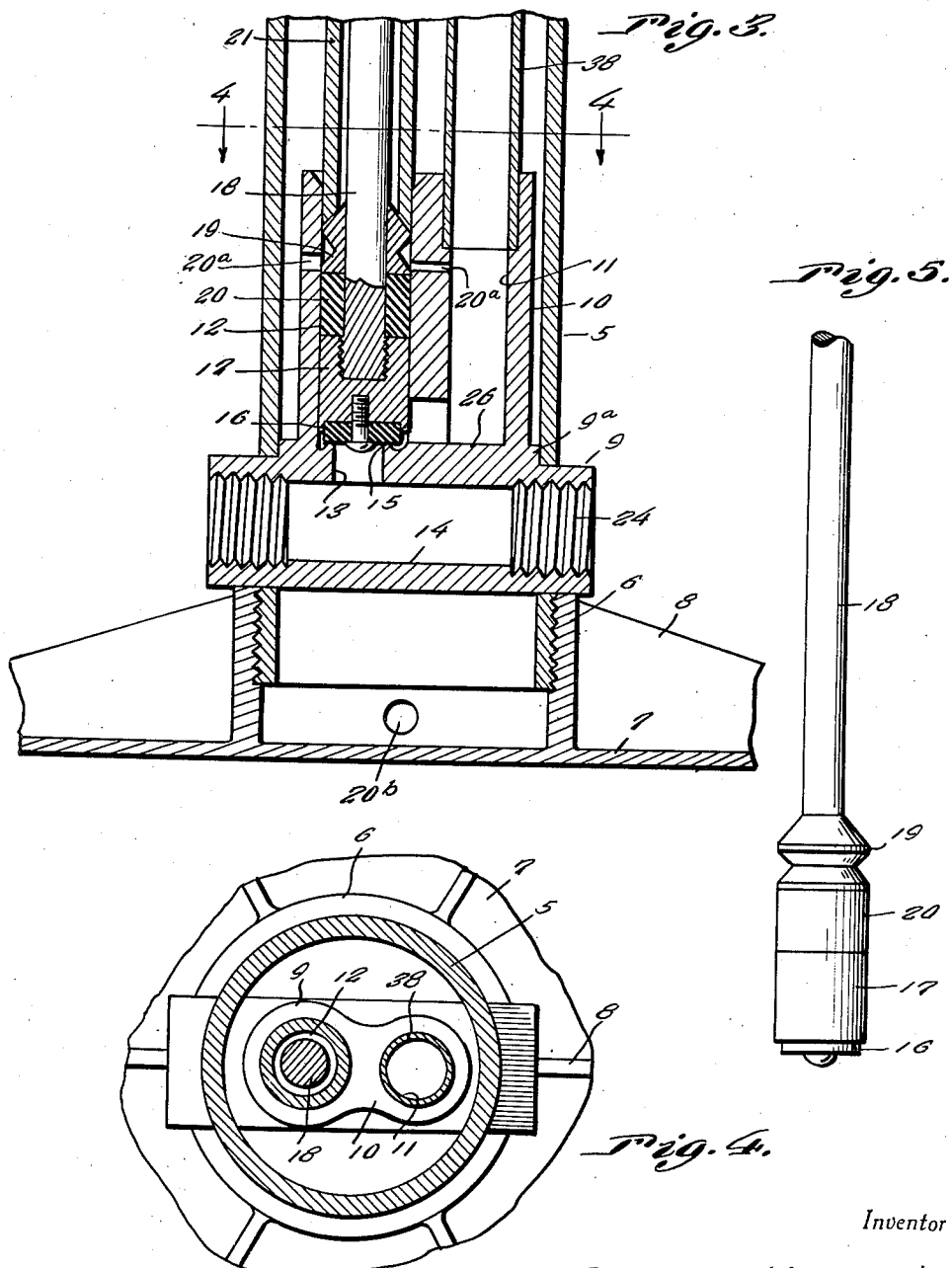
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4 Sheets-Sheet 4

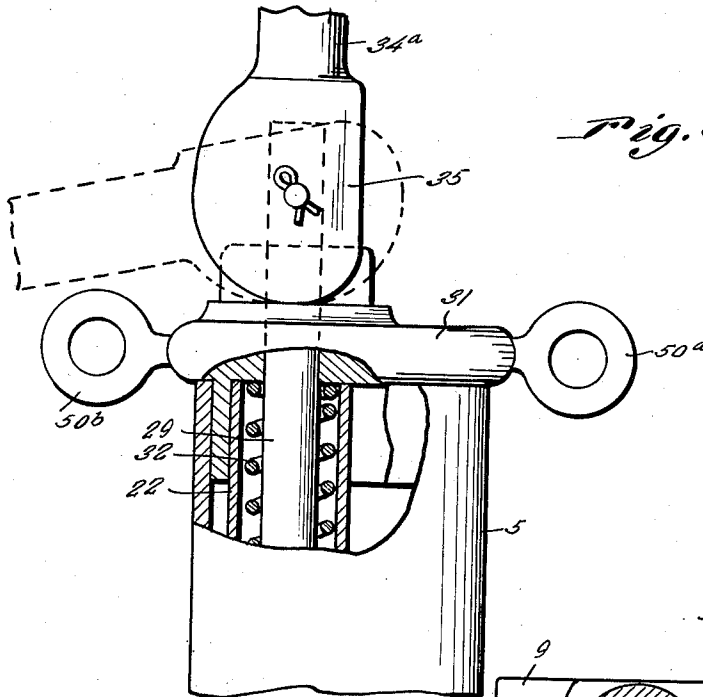


Fig. 8.

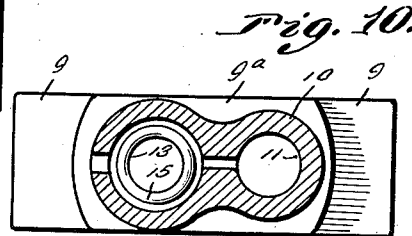


Fig. 10.

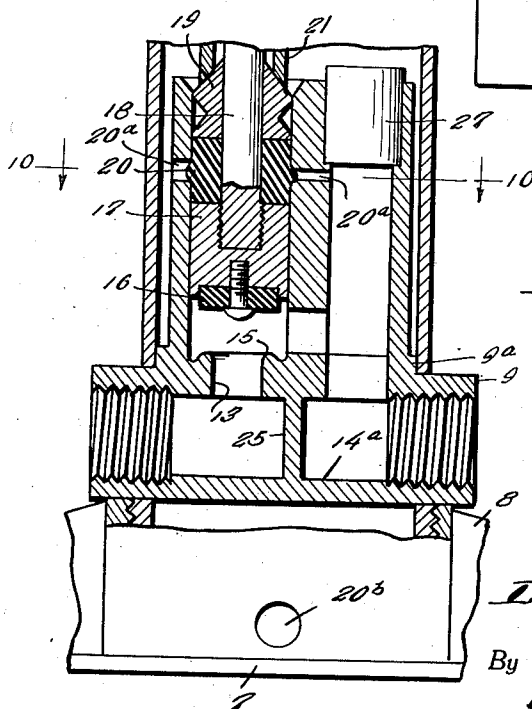


Fig. 9.

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HYDRANT

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2 Claims. (Cl. 137—13)

This invention appertains to new and useful improvements in the general art of water distribution and more particularly to an improved hydrant and mount structure therefor.

5 The principal object of the invention is to provide a hydrant constructed in such a manner as to preclude the possibility of accidental breaking of the same with the resultant leakage of the water line.

10 Another important object of the invention is to provide a hydrant wherein the valve control can be easily locked against operation.

Still another important object of the invention is to provide a hydrant having a unique casting 15 forming part of the valve assembly which can be used in various styles of hydrant.

Still another important object of the invention is to provide a hydrant wherein a drinking fountain is incorporated in the hose connection.

20 A further object is to provide a hydrant provided with means whereby draining of the education pipe will occur at a point below the frost line automatically upon closing of the hydrant valve, and whereby the said drain will be sealed when 25 the valve is opened.

Still another object is to provide a hydrant assembly which can be readily disassembled for the purpose of repair or replacement of parts.

30 These and various other important objects and advantages of the invention will become apparent to the reader of the following specification.

In the drawings:—

35 Figure 1 represents a side elevational view of the invention.

Figure 2 is an enlarged vertical sectional view through the upper portion thereof.

40 Figure 3 is a fragmentary vertical sectional view through the lower portion of the hydrant in closed position.

Figure 4 is a horizontal sectional view on the line 4—4 of Figure 3.

Figure 5 is a fragmentary side elevational view of the valve and rod therefor.

45 Figure 6 is a top plan view of the operating handle.

Figure 7 is a top plan view fragmentarily showing the base.

50 Figure 8 is a fragmentary side elevational view of the upper portion of the modified form of the invention.

Figure 9 is a fragmentary vertical sectional view through a modified form of valve assembly.

55 Figure 10 is a horizontal sectional view through the upper portion of the valve plug with the

mechanism removed of the form of the invention shown in Figure 9.

Referring to the drawings wherein like numerals designate like parts, it can be seen that numeral 5 represents an elongated vertical case having its lower end threaded into the well portion 6 of the base plate 7, which base plate 7 is provided with reinforcing flange 8 and is secured by suitable anchor bolts to preferably a concrete base (not shown). 10

Extending diametrically through the lower portion of the case 5 just above the well or socket structure 6 is the valve block 9. This valve block 9 is provided with the reduced up- 15 standing portion 10 in which are the bores 11 and 12. The block 9 at the lower end of the bore 12 has an opening 13 communicating the bore 12 with the transverse bore 14, the lower end of the bore 12 being provided with a raised portion 15 defining a seat for the cushion head 16 of 20 the valve member 17. This valve member 17 is provided with a threaded recess receiving the lower end of the control rod 18. A packing member 20 is provided on the lower portion of the rod 18 and interposed between the grooved collar 25 19 and the valve element 17 is the packing member 20 of live rubber. The lower end of the sleeve 21 on the rod 18 abuts the tapered upper portion of the grooved collar 19 at its lower end, while its upper end is threaded into the lower portion of the barrel 22 at which point a jamb nut 30 23 is provided.

Reverting to the valve block 9, it can be seen that each end of the block preferably rests upon the edge portion of the well 6 and the ends of 35 the bore 14 therein are threaded as at 24.

While the valve block 9 in Figure 3 somewhat differs from the valve block 9a in Figure 9, it is to be understood that these blocks are in the first instance constructed identically. In other 40 words, the block is in the first instance cast with the partition 25 in the bore 14 or 14a and with the obstructing portion 26 shown in Figure 3. In other words, the block when first cast is inoperative for use, but if it is to be used with the form of the invention shown in Figure 3, the partition 25 is cleared away and one end of the block 9 plugged, while if the block is to be used 45 as shown in Figures 8 and 9 the obstructing portion 26 is bored out and the partition 25 left remaining, as one end of the block is then connected with a water utilizing pipe and the other with the supply. In this instance the upper end of the bore 11 is plugged as denoted by numeral 50 27. Otherwise the block 9a as used in Figure 9 55

is of the same construction as that in Figure 3 excepting with regard to the removal of the portion 26.

As is clearly shown in Figure 2, the aforementioned valve rod 18 extends upwardly into the barrel 22 and is threaded into the lower end of the tubular connector 28, the lower end of the rod section 29 being threaded into the upper end of the tubular connector 28 providing a means of adjustment of rod line 29—18. A washer 30 is provided at the lower end of the rod section 29 and interposed between this and the cap 31 is the coiled compressible spring 32. The spring 32 serves to urge the valve rod 18 downwardly maintaining the valve element in seated position. The top of the cap 31 is provided with the upstanding boss 33 through which the rod section 29 is slidable. The handle 34 of the operating means is provided with the cam-shaped head 35 which is bifurcated as at 36 to straddle the upper end of the rod section 29 and a pin 37 is disposed through the rod section 29 and bifurcated cam head 35 to connect these parts together. Obviously, the handle 34 is swung in a vertical plane to operate the cam head 35 against the top of the cap 31 to lift the rod line 29—18 against the tension of the spring 32 to remove the valve from the seat 15, thus permitting water to enter one end or the other of the block 9, to pass through the opening 13 and into the bore 11 and up the eduction pipe 38 to the elbow 39, and through this elbow to the post connecting nozzle 40, one end of which is threaded as at 41 into the outwardly protruding end of the elbow 39 while jamb nut 42 is provided at this point along with washer 43 to prevent any movement of elbow 39 or nozzle 40 from the device proper. The depending hose connecting end 44 of the nozzle 40 merges with the latter at a point where an upstanding tubular formation 45 is provided and internally threaded to receive the plug 46, which in turn is provided with a threaded bore for receiving the tubular and externally threaded shank 47 of the hand wheel 48. The lower end of this shank 47 is closed, but openings 49 extend through the side thereof, so that when the tubular member 47 is screwed inwardly, the bore of this member 47 will be communicated with the water line through the nozzle 40, so that while water is passing through the nozzle to a hose (not shown) a workman can actuate the handle 48 and obtain a fountain of water through the threaded shank 47 for drinking purposes.

Thus it can be seen in Figure 2, an eye member 50 is provided on the cap 31 so that a padlock 51 can be engaged with the handle 34 and eye 50 for holding the hydrant valve mechanism in closed position.

Figure 8 of the drawings discloses not only an eye 59a for holding the valve handle in closed position through the agency of a padlock, but also an eye member 59b which with the use of a padlock can be used for holding the control handle 34a in open position against movement.

It can be seen, that when the cam 35 is operated to a valve opened position, the rod 18 moves upwardly. The barrel 22 (see Figure 2) is moved upwardly until its upper end abuts the cap 31.

As the cam is moved further the tapered collar 19 rides against the lower end of the barrel 21 and remains in this position as the rod 18 continues to move upwardly through the same carrying with it the packing collar 20 which is now compressed between the collar 19 and the head 17 so that it will bulge into the drain openings 20a—20a. Water can now pass upwardly through the eduction pipe or through the outlet side of the form of the invention shown in Figure 9 without any of the water escaping through the drain. However, when the valve is to be closed, reverse movement of the cam 35 is performed, lowering the valve element against the seat 15 (see Figure 3) and bringing the groove of the collar 19 on to a plane with the drain openings 20a—20a. The eduction pipe 38 can now drain through the ports 29a—29a and around the collar 19, to the inside of the case 5 and out of the bottom of the case through the openings 20b to the area around the base 8 which is preferably a bed of crushed rock or the like so that water can readily flow away from the base 8.

While the foregoing specification sets forth the invention in specific terms, it is to be understood that numerous changes in the shape, size and materials may be resorted to without departing from the spirit and scope of the invention as claimed hereinafter.

Having described the invention what is claimed as new is:—

1. A hydrant comprising a foundation attachable base plate, a vertically extending case detachably secured to the base and provided with a cap, a vertically extending valve rod, a block structure mounted within the lower portion of the case and having a horizontal water inlet bore therein, said block being provided with a pair of vertical bores one of which communicates with the horizontal bore and the other bore communicating with the last mentioned vertical bore, a valve member seatable in the first named vertical bore and to which the valve rod is connected, a water outlet for the other vertical bore, a sleeve surrounding the rod having its lower end positioned in said first named vertical bore, drain openings in said first-named vertical bore, an expansible packing carried by the rod, means on the rod interposed between the sleeve and the packing to expand the latter into the drain opening upon a predetermined opening movement of the valve rod, and operating means at the said cap for the rod.

2. In a hydrant structure, a case, an eduction pipe in the case, a cylinder having a fluid inlet valve seat at its lower end, said cylinder and eduction pipe being in communication, a plunger slidable in the cylinder, means for moving the plunger vertically in the cylinder, drain ports in the eduction pipe and cylinder, and means on the plunger adapted to expand into the ports to close the same when the plunger is unseated from the said seat, said means consisting of an expansible collar on the plunger and means for compressing the collar automatically when the plunger is moved to unseated position.

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