Oct. 13, 1931. F. J. HARRIS 1,827,579

COUPLING FOR PUMPING FIRE ENGINES

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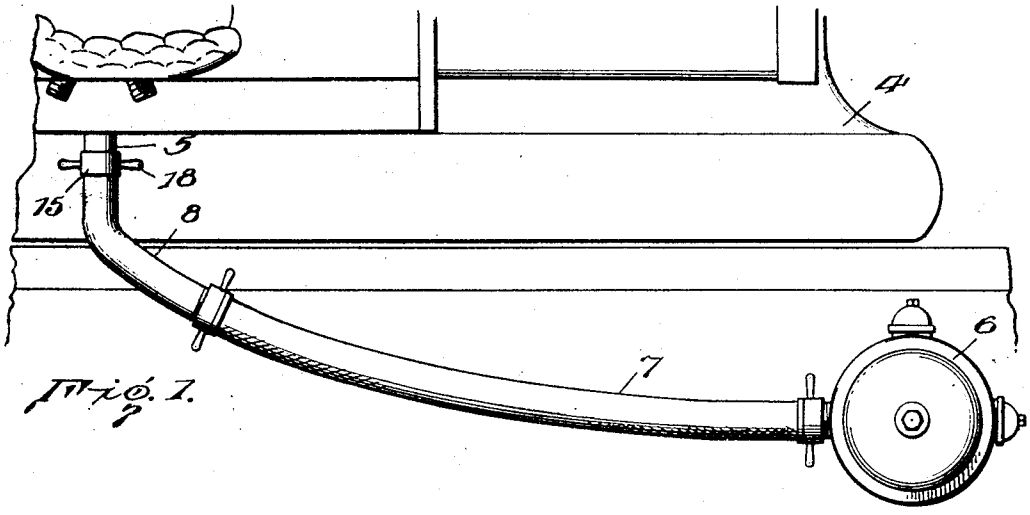


Fig. 1.

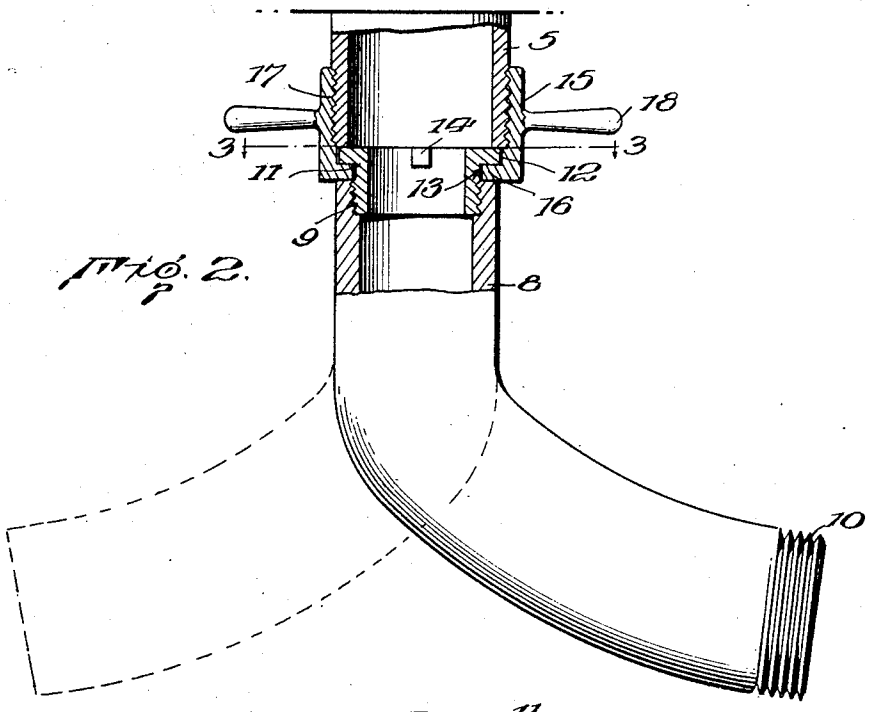


Fig. 2.

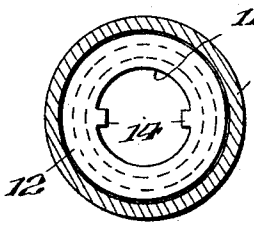


Fig. 3.

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COUPLING FOR PUMPING FIRE ENGINES

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The present invention consists of a coupling for pumping fire engines and has for an object the provision of coupling means through the medium of which a fire engine and fire hydrant may be placed in communication while the engine is in close proximity to the curb, thereby eleminating the necessity of parking the engine several feet from the curb, usually in the middle of the highway or thoroughfare, to accommodate the suction hose, the overall length of which latter is customarily in excess of eleven (11) feet.

Another object of the invention is to increase the pumping efficiency of the engine by providing a coupling which permits connection of the suction hose with the fire hydrant while the engine is in close proximity to the latter, but so disposed with respect thereto that ample space is provided for the accommodation of the suction hose; the position of the suction connection of the engine with respect to the water outlet of the hydrant being immaterial.

A further object of the invention is to provide a coupling which permits connection of the hydrant and engine while at close range and in addition, permits draughting of water from rivers, creeks, streams or the like, at great depth and in a facile and expeditious manner.

A still further object of the invention is to provide a coupling which permits the suction hose to be connected with either side of a water hydrant, immaterial of the direction in which the pumping engine is traveling, the coupling being so formed that the suction hose is retained in substantially parallel relation to the engine so that the latter may be parked in close proximity to the hydrant.

Other objects of the invention will be apparent from the following description of the present preferred form of the device, taken in connection with the accompanying drawings, wherein

Fig. 1 is a top plan view of a coupling, constructed in accordance with the present invention, illustrating the application of the same;

Fig. 2 is a similar view of the coupling per se, a portion thereof being broken away to disclose the manner of engaging the swivel nut of the coupling; and,

Fig. 3 is a cross-sectional view, taken on the line 3—3 of Fig. 2, looking in the direction of the arrows.

In the drawings, in order to illustrate the application of this invention a portion of a pumping fire engine is shown, as indicated at 4, and embodies the usual suction hose connection 5, extending from a fire engine. I have additionally shown in Fig. 1 a conventional form of fire hydrant 6, to which is attached one end of a suction hose 7, the latter being also standard or conventional.

The coupling per se includes a tubular element which in the present instance, is shown to be an inflexible pipe 8, preferably circular in cross-section and bent adjacent one end to provide a bend or curvature in the pipe in excess of sixty degrees (60°). Preferably the pipe is bent at an angle of approximately eighty degrees (80°), as illustrated to advantage in Fig. 1 of the drawing, so as to project the outer end thereof beyond the side of the fire engine, but in substantially parallel relation to the latter in the direction of the fire hydrant. One end of the pipe 8 is provided with internal screw-threads 9, while the opposite end is provided with external screw-threads 10. The internal screw-threads 9 are adapted for engagement with complemental threads formed on the outer periphery of a bushing 11, the outer end of which latter is provided with an annular flange 12. The portion of the outer periphery of the bushing 11, between the threads 9 and the flange 12, is smooth, as indicated at 13, for a purpose more fully hereinafter set forth. In order to facilitate engagement and disengagement of the bushing with and from the pipe 8, it is preferable to equip the bushing with lugs 14 which are formed in the bore of the bushing at the outer end of the latter. A wrench is engageable with the lugs in a manifest manner, to turn the bushing.

In order to connect the pipe 8 to the suction connection 5 of the pumping engine, a nut 15 is provided which has one end formed to provide an internal annulus 16, the lat-

ter being adapted to engage the smooth portion 13 of the bushing 11. Upon reference to Fig. 2 of the drawings, it will be noted that the annulus 16 is housed between the flange 12 of the bushing 11 and the terminal of the pipe 8. Consequently the pipe 8 is free to rotate in the nut 15, thereby providing a swivel connection so that the pipe 8 may be freely rotated for a purpose more fully hereinafter set forth. A portion of the bore of the nut 15 is smooth, adapted for impingement with the outer periphery of the bushing flange 12. The remaining portion of the bore of the nut is threaded, as indicated at 17, adapted for engagement with the threads of the suction connection 5 of the engine. Handles 18 radiate from the outer periphery of the nut 15 to facilitate engagement of the nut with, or disengagement of the nut from the connection 5.

The standard suction hose commonly in use on pumping fire engines at the present time has an overall length, including the hose with terminal swivel nuts in excess of eleven (11) feet. This length of hose has been found necessary to provide a cushion for the protection of the pumping mechanism, but it has proven awkward, especially in cities, in that it necessitates the positioning of the engine about ten (10) feet or eleven (11) feet from the curb, with the result that the street or thoroughfare is blocked, greatly hampering, in many instances, fighting of the fire and retarding rescue work, since it is impossible to get ambulances or other conveyances to a point in proximity to the conflagration. With the device of the present invention, the cushioning effect is still retained, in that one end of the suction hose 7 is connected to one side of the water hydrant while the opposite end of the hose is engaged with the external screw-threads 10 of the pipe 8. The angularity of the pipe 8 however, is such that the suction hose extends along the side of the fire engine at substantially right angles to the latter, thereby permitting the engine to be drawn up close to the curb. The tubular element or pipe 8 is swiveled, so that the hose may be connected from either the front or back of the engine, it being immaterial from which direction the engine approaches the water hydrant. Furthermore, as is apparent from the illustration in Fig. 1 of the drawings, two engines may be drawn up into close proximity to the fire hydrant and placed in communication therewith, through the medium of the present invention. Additionally, in unusual cases, should it be desired to connect a third engine with the hydrant, the suction hose may be connected to the other outlet of the hydrant and directly engaged to the third engine. Manifestly very little time is consumed in placing the pumping engine in communication with the hydrant. To expedite connecting the engine to the hydrant the coupling of the present invention may, in view of its compact construction, be left attached to the suction hose at all times.

In draughting water from rivers, creeks, or the like, the present connection may be advantageously employed to draught the water from great depths by running the engine alongside of the source of supply and immersing one end of the hose in the water in an apparent manner. The coupling insures free passage of the water at all times, regardless of the angle from which the water is taken with respect to the suction connection of the engine.

It is, of course, to be understood that various changes may be made in this device, especially in the details of construction, as come within the scope of the appended claims.

What is claimed is:—

1. A coupling for placing a pumping fire engine and a fire hydrant in communication at close range, including a flexible non-collapsing hose for attachment at one end with a hydrant, a relatively rigid coupling member detachably engaged at one end with the other end of the hose and having a swivel connection at its other end with the engine, said rigid coupling member being bent intermediate its ends at an angle less than a right angle to provide for disposing the flexible hose in substantial parallelism to the engine when in coupling relation.

2. An adapter for use in a coupling between a pumping fire engine and a fire hydrant using a length of flexible non-collapsing hose, comprising a rigid length of pipe bent intermediate its ends at an angle less than a right angle and having a coupling part at one end for detachable engagement with one end of the hose, and having a swivel connection at its other end for detachable engagement with the suction connection of the fire engine, whereby the fire engine may be coupled to the hydrant with the engine disposed substantially parallel to and closely adjacent the curb and fire hydrant and with the flexible hose disposed substantially in a straight line parallel to the fire engine.

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