

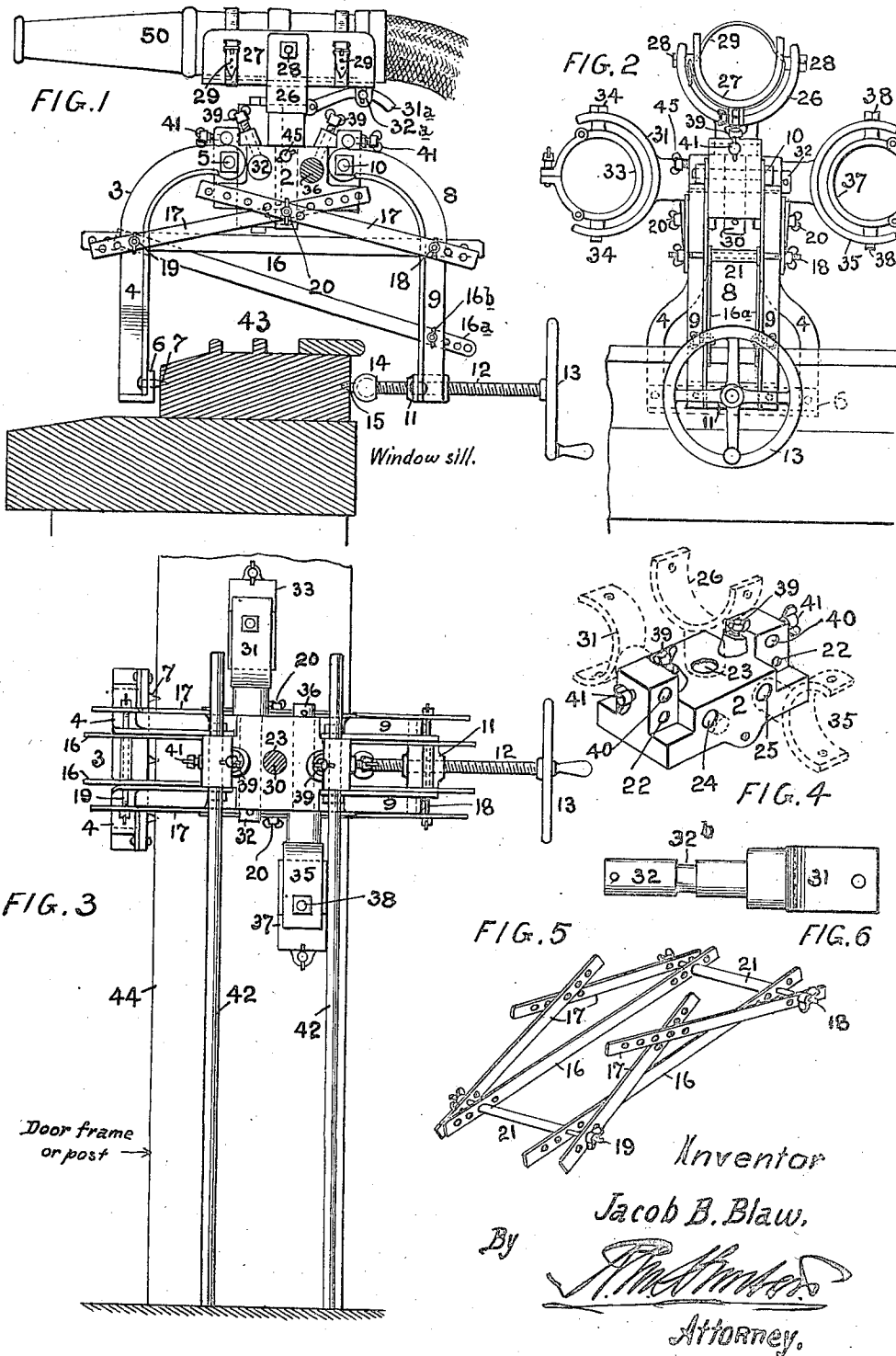
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ADJUSTABLE FIRE NOZZLE SUPPORT

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UNITED STATES PATENT OFFICE.

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ADJUSTABLE FIRE-NOZZLE SUPPORT.

Application filed February 18, 1922. Serial No. 537,456.

To all whom it may concern:

Be it known that I, JACOB B. BLAW, a citizen of the United States, and resident of Atlantic City, county of Atlantic, State of New Jersey, have invented an Improvement in Adjustable Fire-Nozzle Supports, of which the following is a specification.

The object of my invention is to provide an adjustable fire nozzle support which may be quickly and securely attached to the window sill or frame, a door frame, post or other convenient place of attachment and provided with adjustable supporting means to which the nozzle is clamped or secured and by which the direction of the stream from the nozzle may be varied as desired; and further, whereby a plurality of nozzles may be simultaneously supported and adjusted for directing a plurality of streams of water upon the fire so that they may be simultaneously directed upon one place or may be directed in widely divergent directions, as the character of the fire may dictate.

The object of my invention is further to provide an adjustable fire nozzle support of a character which, while permitting free adjustment of the nozzle during the throwing of the stream, will at the same time sustain all of the recoil or kick back, thereby relieving the fireman or operator from all undue strain and danger on this account and during said time permitting his energies to be exercised in the manipulation of the nozzle for proper direction of the stream under conditions of the highest efficiency with the minimum of danger.

My object is further to provide a fire nozzle supporting means which will permit the nozzle to be adjusted in all directions for properly directing the stream, and clamping it in desired adjustments and positions, whereby in case of great danger or intolerable atmospheric conditions, due to smoke or noxious fumes, the operator may temporarily leave the nozzle to seek safety or protection against the said conditions without interfering with the normal operation of the fire nozzle in properly directing the stream.

My object is also to provide an adjustable clamping means with a plurality of adjustable nozzle supports, whereby a single hose line may be siamesed into supplying water to the plurality of nozzles and thereby permitting a plurality of streams to be directed

with a minimum number of men to manipulate the nozzles.

With the above and other objects in view, the nature of which will be more fully understood from the description hereinafter, the invention consists in the novel construction of adjustable fire nozzle support, as hereinafter more fully described and defined in the claims.

Referring to the drawings: Fig. 1 is a side elevation of my improved fire nozzle support showing it in connection with a window sill (in section); Fig. 2 is a front elevation of my improved adjustable fire nozzle support; Fig. 3 is a top view of my improved fire nozzle support with the upper nozzle clamp removed and showing the device attached to the vertical frame of a door or post; Fig. 4 is a perspective view of the body casting to which the various parts of the device are adjustably secured; Fig. 5 is a perspective view of the several brace bars removed from the apparatus but retaining their relative positions; and Fig. 6 is a side view of one of the adjustable yokes for the nozzle clamps.

2 is the body frame, the shape of which will be best understood by reference to Fig. 4. This body frame is provided with a vertical hole 23 for receiving the journal pin 30 of the upper yoke 26, in which is pivoted the U-shaped nozzle clamp 27, and in which the nozzle 50 may be clamped by straps 29, as will be clearly understood by reference to Figs. 1 and 2. As shown, the U-shaped nozzle clamp 27 is pivoted on a transverse axis, as indicated at 28, so that the nozzle 50 may be oscillated in a vertical plane about the said transverse axis for directing the stream at different elevations or depressions. The adjustment of the nozzle clamp 27 may be fixed, if desired, by means of the link 31^a hinged at one end to the yoke 26 and adjustably clamped at 32^a to the nozzle clamp, as fully shown in Fig. 1.

The body part 2 is also provided with horizontal holes 24 and 25, respectively, at opposite sides of the vertical hole 23, said holes respectively supporting two additional clamping means, one of which comprises a yoke 31 having the journal pin 32 journaled in the hole 24, said yoke provided with a nozzle clamp 33 hinged to the yoke on a vertical axis indicated at 34, and the other of which comprises the yoke 35 having the pin 36 journaled in the hole 25 of the body and

said yoke provided with a nozzle clamp 37 pivoted to the yoke on a vertical axis at 38, said yokes 31 and 35 being respectively arranged at opposite sides of the body portion 2, and at a lower level than the first mentioned yoke 26. Furthermore, the yoke 26 is adjustable about a vertical axis, whereas the yokes 31 and 35 are adjustable about a horizontal axis. In all cases, however, the nozzle clamps, as well as the nozzles supported thereby, would have capacity for universal adjustment.

The yokes and their pins may be held in position upon the body part 2 in any convenient manner, either by transverse pins or preferably by the clamping screws 39 and 45, the former cooperating with the yokes 31 and 35, and the latter with the yoke 26, said clamping screws being used as set screws when desired to hold the yokes rigidly against oscillation; and preferably at all times engaging grooves in the journal pins of the said yokes, such as indicated at 32^b in Fig. 6, and whereby the yokes are held against disengagement with the body portion.

The body part 2 is supported upon two hinged frames 3 and 8, respectively joined to opposite ends of the body by transverse bolts 5 and 10. The frame 3 is formed by two downwardly extending bars 4, 4, connected at their lower ends by a transverse plate 6 having inwardly directed clamping spikes 7. The frame 8 is similarly composed of two bars 9, 9, connected at the bottom by a transverse frame 11 through which a clamping screw 12 is extended, the outer end of said screw being provided with a hand wheel 13 and the inner end provided with a socket head 14 having a gripping prong 15. The head 14 is connected with the end of the screw 12 in any suitable manner, whereby the latter may have freedom of rotation without rotating the head 14. To insure more stability in a transverse direction, the bars 4 of the frame 3 are bent to spread at the bottom so that the transverse plate 6 may be of considerable length and provide for a series of the prongs 7, whereas the bars 9 do not spread inasmuch as there is only a single prong 15 controlled by the adjusting screw 12. As these frame 3 and 8 are hinged to the body 2 by the transverse bolts 5 and 10, it is necessary that they be held in some manner to prevent them spreading apart or permitting an undesirable adjustment of the body upon them. A simple means for providing a rigid connection between the said frames 3 and 8 and the body 2 is shown and comprises the bars substantially as indicated in the drawing, Fig. 5. As seen from Figs. 1 and 5, the bracing bar structure comprises two horizontal bars 16 respectively connected at their opposite ends with the frames 3 and 8 by transverse bolts

19 and 18 having spacing tubes 21 to keep the bars apart, four oblique bars 17, two of which are joined to the bolt 18 and two to the bolt 19, said bars having their other ends crossing and bolted rigidly at 20 to the body frame 2; and also two bars 16^a, each connected at one end to the bolt 19 and at its other end to a transverse bolt 16^b which extends between the opposite members 9—9 of the frame 8 a considerable distance below the bolt 18. The bars 16^a sustain the recoil or kick-back during the passage of water under high pressure through the nozzle (Fig. 1). In this manner, the bracing bars 17, 16, 17, form a triangular structure and positively hold each of the frames 3 and 8 in rigid adjustment with respect to the body part 2. The bars 16 and 17, however, are provided with a plurality of holes which permit of varying their length intermediate of the bolts 18, 19 and 20, and consequently providing means for spreading the frames 3 and 8 relatively to each other at their lower ends, which give capacity to the clamping means for adjustment to larger or smaller objects in excess of what might be provided for by the screw 12. I do not restrict myself to any particular character of bracing between the frames 3 and 8 and the body frame 2; and it will be furthermore understood that in respect to capacity for adjustment, it would suffice for one of the frames 3 and 8 to be rigidly positioned with respect to the body 2 and have adjustable capacity with respect to the remaining frame, if so desired.

Fig. 1 indicates the adaptability of my improved nozzle supporting means attached to the window sill 43 in position to play the stream upon a building across the street or upon the same building at a distant place. In other cases, the device would be clamped to the window sill in the opposite direction so as to play the stream into the building to which the clamp is attached. In cases where it is not convenient to attach the device to a window sill, it may be clamped to a post or a door frame 44, as indicated in Fig. 3, and in this case it is desirable that an additional supporting rod or rods 42 shall be employed to sustain part of the weight due to the lateral overhang. To secure this result the rods 42 may be fitted to transverse holes 40 in the body casting 2 and clamped therein by clamping screws 41, all of which will be understood by reference to Figs. 3 and 4.

Further advantages of my improved nozzle supporting means, in addition to those already referred to, including the protection against recoil or kick-back when manipulating powerful streams of water and the provision for operating a plurality of nozzles by siamesing from a single hose, the apparatus may be utilized in those cases where

streams from several engines are siamesed into a single hose line to give a far more powerful stream both for carrying it through a greater distance and for obtaining greater force to break down obstruction when necessary, and utilize the same without undue strain upon the operators which has heretofore been necessary in holding a nozzle directing a stream of such force.

It will also be understood that my improved nozzle supporting means is adapted for use in connection with fire trucks or on a ladder truck in front of a burning structure to enable a plurality of streams to be directed into a building where immediate attachment to the building is not possible. Furthermore, the device permits the throwing of a plurality of streams, whereby a "water curtain" can be easily formed to prevent spreading of conflagrations.

The parts 2, 3, 8, and the bracing structure comprising the bars 16 and 17 and 16^a, when connected together as described in the drawing, constitute a rigid frame structure for the adjustable nozzle supporting devices which are secured thereto, the parts 3 and 8 forming opposite side or leg portions of said structure.

It will now be apparent that I have devised a novel and useful construction which embodies the features of advantage enumerated as desirable, and while I have in the present instance shown and described the preferred embodiment thereof which has been found in practice to give satisfactory and reliable results, it is to be understood that I do not restrict myself to the details, as the same are susceptible of modification in various particulars without departing from the spirit or scope of the invention.

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

1. In a device of the character stated, a body part having adjustable clamping means whereby it may be detachably clamped in position upon a window sill, door frame, or other object, combined with a plurality of adjustable nozzle supporting means adapted to be used simultaneously, said supporting means being separately pivoted to the body part with capacity for being directed at different angles, whereby separate nozzles may be adjusted to concentrate the streams upon one spot or upon different portions of the conflagration.

2. The invention according to claim 1, wherein further, there is provided means for

clamping the plurality of nozzle supporting means in rigid positions of adjustment upon the body part.

3. The invention according to claim 1, wherein a plurality of the nozzle supporting means are respectively adjustably pivoted to the body part at different angles.

4. The invention according to claim 1, in which a portion of the nozzle supporting means is pivoted to the body on a vertical axis and another portion of said nozzle supporting means is pivoted to the body on a horizontal axis.

5. In a device of the character stated, a body part provided with adjustable clamping means whereby it may be detachably clamped to a window sill, post, door frame or other object, combined with a nozzle support pivoted to the body whereby it may be oscillated in one plane, said support provided with a clamp for positively holding the nozzle, said clamp pivoted to the support for oscillation thereon in a plane at right angles to the plane of oscillation of the support, and a supporting rod adjustably fitting through the body and clamped thereto for sustaining the weight of the body when it overhangs as when being clamped to an upright post or door frame.

6. A device of the character stated, comprising a body part having pivoted thereto a fire nozzle support and clamping means for supporting the body part and attaching it to the window sill, door frame, or other object, said means comprising two frames respectively hinged to the body part, one of said frames provided with a gripping jaw at its free end and the other of said frames provided with an adjustable screw terminating in a gripping end, and bracing means between the said frames and the body part.

7. The invention according to claim 8, wherein the bracing means between the body part and the frames is adjustable whereby said frames may be rigidly positioned with respect to each other and the body part to provide a greater or less gap between their free ends.

8. The invention according to claim 9, wherein the bracing means comprise horizontal bars connecting the two hinged frames and oblique bracing bars connected to the respective hinged frames and also to the body part.

In testimony of which invention, I hereunto set my hand.

JACOB B. BLAW.