

Sept. 3, 1957

F. R. HANSON
WATER DISTRIBUTOR

2,804,879

Filed July 27, 1953

2 Sheets-Sheet 1

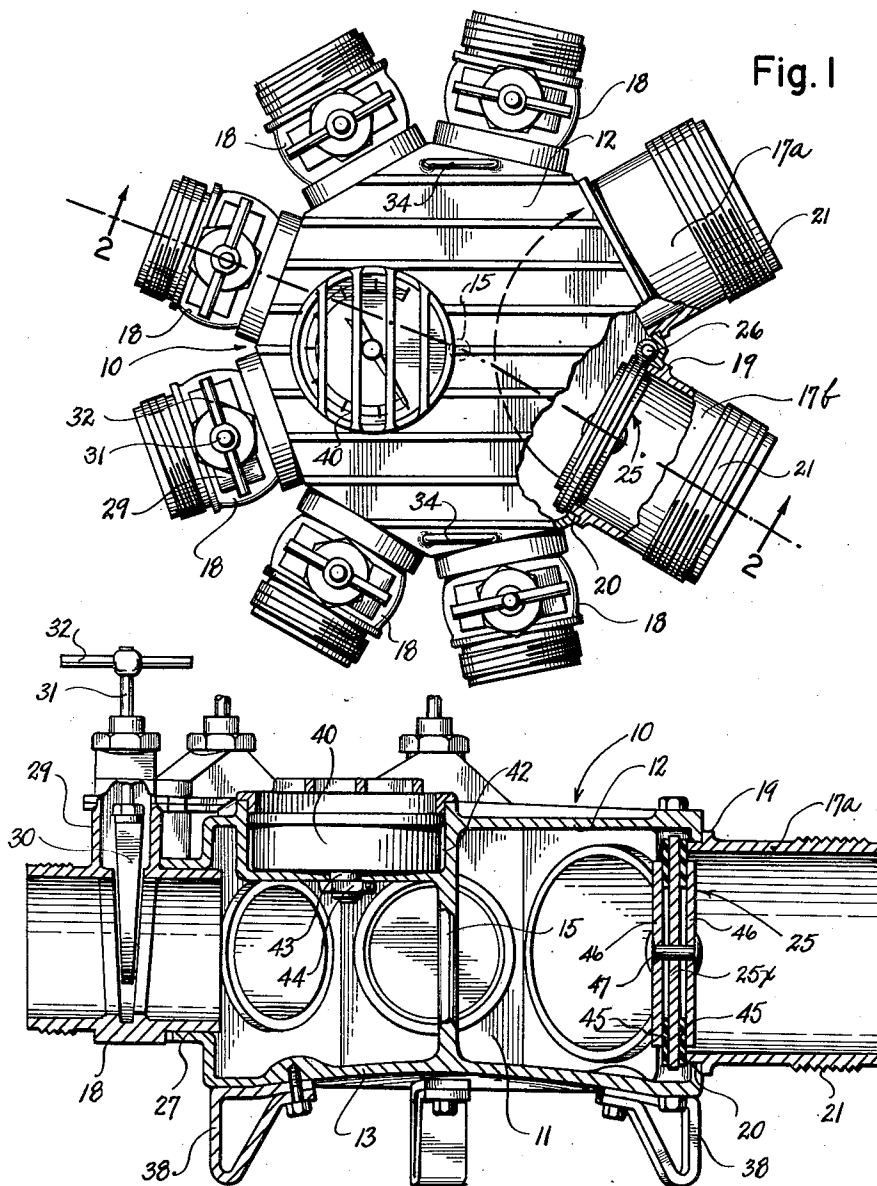


Fig. 2

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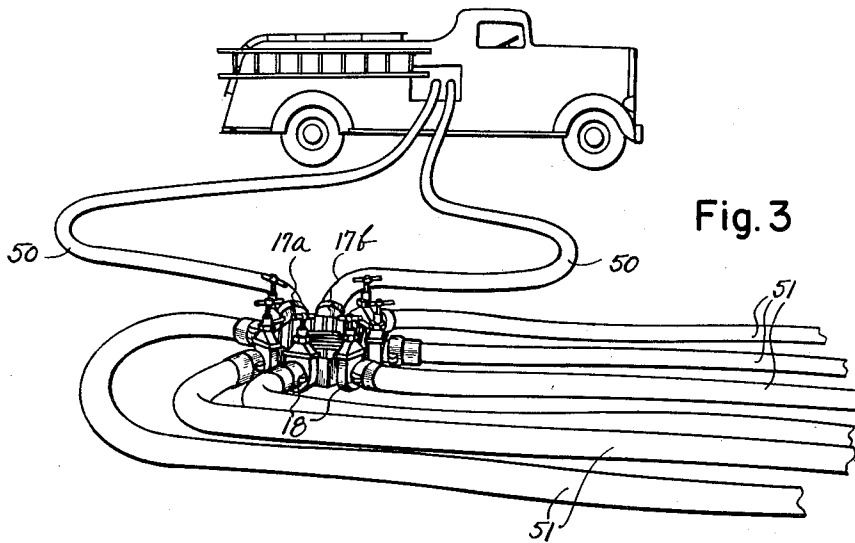
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WATER DISTRIBUTOR

Frank R. Hanson, Seattle, Wash.

Application July 27, 1953, Serial No. 370,273

2 Claims. (Cl. 137—112)

This invention relates to what are known as "water distributors." More particularly, it has reference to a water distributor that is especially adapted for use by city fire departments as a means whereby water that is supplied thereto under high pressure through one or two supply lines, may be distributed to a greater number of valve controlled outlets to which hose connections may be made.

It is the principal object of the present invention to provide a water distributor of the above character that is so limited in size and weight that it can be readily and easily handled by one or two men; that is relatively inexpensive to manufacture; that can be conveniently transported with or on the usual type of hose truck to and from its place of use.

More specifically stated, the objects of the present invention reside in the provision of a water distributor of the above stated character, comprising a valve housing providing a chamber from which a plurality of valve controlled outlets lead, each equipped for the connection therewith of a fire hose, and also equipped with two inlets with which hose connections from a source of supply of water under high pressure may be made, and within which housing chamber a free swinging valve is mounted for closing over one or the other of the inlets; this valve being adapted to be held in a neutral or open position by water as supplied to the chamber through both inlets and which valve will automatically be closed over either inlet in the event that the water supply therethrough is cut off while the water is being supplied through the other.

Further objects and advantages of the invention reside in the specific details of construction of the various parts comprised in the distributor; in their relationship to each other and in the mode of use of the device as will hereinafter be fully described.

In accomplishing the above mentioned and other objects of the invention, I have provided the improved details of construction, the preferred forms of which are illustrated in the accompanying drawings, wherein:

Fig. 1 is a plan view of a water distributor embodied by the present invention; a part of the top wall being broken away to show the swinging valve therein.

Fig. 2 is a vertical section of the distributor as seen on the line 2—2 in Fig. 1, and showing the swinging valve closed over one of the inlets.

Fig. 3 is a perspective view illustrating one manner of use of the distributor and hose connections with its inlets and outlets.

Referring more in detail to the drawings:

In its present preferred form of construction, the distributor of this invention comprises a cast metal housing 10 that is designated in its entirety by numeral 10. This housing encloses a chamber 11, and it comprises a top wall 12 that preferably is heavily cross-ribbed, as seen in Fig. 1, to give pressure sustaining strength thereto, and it has an upwardly crowned bottom wall 13 as shown in Fig. 2. Centrally of the chamber 11, the top and

2

bottom walls of the housing are joined by an integrally cast tie 15. As observed in Fig. 1, this particular housing 10 is substantially octagonal in plan, and has eight flat side wall sections integrally cast with the top and bottom walls and with each other. Opening through two adjacent side walls are inlet or supply fittings 17a—17b and opening through each of the remaining six side walls of the housing are outlet fittings each designated in its entirety by numeral 18.

Each supply fitting comprises a short tubular nipple that is formed with an encircling shoulder 19 near its inner end. The inner ends of those nipples are fitted in openings 20 in the walls and extend into the chamber 11 slightly beyond the walls and the shoulders 19 thereof are engaged firmly against the walls about the openings, and are brazed, soldered or otherwise fixed thereto in a permanent connection. At their outer ends, the fittings 17a and 17b are exteriorly threaded, as at 21 for the attachment thereto of water supply hoses in the usual manner of making such connections.

It will be understood by reference to Fig. 1 that the inner end surfaces of the inlet fittings lie in angularly diverging planes and it is to be further explained that these end surfaces are ground to provide perfectly flat valve seating surfaces. It is shown in Fig. 1 that a swinging valve member, or what is sometimes referred to as a "clapper valve," herein designated in its entirety by numeral 25, is contained in the housing chamber 11 and is mounted on the housing wall between the two inlet fittings 17a and 17b for free swinging action under the influence of water entering through the fittings; the valve member being mounted by a hinge pin or bolt 26 that extends through top and bottom walls of the housing. This valve is so disposed that it can swing to a closing position over either inlet, thus to prevent outflow through the one that is covered. However, in the event that water is being supplied under pressure through both inlet fittings, then the valve 25 will be moved to an open position. If equal amounts of water are being supplied under pressure through both inlets, then the valve 25 will be held at an intermediate or neutral open position, but if water supply through one of the inlets is discontinued, then the water pressure within the housing will operate against the valve 25 to automatically swing it to closed position over that inlet. The position of valve 25 in Fig. 1 would be that which it would assume in the event that water was being supplied only through fitting 17a.

Each of the outlet fittings 18 comprises a short tubular member with its inner end portion extended through a wall opening 27 to the interior of the housing, as has been shown in Fig. 2 and is soldered therein. Each fitting 18 comprises an integrally cast valve housing 29 containing a tapered gate valve 30 that is adapted to be adjusted between an open and closed position by means of a valve stem 31 and valve stem handle 32; this type of valve and means for its adjustment being old and well known. By means of these valves, the outflow of water can be definitely controlled or entirely cut off.

To facilitate handling or carrying of the distributor, the housing 10 is equipped at opposite sides of its top wall with upstanding loops 34—34 to which the ends of a carrying strap, not herein shown, can be attached if such be desired. Also, the housing is equipped with a plurality of legs 38, bolted to its bottom wall as seen in Fig. 2, for its support at such height above the supporting surface that making hose connections with the various fittings 17a—17b and 18 can be easily accomplished.

It is also desirable that provision be made whereby water pressure in the housing chamber 11 can be ascertained, and for this purpose I have applied a pressure

3

gauge 40 to the housing 10 as best shown in Fig. 2. This is set down within a recess 42 in the top wall 12 of the housing, and is secured by a stem 43, extended therefrom through the bottom wall of the recess and held by a nut 44 threaded onto the stem. Water pressure for actuating the gauge indicator is applied to the gauge through a passage in the stem 43.

The preferred construction of the clapper valve 25 shown in Fig. 2 wherein it is noted that it comprises a central disk or plate 25x to the opposite faces of which annular, rubber gaskets 45—45 are fitted and secured by metal disks 46—46 that overlap their inner peripheral portions. A central bolt, or rivet 47 passed through holes provided in the disk and plates secures the parts together in the concentric relationship in which they are herein shown. When the valve is in a closed position, one of the gaskets seats against the inner end surface of the fitting 17a or 17b that is closed by the valve.

In use of the present distributor, it is customary to attach high pressure water supply hoses to the fittings 17a and 17b; such supply lines being designated in Fig. 3 by numerals 50 and 50. Distributing hose lines 51 are connected to the various outlet fittings 18. It is possible to use one or both of the supply lines. However, in the event that water is being supplied through one only, the valve 25 will then be caused to automatically close over the other inlet and no back pressure can be built up in that line. The supply hoses 50—50 can lead from high pressure hydrants or from a pump truck as has been illustrated in Fig. 3.

The number of outlets used at any time is usually determined to some extent by the pressure of water in the housing 10. If there is sufficient water supply, then all outlets can be employed, but if it is inadequate, then one or more outlets are closed off by their control valves 30.

4

This device is practical in size; easy to transport and relatively inexpensive. It can be made of various materials and in various sizes, and with more or fewer outlets.

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

1. A distributor of the character described comprising a housing providing a water tight chamber, and provided with a plurality of outlets from the said chamber, each outlet being equipped with means for making a hose connection therewith and having an adjustable cut-off valve, and said housing having two adjacent inlets, of greater area than the outlets, and each provided at its outer end with means for making a hose connection therewith and within the chamber with a valve seat, a valve plate hingedly mounted in the chamber between the said inlets and adapted to swing thereon in opposite directions to close against said seats respectively, under influence of unbalanced pressures against its opposite face.

2. A distributor as recited in claim 1 wherein the housing is substantially of cylindrical form, and has upper and lower end closing walls, and wherein said inlets are of the same size and open through a side wall of the housing in radial direction, and said outlets are all of the same size and evenly spaced about the cylindrical wall opposite the inlets.

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