Sept. 21, 1948. E. C. RUMSEY 2,449,719

NOZZLE HOLDER

Filed Oct. 17, 1946 2 Sheets-Sheet 1

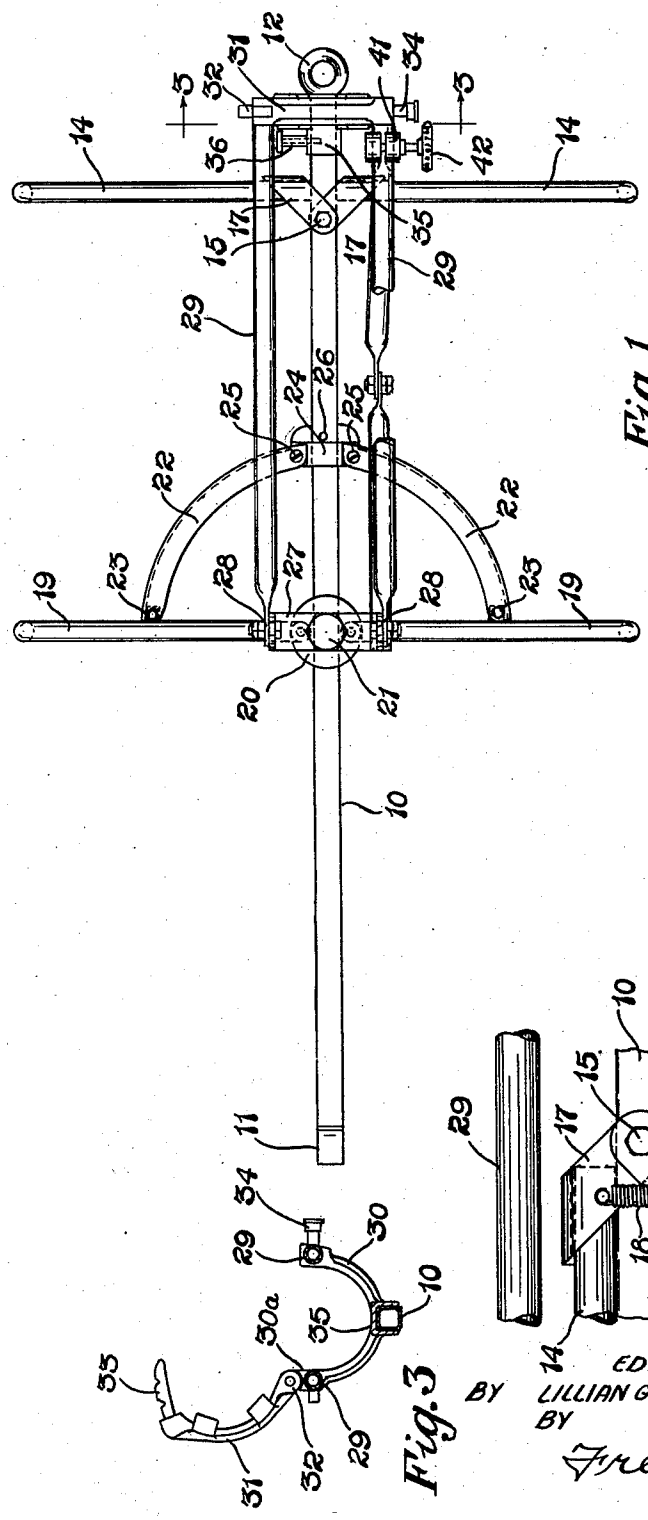


Fig. 1

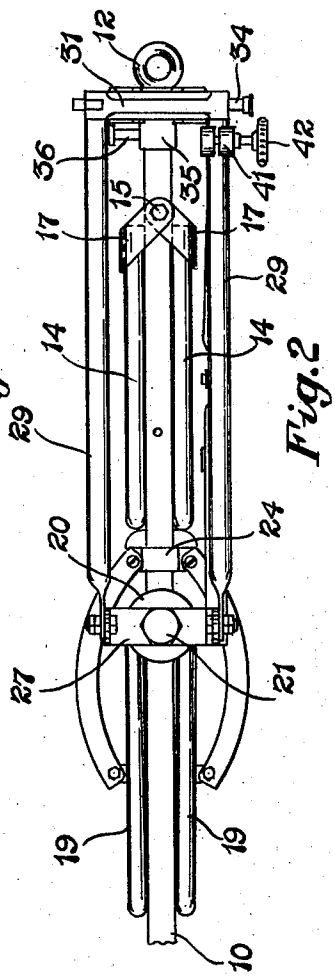


Fig. 2

Fig. 3

Fig. 4

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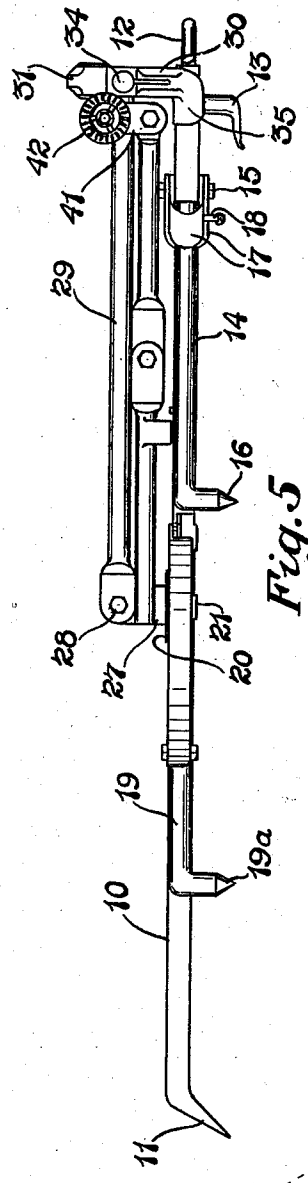


Fig. 5

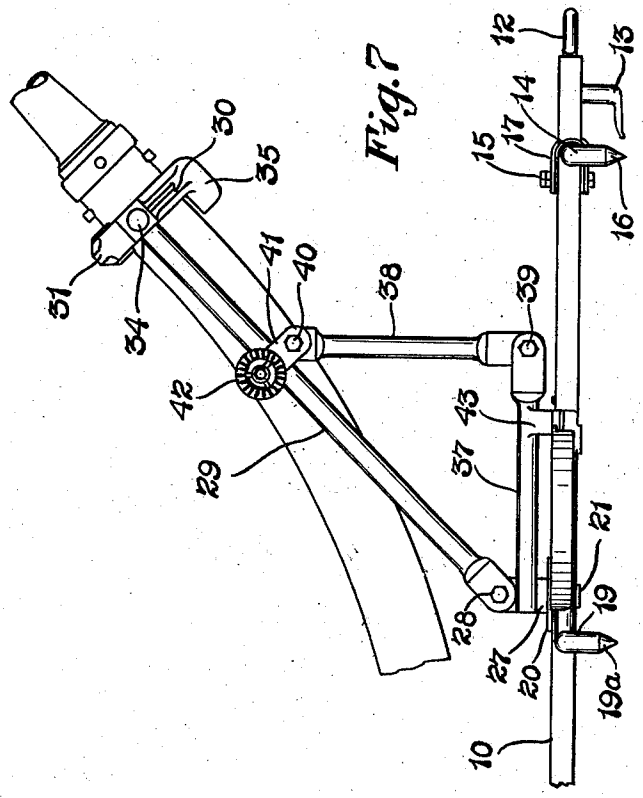


Fig. 7

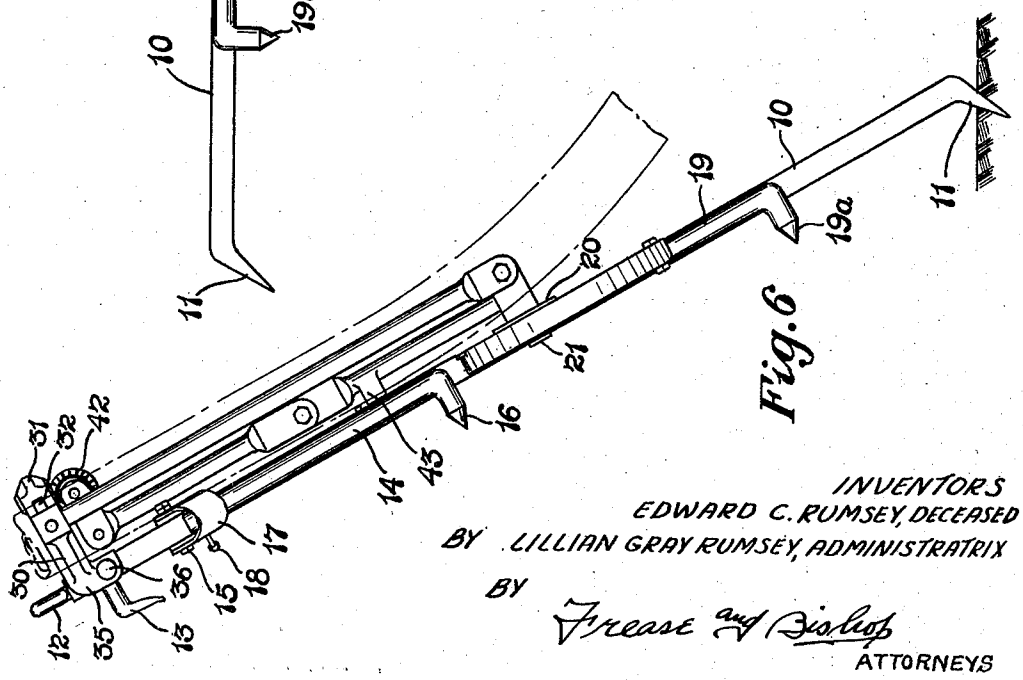


Fig. 6

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UNITED STATES PATENT OFFICE

2,449,719

NOZZLE HOLDER

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Application October 17, 1946, Serial No. 703,902

5 Claims. (Cl. 248—80)

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The invention relates generally to devices for holding fire hose when in operation, and more particularly to a novel nozzle holder making it practicable for one man safely to handle fire hose discharging water under exceedingly high pressure.

The nozzle end of a fire hose when discharging water at high pressure is an exceedingly difficult and dangerous thing to handle. The back pressure created by the water exerts a powerful backward force, making it difficult to move the hose forwardly and causing the hose to whip about, so that in many cases serious injuries have been suffered by firemen, in some instances resulting in fatalities. In order to handle a high pressure nozzle, the services of as many as three firemen are ordinarily required, and even then the danger is not overcome.

Because of such conditions, some departments have strapped the nozzle end of a fire hose to a board having a rear spike attached thereto for digging into the ground, so as to assist the firemen in holding the hose in position, but such expedient is at best a make-shift arrangement, because the board is heavy and cumbersome to handle and to carry on fire apparatus, and is also difficult and awkward to attach the hose, thus requiring excessive time when every second is important.

Accordingly, it is an object of the present invention to provide a novel nozzle holder which greatly facilitates handling and advancing fire hose while it is discharging water under pressure.

Another object is to provide a novel nozzle holder which enables one man to handle a fire hose operating at high pressure.

A further object is to provide a novel and improved nozzle holder which may be set on the ground for self-supporting a hoze nozzle in a desired position while discharging water.

Another object is to provide a novel nozzle holder which is adjustable to elevate the hose nozzle or to swing it laterally.

Another object is to provide a novel nozzle holder which is adapted to direct a nozzle in a desired operating position when held by one or by two men, and which provides ready gripping handles for handling and advancing the hose under pressure.

A further object is to provide a novel and improved nozzle holder which digs itself into the ground under the pressure from the hose for providing additional support.

A still further object is to provide a novel nozzle holder which is easily folded into a small

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space for being transported on fire apparatus, and which is quickly and easily unfolded and attached to the hose at the scene of a fire.

These and other objects are accomplished by the parts, improvements, combinations and arrangements comprising the present invention, a preferred embodiment of which is shown by way of example in the accompanying drawing and described in detail in the attached specification; the constructions, combinations and sub-combinations comprising the present invention, and reasonable mechanical equivalents thereof obvious to those skilled in the art, being set forth in the appended claims.

In general terms, the nozzle holder comprising the present invention may be stated as including a longitudinal center bar and two spaced-apart pairs of arms hinged to the center bar, the arms being provided with caulks at their outer ends and the bar being provided with a rear spike, for providing a five-point support when unfolded, an arm pivotally connected at its rear end to an intermediate portion of the center bar for upward and lateral swinging movement of its front end, and a pair of jaws forming a hose support on the front end of said arm.

Referring to the drawings forming part hereof,

Figure 1 is a top plan view of the improved nozzle holder in unfolded or expanded position, with the hose holder jaws lowered;

Fig. 2 is a top plan view of the holder in completely folded position;

Fig. 3 is a transverse sectional view as on line 3—3, Fig. 1, showing the jaws in open position;

Fig. 4 is an enlarged fragmentary bottom plan view showing the connection of the front pair of arms with the center bar;

Fig. 5 is a side elevation of the holder in completely folded position, as in Fig. 2;

Fig. 6 is a side elevation of the holder in folded position and held in upwardly inclined position for handling a hose by one or two men; and

Fig. 7 is a side elevation of the holder in expanded position on the ground, with the hose holder raised for supporting the hose nozzle at a desired operating angle.

Similar numerals refer to similar parts throughout the several views of the drawings.

The novel nozzle holder preferably includes a longitudinal center bar 10 which is preferably square or rectangular in cross section and may be hollow as shown in Fig. 3 to save weight. At its rear end the bar 10 is preferably provided with a spike 11 which is directed rearwardly downward for digging into the ground when the bar

is horizontal as in Fig. 5 or held in an upwardly inclined position as in Fig. 6. The front end of the bar may have a ring 12 projecting therefrom for facilitating hanging the holder out of the way when not in use, and the underside of the front end of the bar may have a rearwardly directed hook 13 for hanging the holder on the rung of a ladder or other support when the holder is in use.

A pair of arms 14 is pivoted to the center bar 10 preferably adjacent to its front end, as at 15, for extending laterally at right angles to the bar 10 as shown in Fig. 1 or folding alongside the bar 10 as shown in Figs. 2 and 4. The arms 14 preferably have downturned sharp hardened steel caulks 16 at their outer ends for digging into the ground, and may be made of hollow tubing to obtain minimum weight. As shown, the inner ends of the arms 14 may be secured as by welding to the inside of U-shaped straps 17, the ends of which overlap and are pivotally mounted on the pivot bolt 15. As shown in Fig. 4 the straps 17 are connected by a spring 18 which yieldingly holds the arms 14 in the folded position of Figs. 2 and 4, and when the arms are unfolded to the position of Fig. 1, the spring moves over the center 15 so as to yieldingly hold the arms in the unfolded position.

A second pair of arms 19 is pivotally connected to an intermediate portion of the center bar 10 to a point spaced from the pivot 15, and as shown in Fig. 1, the arms may be pivoted at their inner ends to a disc 20 which is mounted on top of the center bar 10 by a bolt 21. The arms 19 have sharp hardened steel caulks 19*a* at their outer ends and are preferably made of hollow tubing the same as arms 14. The arms 19 have curved angles 22 pivoted at their rear ends to intermediate portions of the arms, as at 23, and the angles are pivoted at their front ends by pivots 25 to a sleeve member 24 which is slidable on the center bar.

The curved angles 22 are substantially quarter circles, so that they provide a substantially semi-circular track when the arms 19 are unfolded to extend laterally of the bar 10, as best shown in Fig. 1. A stop pin 26 is provided on the top surface of center bar 10 for limiting the forward movement of the sleeve 24 to stop the unfolding movement of the arms 19 when they are at right angles to the center bar 10.

The means for supporting the nozzle end of a hose on the nozzle holder preferably includes a U-shaped bracket 27 which is pivotally mounted on top of the disc 20 by the bolt 21 for swinging about the bolt 21 as a vertical pivot. To the upper ends of the U-shaped bracket are pivotally attached, as at 28, the rear ends of forwardly extending hose supporting legs 29, the front ends of which are secured as by welding to the upper ends of a lower substantially semi-circular jaw 30.

An upper jaw 31 is hinged at 32 to one end 30*a* of the lower jaw 30, for swinging open in the position of Fig. 3, to admit the hose, and other end of the jaw 31 has a notched tongue 33 which fits into a suitable socket on the opposite end 30*b* of the lower jaw 30. Means for securing the jaws in closed position is a spring pressed plunger 34 of well-known construction mounted on the lower jaw 30 and having an end normally engaging one of the notches in tongue 33 in its closed position. On the underside of the lower jaw 30 a downwardly open clevis 35 is preferably provided for engaging over the front end of the center bar 10 when the legs 29 and jaws 30 and 31 are folded with the legs 29 substantially parallel to the center bar 10 as shown in Figs. 2, 5 and 6. Means for clamping the clevis 35 to the center bar 10 may include a spring pressed plunger 36 of well-known construction mounted on the clevis 35 and adapted for engaging in a hole in the side of the bar, in a usual fashion.

The means for holding the legs 29 and jaws 30 and 31 in any desired upwardly inclined position when swung upwardly about the pivots 28 preferably includes a knee brace having the fixed horizontal member 37 and the movable member 38 hinged thereto at 39. The other end of the member 37 is secured, preferably by welding, to one leg of the bracket 27, and the outer end of the movable member 38 is pivoted at 40 to a split friction clamp 41 which is slidable on the adjacent leg 29. A handle 42 is screwed through the ends of the clamp 41, so that by tightening the handle 42 the clamp will grip the leg 29 to hold the same in any inclined position varying from the horizontal position of Fig. 5 through the position of Fig. 7 to a position wherein the legs 29 are substantially vertical or at right angles to the center bar 10.

The legs 29 as well as the members 37 and 38 of the knee brace are preferably made of tubing so as to obtain minimum weight of the holder, and thus enable it easily to be handled in transporting it from place to place on fire apparatus, and in attaching it to the nozzle end of the hose line and moving the hose line into a desired position.

In operation, the nozzle end of a fire hose may be inserted in the jaws 30 and 31 and the jaws clamped shut by the spring plunger 34. If it is desired to have the hose held in a particular operating position by the holder, the arms 14 and 19 are unfolded to be substantially right angles to the center bar, as shown in Fig. 1. The plunger 36 is then pulled out to release the clevis 35 and the jaws 30 and 31 raised to elevate the hose to the desired angle, at which point the handle 42 is screwed inwardly to tighten the clamp 41 around the arm 29. In such position, if the holder is laid flat on the ground, it will support the hose for discharging water, without being held by a fireman, as indicated in Fig. 7.

In this position, the hose may be swung to the right or left about the pivot 21, and for this purpose a foot 43 is provided on the underside of the fixed member 37 of the knee brace for sliding on top of the curved angles 22 as the hose nozzle swings laterally of the holder. When the hose line is to be reset to another location, two men, one on each side of the holder can grasp the arms 14 and 19 and carry the holder forward with the hose line under pressure, and when the holder is thrown down in a new location, it will immediately dig itself into the ground by means of the caulks 16 and 19*a* and the spike 11.

If the terrain is such that it is difficult to engage all four of the points 16 and 19*a* in the ground, the arms 19 can be folded alongside the center bar 10, so that the points 16 and the spike 11 will dig in to provide a three point support.

If the hose nozzle is to be constantly moved about by one or two men, the clevis 35 is left secured to the center bar and the hose positioned in the jaws 30 and 31. The holder is then raised to an inclined position such as shown in Fig. 6, with the spike 11 digging into the ground, and in this position the holder may be held by one man if desired, because the force of the back pressure

is resisted by the spike engaging the ground. To facilitate holding the holder in this position, one or both of the arms 14 may be unfolded or swung outwardly.

When the novel holder is folded and not in use, it is very compact and easily carried by one man. Moreover, it occupies very little carrying space on fire apparatus, which is an important feature because modern apparatus is required to carry much auxiliary equipment.

Thus, the improved nozzle holder is adapted for self-supporting a hose line in operation for adjustably directing the nozzle in various positions; for enabling one man to handle a fire hose operating at high pressure; and for being gripped at opposite sides by two men for advancing or relocating the nozzle during operation.

The embodiment of the present improved nozzle holder is illustrated and described herein by way of example, and the scope of the present invention is not limited to the exact details of construction of the various parts.

In the foregoing description, certain terms have been used for brevity, clearness and understanding; but no unnecessary limitations are to be implied therefrom beyond the requirements of the prior art, because such words are utilized for descriptive purposes herein and not for the purposes of limitation, and are intended to be broadly construed.

Having now described the features of the invention, the construction, arrangement and use of a preferred embodiment thereof, and the advantageous, new and useful results obtained by the improved construction, the new and useful devices, constructions and combinations, and reasonable mechanical equivalents thereof obvious to those skilled in the art, are set forth in the appended claims.

It is claimed:

1. Nozzle holder construction including a longitudinal center bar, a spike on the rear end of said center bar, a pair of arms hinged to said center bar adjacent its front end for folding alongside the bar and extending at right angles thereto, a hose supporting leg pivotally connected at its rear end to an intermediate portion of said center bar for swinging upward therefrom, jaw means on the front end of said leg for holding a hose, means detachably connecting said jaw means to the front end of said center bar, and means mounted on said center bar for holding said leg in upwardly adjusted position.

2. Nozzle holder construction including a longitudinal center bar, a spike on the rear end of said center bar, a pair of arms hinged to said center bar adjacent its front end for folding alongside the bar and extending at right angles thereto, a bracket pivoted on an intermediate portion of said center bar for swinging laterally about a vertical pivot, a hose supporting leg pivoted at its rear end on said bracket for swinging upwardly, jaw means on the front end of said leg for holding a hose, and a folding knee brace connected at its rear end to said bracket and having a clamp connection at its front end with said hose supporting leg for holding it in upwardly adjusted position.

3. Nozzle holder construction including a longitudinal center bar, a spike on the rear end of said center bar, a pair of arms hinged to said center bar adjacent its front end for folding alongside the bar and extending at right angles thereto, a bracket pivoted on an intermediate portion of said center bar for swinging laterally about a vertical pivot, a hose supporting leg pivoted at its rear end on said bracket for swinging upwardly, jaw means on the front end of said leg for holding a hose, means detachably connecting said jaw means to the front end of said center bar, and a folding knee brace connected at its rear end to said bracket and having a clamp connection at its front end with said hose supporting leg for holding it in upwardly adjusted position.

4. Nozzle construction including a longitudinal center bar, a spike on the rear end of said center bar, a pair of folding arms hinged to an intermediate portion of said bar for extending at right angles thereto, curved track members pivoted at their rear ends to intermediate portions of said folding arms and having a sliding connection at their front ends with said center bar, a hose supporting leg pivoted at its rear end to an intermediate portion of the center bar for lateral and upward swinging movement, jaw means on the front end of said leg for holding a hose, and means mounted on said center bar for holding the leg in upwardly raised position, said last means being slidably supported on said curved track members when the folding arms are extended.

5. Nozzle construction including a longitudinal center bar, a spike on the rear end of said center bar, a pair of folding arms hinged to an intermediate portion of said bar for extending at right angles thereto, curved track members pivoted at their rear ends to intermediate portions of said folding arms and having sliding connection at their front ends with said center bar, a bracket pivoted on an intermediate portion on said center bar for swinging laterally about a vertical pivot, a hose supporting leg pivoted at its rear end on said bracket for swinging upwardly therefrom, means on the front end of said leg for holding a hose, a rear brace member secured at its rear end to said bracket and extending forwardly therefrom, a front brace member pivoted at one end to the forward end of said rear member and having a sliding clamp connection at its other end with said hose supporting leg, a foot on said rear member slidably supported on said curved track members.

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Administrator of the Estate of Edward C. Rumsey, Deceased.

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