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J. B. BLAW
FIRE APPARATUS

1,775,846

Filed June 7, 1924

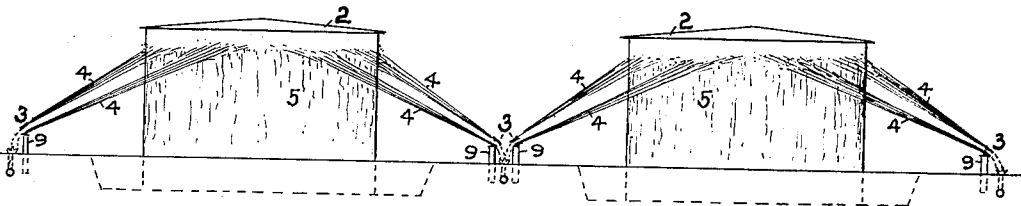


FIG. 1

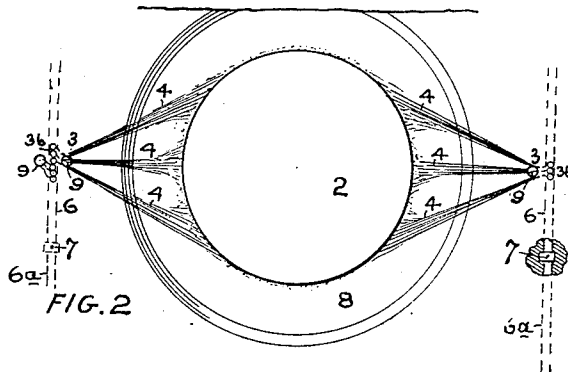


FIG. 2

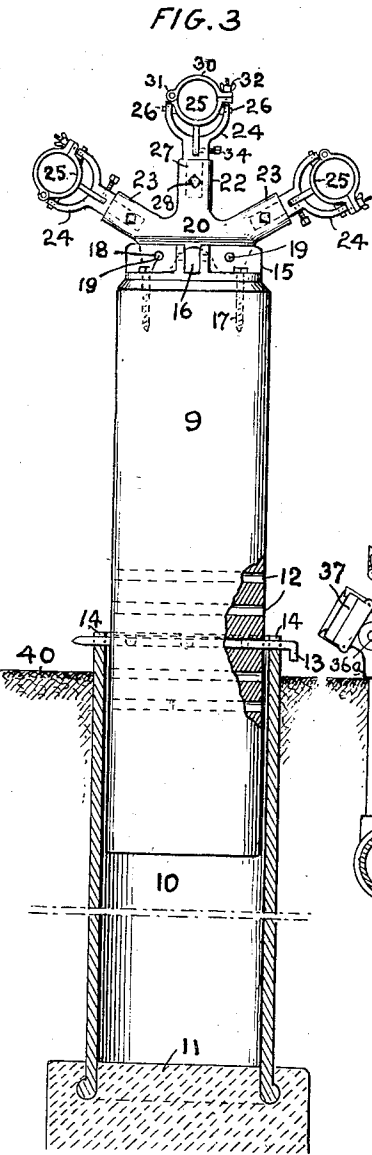


FIG. 3

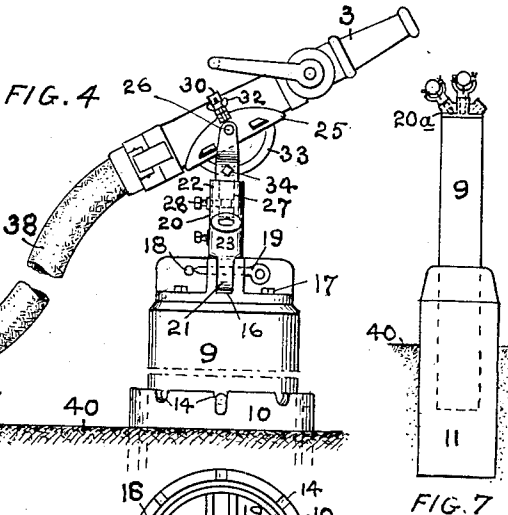


FIG. 4

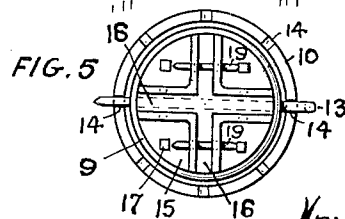


FIG. 5

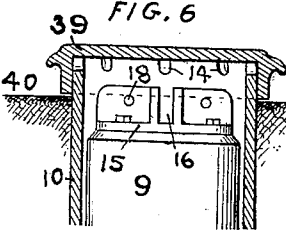


FIG. 6

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FIRE APPARATUS

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The object of my invention is to provide apparatus which may be employed in directing a plurality of streams of water upon oil tanks or buildings and which may enable the streams to be definitely directed at any angle desired and in any relation with respect to each other that may be found effective or desirable and be maintained in operation without the necessity of the attendance of firemen. The result of an apparatus of this character not only permits a large number of water streams to be directed upon the buildings or tanks with the employment of a minimum number of firemen, but also enables the firemen to be released for other duties after setting the nozzles in proper positions for insuring the desired directions of the streams.

My object is further to provide an apparatus in which a portion is permanently positioned adjacent to the tanks or buildings to be protected and to be employed in association with nozzle supporting and adjusting means of a portable nature which may be transferred from place to place in connection with the permanent equipment aforesaid, so that the streams may be directed upon those particular portions of the tanks or buildings which may need attention.

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 fire apparatus, as hereinafter more fully described and defined in the claims.

Referring to the drawings: Fig. 1 is a side elevation illustrating two oil tanks, such as employed for storage, with my improved fire apparatus shown in action; Fig. 2 is a plan view of a portion of Fig. 1; Fig. 3 is an elevation with part in section of one of my improved pedestals and nozzle supporting and directing means; Fig. 4 is an elevation showing the same with a nozzle clamped in position and also in association with a source of water supply; Fig. 5 is a plan view of the supporting pedestal for the nozzle clamps, with the latter removed; Fig. 6 is a sectional view with the pedestal lowered into the casing and the latter closed with a cover; and

Fig. 7 is an elevation of a simpler form of pedestal than shown in Fig. 3.

In the general carrying out of the invention, pedestals are positioned about the tanks or buildings to be protected against fire at convenient positions from which streams of water may be directed to accomplish the most good and upon which pedestals portable nozzle clamps, with capacity for adjustment, may be quickly positioned or detached, these clamps ordinarily being a part of the fire department equipment and adapted to be positioned upon the pedestal supports located as a permanent part of the tank or building equipment. Where the pedestals are permanent fixtures extending upward from the ground, the nozzles supported thereby are supplied with water from a water main or mains buried in the ground and having upwardly extending outlets to which short hose sections may be detachably clamped for supplying the adjustable nozzles with water.

With the above explanation, the invention as applied to protecting oil storage tanks, such as shown in Figs. 1 and 2, will be better understood, and the same general understanding will apply to the mode of operation and as to the details of the equipment in respect to its use for the protection of buildings or other objects.

Referring to Figs. 1 and 2: The tanks are represented at 2 and may be considered as of the usual storage tank types built up in a surrounding reservoir 8. At a distance from these tanks and on opposite sides are arranged pedestals 9 upon which nozzles 3 are secured, said nozzles receiving water from mains 6 having upwardly extending outlets 36 and control valves 7. Normally, the underground pipes 6 may be free from water, but in case of fire the water pressure is turned on to them, as may be desired to meet the requirements according to the location of the conflagration. In Fig. 2, it will be seen that there are three streams of water 4 being projected upon opposite sides of the tank, so that there are six streams altogether. These are directed by the nozzles 3 (Fig. 4) and are disposed at such angles to each other as to project the water approximately upon all

sides of the tank. The streams are inclined upward to near the top of the tank and the water thus projected upon the surface of the metal of the tank runs downward, as an enclosing sheet, and will be collected in the reservoir 8 surrounding the tank and to that extent add further cooling effect to the tank and its contents, should the latter be on fire. The nozzles 3 are adjustably supported upon the pedestals and connected with the main 6, substantially in the manner shown in detail in Figs. 3 and 4.

In the case of burning oil in storage tanks, the practice is to smother the fire, but at the same time keep the shell of the tank as cool as possible until the fire has been smothered out. In utilizing my improvements for surrounding the tank shell with a water film, I insure the proper direction of the streams by reason of the fact that the plurality of nozzles may be adjusted in definite positions and locked thereat so as to maintain the streams continuously without requiring any further attendance on the part of the firemen. It will be understood that when the atmosphere surrounding the immediate fire is of high temperature, firemen cannot remain too close for any great length of time and under those circumstances, it is difficult to handle the hose lines effectively. By my improvement, however, the nozzles may be quickly positioned and adjusted and water supplied to them, and thereafter, the firemen may move to a cooler and safer distance, leaving the nozzles to continue their work of directing the streams. It will be seen from this that the same firemen who set the nozzles for directing the streams upon the tank or burning building may quickly install and adjust a second and third set of similar nozzles, so that a relatively few firemen may within a few minutes provide a dozen or more effective streams upon the burning objects with efficient results and with relatively little danger to the firemen themselves.

Referring to the details illustrated in Figs. 3, 4 and 5: 9 is the pedestal and is extensible vertically in respect to an iron tubular casing 10 which is embedded at the bottom in a concrete block 11, the depth of the casing below the ground level 40 being somewhat greater than the length of the pedestal so that the latter may be lowered and completely shielded when not in use, as indicated in Fig. 6. 39 illustrates a cover which fits over the projecting end of the tubular casing 10, thereby guarding the casing from the entrance of water. The pedestal 9 may be of wood and provided with a series of transverse apertures 12 through which a rod 13 may be passed, the ends of said rod resting in notched portions 14 on the upper ends of the tubular casing 10. In this manner, the pedestal 9 may be lifted to any height desired for use. At the upper end of the pedestal 9 is secured an adapter

plate 15 bolted in position by lag screws 17 and having upwardly projecting flanges to provide crossing slotted portions 16, said flanges provided with transverse apertures 18 through which pins 19 may be arranged when attaching the nozzle carrying head 20.

The nozzle carrying head 20 is provided with an upright hub 22 and oppositely directed oblique hubs 23, the latter arranged at somewhat lower elevation than the middle hub. The lower part of the head 20 is provided with downwardly extending flange portions 21 which fit the slots 16 and are secured therein by means of the transverse pins 19. In this manner, the head 20 is quickly secured to the adapter 15 and may be set in the position shown in Fig. 3, or in the position shown in Fig. 4, the latter being at right angles to the position shown in Fig. 3, this difference in adjustment being permitted by reason of the fact that the two slotted portions 16 are at right angles to each other. Adjustably fitted to each one of the hubs 22 and 23 are arranged suitable fire nozzle clamping and supporting means, the construction of which will be clearly understood from Figs. 3 and 4. As all of these nozzle clamping and supporting means are the same, it will suffice to describe one of them in detail.

24 is a yoke having a shank 27 fitting into and journaled in the hub 22 (or other hubs 23) and may be clamped therein, after adjustment, by the clamping screw 28. The hose nozzle holder 25 is hinged at 26 on a transverse axis, said axis being at right angles to the axis of the shank 27 of the yoke, thereby giving to the nozzle holder capacity for a universal adjustment with respect to the pedestal and ground. The nozzle support is provided with a curved nozzle clamp 30 hinged on one end 31 to the support and at the other end adapted to be drawn down and maintained in clamping position by hinged bolt and wing nut 32. By this means, the fire nozzle 3 may be clamped in position upon the support 25 and through it made universally adjustable. The nozzle support 25 is provided with an arc-shaped clamping member 33 which is movable in the yoke and clamped therein by a set screw 34. In this manner, the fire hose nozzle is supported upon the yoke 24 and adjustable sidewise about the axis of the journal shank 27 thereof and may also be adjustable about a transverse axis coincident with the pivots 26. This mode of support permits the nozzle to be adjusted to any lateral or vertical angle which may be found desirable. The two hubs 23 are similarly provided with adjustable fire nozzle supports, thereby giving to each nozzle capacity for independent universal adjustment; so that the three fire nozzles 3 may be independently adjusted to provide relative adjustment in the positions of the water streams 4 from said nozzles. In this

manner, the streams may be concentrated where a great quantity of water is required, or spread apart when an extended surface is to be subjected to a lesser volume of water per unit of area.

It will be seen that as the middle hub 22 is higher than the hubs 23, the adjustable nozzle supporting means and nozzle carried thereby, may have a free opportunity for adjustment over the other nozzles and their supports.

As shown in Fig. 4, the fire nozzle 3 is supplied with water under pressure by the short hose section 38, coupled at one end to the nozzle and at the other end to an outlet 37 on the head 36 close to the ground in the vicinity of the pedestal and connecting by a downward pipe section 35 with the underground water main 6. As shown, the head 36 has three outlets 37, namely, one for each hose section respectively, coupled with each of the three fire nozzles 3, one such connection only being shown for purpose of avoiding confusion. It will be understood that any of the nozzles 3 may be supplied with water directly from the fire engine and I, therefore, do not confine myself to any particular source of supply.

In cases where capacity may be desired to permit of the nozzle supporting head 20 to be adjusted about a vertical axis to shift the plurality of streams to different buildings or parts of one building, this may be accomplished by rotating the pedestal 9 upon the tubular casing 10, and adapting the rod 13 to others of the notches 14, there being eight of such positions of adjustment shown. It is manifest, that this turn-table principle of construction may be provided in any suitable manner, that shown being by way of example only. In cases where pedestals permanently above the ground are not objectionable, they may be made as shown in Fig. 7, wherein the wooden pedestal 9 is built into a concrete base largely embedded in the ground and projecting to an extent sufficient to prevent rotting of the wood by contact with moist earth. It is manifest that the pedestals may be made of metal, if so desired.

In respect to the fire nozzle supports, I have shown the specific construction which I have found effective in practice for definitely holding the nozzle and for providing universal adjustment thereof, but I do not restrict myself to the details shown as these nozzle clamps and supports may be made in any other suitable manner; therefore, what I have illustrated, may be taken by way of example only.

While I have shown the body 20 adapted for supporting three nozzle clamps, I do not limit my invention in this respect, as one or more such nozzle supporting and adjusting means may be used at any one time.

I have particularly referred to the possi-

bility of supply the nozzles with water from underground mains having outlets above the walk level 40 (Fig. 4), so that the fire engines may be located at a convenient distance for delivering into such mains and obviating objectionable use of a multiplicity of hose lines, but it is to be kept in mind that the usual hose lines from the fire engines or high pressure fire plugs may be employed for direct supply to the nozzles supported on the pedestals where found convenient. In fact, in many cases, water supply to the nozzles will be obtained in this manner. It will also be understood that where underground water mains 6 are employed, they may connect directly with the high pressure mains by extensions 6^a (Fig. 2).

While I have illustrated the pedestal construction in Figs. 3 and 7 as being upright solid body portions 9 conveniently made of wood, it will be understood that these pedestal portions whether in fixed form or vertically extensible may be constructed of open metal work, such as made of angle or channel irons, but which directly or indirectly are fixedly positioned as to location with respect to the objects to be protected against destruction by fire.

It will also be understood that where mains are provided with the plurality of outlets 37 for supplying water streams to a plurality of nozzles by the employment of intermediary flexible sections of hose 38, each of said outlets 37 may be provided with an independent shut-off valve such as indicated at 36^a (Fig. 4), so that any nozzle may be detached or applied at will without interfering with the other nozzles in connection with the main.

From the foregoing, it will be understood that my invention is more particularly designed for fighting fires in oil works, refineries, lumber yards, ware-houses, etc., where congestion and hazards are encountered, endangering the lives of firemen; and will be useful by enabling the placing of fire nozzles and hose lines in advantageous positions with rapidity around burning tanks or buildings of all descriptions, especially where there are explosives and materials of a very combustible nature at or adjacent to the place of conflagration. My invention is further advantageous for quick handling of heavy or high pressure hose lines wherein great effort is required to handle the same under ordinary conditions. Aside from the advantages thus secured, the invention eliminates the necessity of firemen remaining constantly within zones of temperature which are unbearable, while, at the same time, insuring better service automatically than could be secured by the constant attendance of firemen in such dangerous positions.

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
 5 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
 10 the spirit or scope of the invention.

No claim is made in this application to the method or arrangement of the posts in fixed positions about the object to be protected against fire and in conjunction with
 15 which adjustable fire nozzle supports are provided for directing streams from positions corresponding to the posts or pedestals upon the said object, as said subject matter is removed from this case to form subject
 20 matter of a divisional application.

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

1. In a fire apparatus, the combination of
 25 an upright pedestal fixedly positioned in the ground and constituting a support at a distance above the ground level, an adapter fixedly secured to the upper end of the pedestal and a portable head detachably connected
 30 with the adapter, the connection between the said head and the adapter comprising inter-engaging complimentary parts one on the adapter and the other on the head for permitting a plurality of definite horizontal ad-
 35 justments of the head relatively to the post and adapter, and a nozzle holding clamp pivoted to the head and adjustable thereon about an upright axis whereby the stream of water from the nozzle may be thrown in various
 40 directions about the pedestal and the nozzle clamp and attached head may be disconnected as a unit from the adapter for portable use upon similar pedestals otherwise positioned.

2. The invention according to claim 1, wherein the detachable connection between the adapter and head consists of a substantially horizontal transverse slotted recess in one of the parts and a corresponding substantially horizontal web in the other of the
 50 parts, and a removable pin for detachably locking the parts together.

3. In a fire apparatus, the combination of a fixed upright pedestal constituting a support extending above the ground level, a portable
 55 head at the top of the pedestal and detachably connected therewith, said head arranged for definite horizontal positions of adjustment upon the pedestal and provided with an adjustable nozzle holding clamp whereby
 60 the nozzle may be independently adjusted relatively to the head for directing the stream of water, and wherein further, the top of the pedestal is provided with an adapter formed with crossing transverse recesses at 90° to
 65 each other and the head is provided with a

downwardly extending web adapted to fit the recesses selectively in either of two positions at approximately 90° apart, and detachable transverse parts are provided for locking the web to the recessed portions.

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

JACOB B. BLAW.