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2,807,479

TWO WAY, WALL MOUNTED FIRE HOSE NOZZLE

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2 Sheets-Sheet 1

FIG. 1.

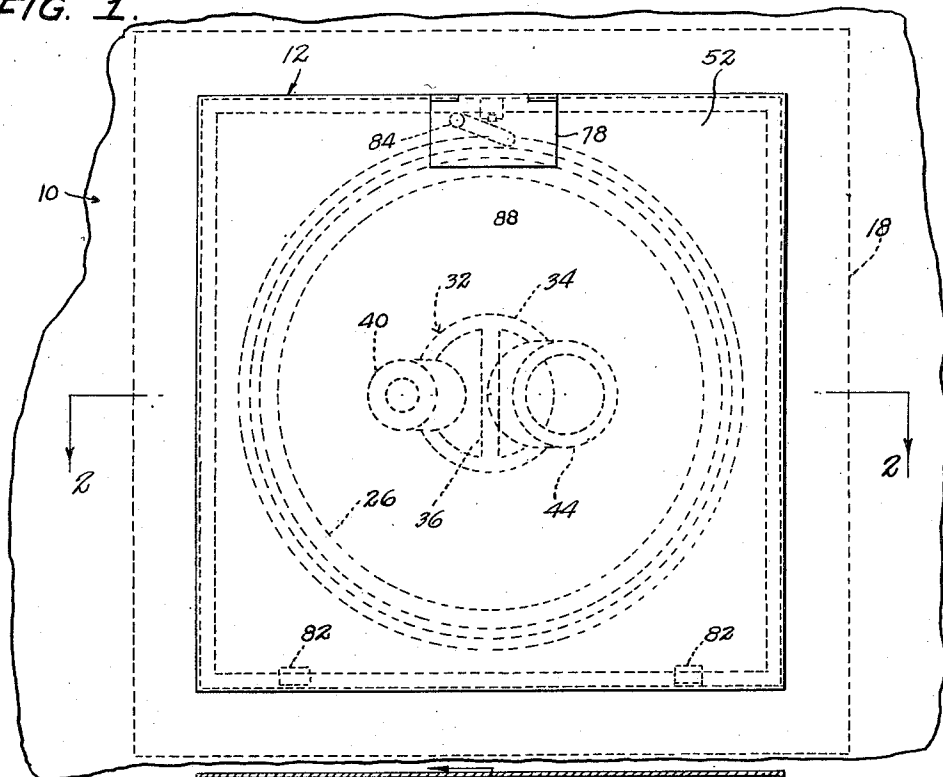
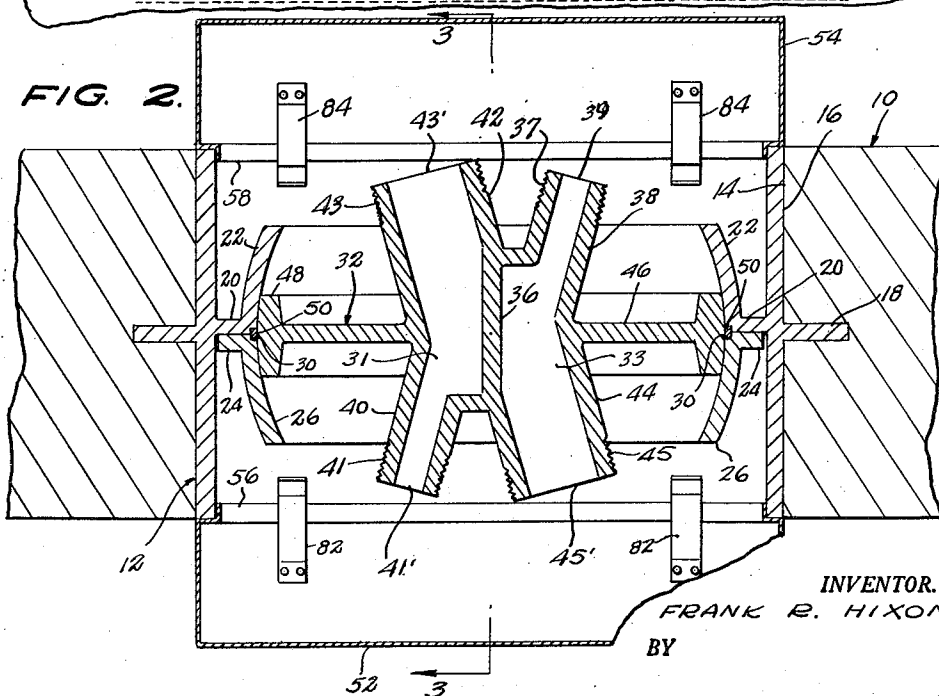


FIG. 2.



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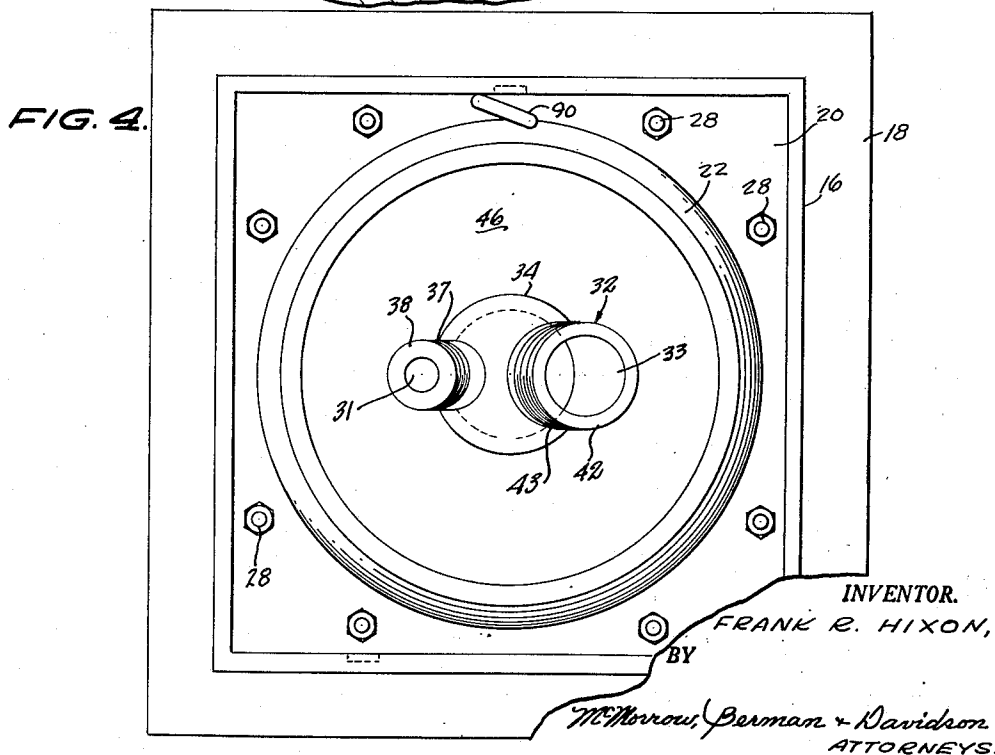
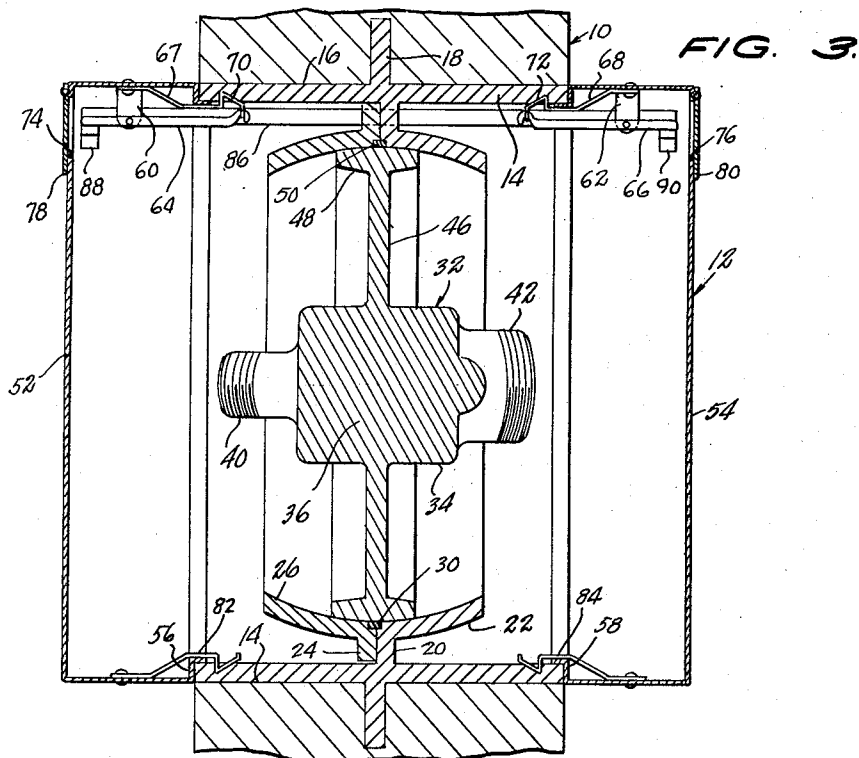
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TWO WAY, WALL MOUNTED FIRE HOSE NOZZLE

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2 Claims. (Cl. 285—64)

This invention relates to a fire hose nozzle assembly adapted to be permanently mounted in an opening formed in a building wall, partition, or the like, so as to permit connection of a fire hose to the nozzle assembly at one side with the water being discharged from said assembly at the other side of the wall, without the necessity of breaking through the wall.

Often, during the fighting of a blaze within a building, the firemen encounter serious difficulty, in attempting to direct water into a particular room, particularly an enclosure within the building that may not be provided with a window or other readily accessible opening through which the fire hose may be brought or the water streaming from the hose nozzle directed. Under these circumstances, it may be necessary to chop a hole through a wall, for the purpose of directing the water from the hose therethrough into said enclosures. Obviously, considerable time is lost under these circumstances, and further, an unnecessary amount of damage is done to the building if, for example, the blaze might not otherwise be so serious as to damage the wall in which the hole is chopped.

In view of the above, the main object of the present invention is to provide a nozzle assembly, adapted to be permanently mounted within a building wall, with said assembly being so designed as to permit swift connection of a fire hose to the same at one side thereof, for the purpose of directing water directly through the wall, into a space at the other side of the wall.

Another object of importance is to so design said assembly as to cause the same to occupy an inconspicuous location within the wall, with the assembly being mountable, for example, adjacent the ceiling, or alternatively, near the floor.

A further object of importance is to provide an assembly as stated which will include cover means at opposite sides thereof, associated with means for disengaging the covers in a manner that permits both covers to be removed, even though access can be had only to a cover at one side of the wall.

A further object of importance is to so design the novel assembly as to permit the same to be freely rotatable, with the hose nozzle thereof being positioned obliquely to the axis of rotation thereof, as a result of which the assembly can be rotated with the hose connected thereto, with the water being directed into the enclosure in a plurality of directions, rather than in a single unchanging path.

A further object of importance is to form the nozzles and hose connecting portions of the assembly in such a manner as to permit connection either of small or large diameter hoses thereto.

Yet another object is to form the nozzle assembly in such a manner as to permit the water to be directed into the enclosure either at high velocity or low velocity, by reason of the arrangement wherein each of a pair of twin nozzles, separated from one another by a par-

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tion in the assembly, have a small end and a larger end, capable of being selectively employed for attachment of a hose thereto.

Other objects will appear from the following description, the claims appended thereto, and from the annexed drawing, in which like reference characters designate like parts throughout the several views, and wherein:

Figure 1 is a front elevational view of the device constituting the present invention, as it appears when mounted in a wall, only a fragmentary portion of which is shown;

Figure 2 is a sectional view on line 2—2 of Figure 1; Figure 3 is a sectional view on line 3—3 of Figure 2; and

Figure 4 is a front elevational view of the assembly per se, the cover being removed.

At 10 there has been generally designated a conventional building wall, such as a partition within a building dividing the same into different rooms or enclosures. The water conducting unit or device constituting the present invention has been generally designated at 12, and is mounted in a rectangular opening 14 formed in the building wall. The device includes a rectangular casing 16, having the shape of a rectangular, open frame, the several sides of the frame being engaged against the edge of the opening 14 with the frame being of a width corresponding to the overall width of the wall as shown for example, in Figures 2 and 3. The casing, medially between the opposite edges thereof, is formed with a peripheral, outwardly projecting flange or rib 18, embedded in the wall to insure the stationary mounting of the casing during use of the nozzle assembly in the combatting of a fire.

Cast or otherwise formed integrally with the casing, and extending inwardly thereof, is a flat plate 20, having a rectangular outer configuration corresponding to that of the casing as shown in Figure 4. Plate 20 is integral with a flange 22 which is formed as a segment of a sphere (see Figures 2 and 3) the flange circumscribing a center opening in the device, carrying, as will appear from the description to be provided hereinafter, a rotatable nozzle assembly.

In face to face contact with plate 20 is a second plate 24, as of rectangular outer configuration, having an area and shape corresponding to that of the plate 20, and plate 24 has a flange 26 extended in a direction opposite to that in which the flange 22 extends, but constituting a segmental portion of the same sphere of which flange 22 is a part as shown in Figures 2 and 3, to define a ring in which a nozzle assembly can be rotatably mounted, as will presently appear. Bolts 28, spaced about the circumference of the flange 26, extend through the plates 20, 24 to fixedly secure the plates and flanges to one another.

Formed in the flanges 22 and 26 in their inner, contacting edges, are grooves of right angled cross section, cooperating to define an internal groove 30 extending continuously through the full circumferences of the flanges.

A nozzle assembly has been generally designated at 32, and includes a body 34 disposed centrally of the associated flanges 22, 26. The body 34 is of a circular cross section, and is greatest in diameter at its opposite ends, the diameter of said body being progressively reduced in the direction of the midlength portion thereof, that is, the body is of minimum diameter where the plane of groove 30 lies. The body is formed with a flat partition 36 (Figures 2 and 3), lying in a plane normal to said plane of groove 30, and the partition defines at opposite sides of the same open ended water passages 31 and 33 through the nozzle assembly.

At one end, the body is integral with a relatively small

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diameter tubular member 38, extending obliquely to the plane of groove 30 and provided with external threading 37 at its open outer end 39. The tubular member 38 is in full communication at its inner end, at one side of partition 36, with the inner end of a larger tubular member 44 provided with external threading 45 at its open outer end 45' and extended at an obtuse angle to the member 38, so as to be oblique to the plane of the groove 30. Another small diameter tubular member 40, having its open outer end 41' provided with external threading 41, projects from the other end of the body, at the opposite side of the partition, in parallelism with the length of the tubular member 38, and is in communication with the inner end of a large diameter tubular member 42, disposed in side by side relation with the tubular member 38 and extending with its length parallel to the length of the tubular member 44. The member 42 is formed with external threading 43 at its outer open end 43'.

The tubular member 38, 40, 42, and 44 will define nozzles with the passages 38' and communicating passage 44' of the members 38 and 44 respectively defining the water passage 33 through the body 34 and separated from the similar water passage 31; defined by the communicating passages 40' and 42' of the tubular members 40 and 42 respectively, by the partition 36 to form side by side water passages through the interior of the body 34.

Integral with the body, medially between opposite ends thereof, is a flat, circular plate 46, lying in the plane of groove 30, and cast integrally upon the periphery of the plate 46 is a relatively wide rim portion 48 the outer surface of which is transversely curved correspondingly to the curvature of the inner surfaces of the flanges 22, 26. A seal or packing 50 is disposed within the groove 30. Thus, the nozzle assembly is rotatably mounted within the support ring constituted by the flanges 22, 26, and their associated plates 20, 24 for movement about both its longitudinal and transverse axis so that the tubular members can have their open ends rotated into any desired position.

Ordinarily, the nozzle assembly is enclosed, through the provision of rectangular covers 52, 54 having flanges directed inwardly toward one another, with said flanges having inwardly offset lips 56 receiving the opposite edges of the casing 16.

Referring now to Figure 3, means is provided for normally holding the covers connected to the casing edges, which means is nevertheless adapted to permit removal of the covers with ease and facility, whenever the device must be used. As shown in Figure 3, carried by the flanges of the respective covers at the top of the covers are depending brackets 60, 62 respectively, on which are pivotally mounted latch release arms 64, 66 having hook shaped ends adapted to engage in apertures formed in the free ends of spring latches 67, 68.

The spring latches are anchored at one end to the brackets 60, 62, and at the free ends thereof, have offset portions engageable in latching recesses 70, 72 formed in the inner surface of the casing 16. The spring latches are tensioned to normally spring into the recesses, the offset portions being cammed by the lips 56, 58 inwardly for the purpose of permitting attachment of the covers. When the covers are fully mounted upon the casing edges, the offset portions are disposed for engagement in the recesses 70, 72.

Providing access to the latch release arms 64, 66 are openings 74, 76 formed in the covers 52, 54, respectively. These openings are closed by pivoted flaps 78, 80 which can be swung outwardly to expose the latch release arms.

Carried by the covers at the bottom thereof, are pairs of spring latches 82, 84 formed similarly to the upper latches, except for not having portions receiving latch release arms.

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An elongated release arm shifting bar extends within the casing, having its intermediate portion mounted in registering openings formed in the plates 20, 24. At its opposite ends, the bar 86 has lateral projections 88, 90, disposed below the outer end portions of the latch release arms.

Assuming that there is a blaze within a room at one side of the wall, and access in said room is prevented by the wall, the fireman first removes one of the covers. It will be assumed, in this connection, that the blaze is occurring in the room at the right of the device seeing the device as in Figure 3, with the fire being in the room at the opposite side of the wall. Accordingly, removal of the cover 52 is accomplished by swinging flap 78 outwardly after which the latch release arm 64 and the latch release arm 66 are pivoted about their fulcrums, by grasping the extension 88 and swinging the same upwardly. When the extension 88 is swung upwardly it will press against the outer end of arm 64, swinging the hook shaped portion thereof downwardly. At the same time, the bar 86 is rotated, causing extension 90 to also swing upwardly, thus to rock arm 66 counterclockwise about its fulcrum to disengage latch 68 simultaneously with the disengagement of latch 67.

With the rock shaft or bar 86 rotated as described above, the fireman may grasp the cover 52, and pull the same off the casing, rocking the cover 52 during the removal operation about the bottom portion of the casing, to disengage the latches 82 of cover 52. Now, with the cover 52 removed, the bar 86 is shifted in an axial direction, to the right in Figure 3, so that the extension 90 will engage against the cover at opposite sides of the opening 76, and will exert a pushing action against the cover 54 tending to rock the same about the lower portion thereof in the same manner as cover 52.

With both covers removed, a hose is connectable to any one of the members 38, 40, 42 or 44, which members define nozzles, as desired. For example, a large diameter hose can be connected to nozzle 42 or 44, and due to the restricted size of the communicating nozzle 38 or 40 respectively, water will be directed at high velocity through the nozzle 38 or 40 into the room in which the blaze is occurring. At the same time, the plate 46 can be rotated within the support ring, so as to cause the stream of water to rotate through a path about the transverse and longitudinal axes of the casing 16 to reach all portions of said room.

Alternatively, a hose can be connected to the small nozzle 38 or 40, and a stream of reduced velocity, but of substantial quantity, will be directed through the respective communicating large nozzle 42, or 44.

It will be seen that the device is operable from either side of the wall, in the same manner, thus providing a two way assembly usable to advantage in fighting a blaze within a room, from a room adjacent the same. The device is usable, of course, to advantage in large warehouses, stores, and in other structures in which there may be interior rooms to which access is blocked either through the lack of window or door openings, or because the blaze is too heavy at the location of said openings to permit direction of a stream of water therethrough by reason of the inability of a fireman to withstand the heat while holding the hose properly positioned for direction of the stream through the window or door opening.

Further, the device is of course usable in residences, and can be so located as to be relatively inconspicuous, or, in fact, concealed by furniture or other types of room furnishings.

It is believed apparent that the invention is not necessarily confined to the specific use or uses thereof described above, since it may be utilized for any purpose to which it may be suited. Nor is the invention to be necessarily limited to the specific construction illustrated and described, since such construction is only intended to be illustrative of the principles, it being considered

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that the invention comprehends any minor change in construction that may be permitted within the scope of the appended claims.

What is claimed is:

1. A building-wall mounted water conducting device for connection to fire hoses comprising: a casing adapted to be mounted in an opening provided therefor in a building wall and having depth corresponding substantially to the thickness of said wall, means carried by said casing interiorly thereof and providing a supporting ring defining an opening through said casing and having an inner part-spherical surface, a nozzle assembly mounted in and closing said opening and including a central water-conducting tubular body normally disposed coaxial with said supporting ring and a peripheral rim fitting said ring member and whose outer surface is formed part-spherical and complementary to the inner surface of said supporting ring member, whereby said nozzle assembly may partake of universal movement within said casing, said tubular body being longitudinally partitioned to provide a pair of water-conducting passages therethrough, the opposite ends of each said passage comprising outlet nozzles and

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each said nozzle having means for connecting a fire hose thereto, said tubular body having axial depth which is less than the depth of said casing whereby its said ends are contained within the depth dimension thereof, and quick-detachable covers affixed to the opposite ends of said casing for normally closing off and concealing said nozzle assembly.

2. A building-wall mounted water conducting device substantially as set forth in claim 1, wherein the nozzles of each said passage have different diameter.

References Cited in the file of this patent

UNITED STATES PATENTS

136,687	Woodman	Mar. 11, 1873
488,624	Brewster	Dec. 27, 1892
692,375	Snider	Feb. 4, 1902
783,301	McMillan	Feb. 21, 1905
908,414	Mellin	Dec. 29, 1908
1,880,098	Mair	Sept. 27, 1932
1,981,424	Lake	Nov. 20, 1934