Dec. 18, 1962 D. A. SCHULER 3,069,100

FIRE FIGHTING APPARATUS

Filed Dec. 14, 1959 2 Sheets-Sheet 1

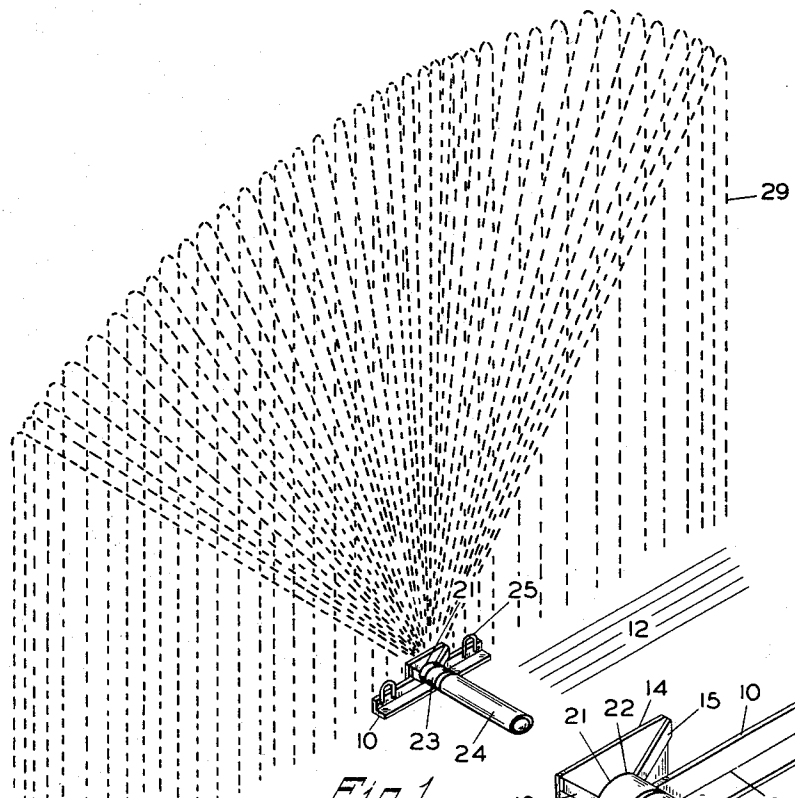

Fig. 1

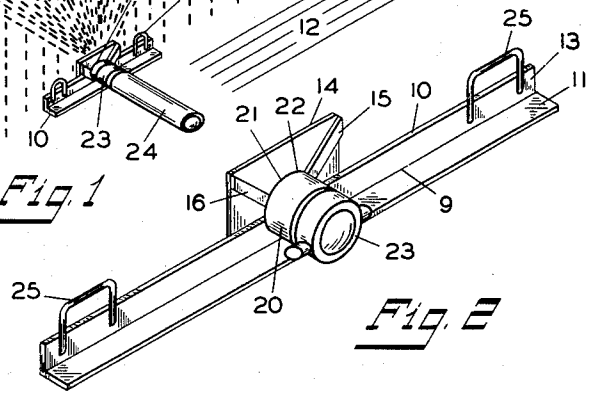

Fig. 2

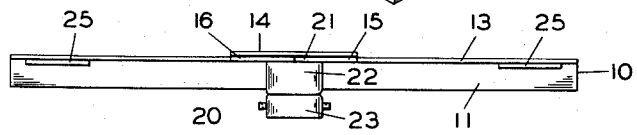

Fig. 3

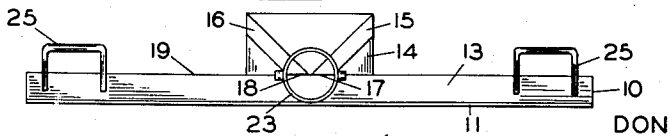

Fig. 4

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FIRE FIGHTING APPARATUS

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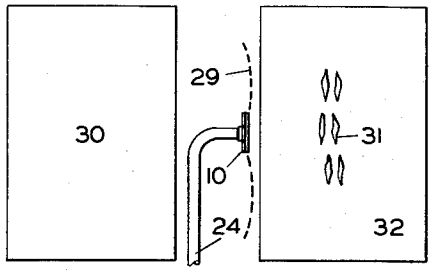

Fig. 5

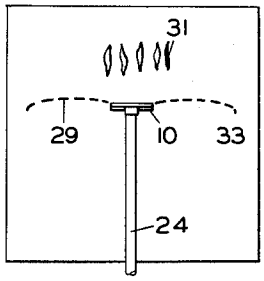

Fig. 6

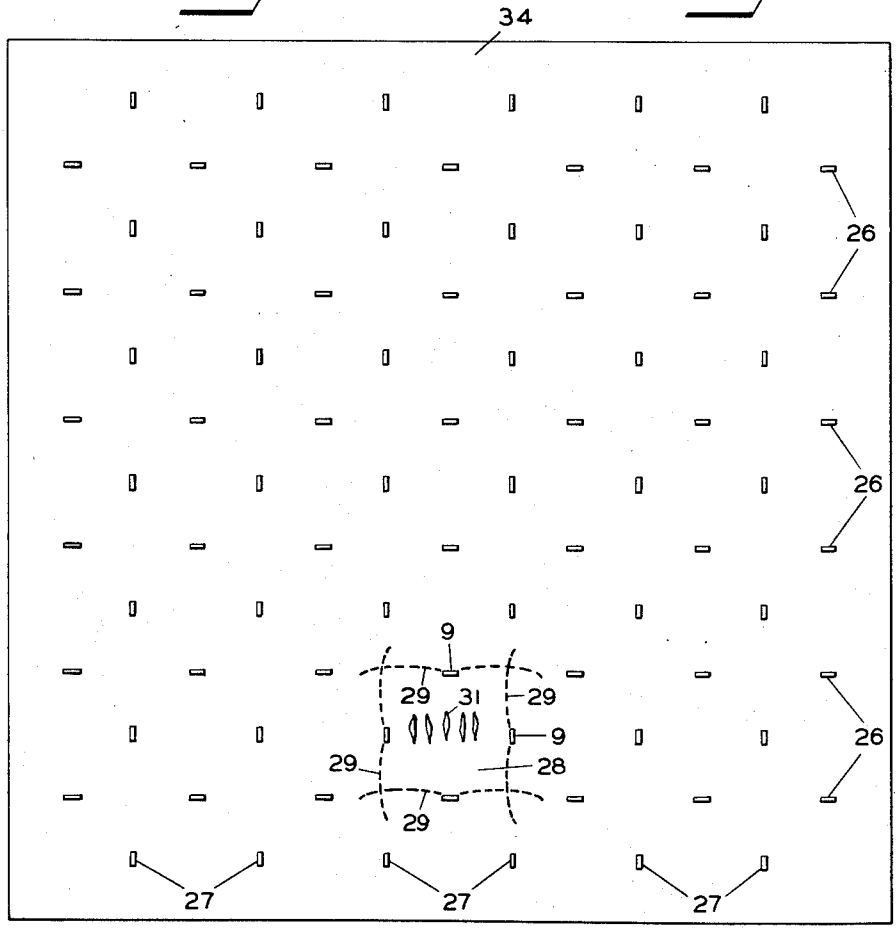

Fig. 7

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3,069,100
FIRE FIGHTING APPARATUS

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1 Claim. (Cl. 239—522)

This invention relates to fire fighting apparatus, and in particular relates to devices and procedures for establishing water walls to prevent the spread of fires.

One of the principal concerns of fire-fighters is to prevent the spread of a fire to a nearby building, or to another portion of a building that is burning. Often as much or more fire-fighting equipment and manpower is used to prevent the spread of the fire to other buildings, or other areas of the same building, as is used in extinguishing the initial fire. Thus, under present practices, it is common to find a number of hoses spraying water on nearby buildings to keep them wet and less ignitable.

It is an object of my invention to produce apparatus which will provide a wall of water practically to eliminate the spread of fire from one building to another, and to prevent spreading of fire within the same building.

An additional object of my invention is to produce fire-fighting apparatus which is easily portable, both when in use and when not in use.

Another object of my invention is to produce fire-fighting apparatus which is self-supporting and reduces the number of men and the amount of equipment required for the same protection under present practices.

A further object of my invention is to produce permanently installed fire-fighting apparatus for use in industrial plants warehouses or other relatively large buildings.

Further objects and advantages will become apparent from the following description and the drawings, wherein:

FIG. 1 is a perspective view of my invention in a porable form illustrating the water wall that is formed thereby.

FIG. 2 is a perspective view of my invention without the hose connection and water.

FIG. 3 is a top plan view of my invention.

FIG. 4 is a rear plan view of my invention.

FIG. 5 is a top plan view of my invention illustrating its use in preventing the spread of a fire from one structure to another.

FIG. 6 is a top plan view of my invention illustrating its use in preventing the spread of a fire to other areas of the building in which the fire has started.

FIG. 7 is a schematic view of my invention illustrating a permanent installation of a system for preventing the spread of fire in a factory, warehouse or similar structure.

In the drawing, numeral 9 indicates the water wall device in its entirety, with an angle iron 10 having a flat side or base 11 resting on the ground or floor 12 and the other side member 13 in vertical position. Spray plate 14 having strips 15 and 16 of substantially the same thickness as side member 13, see FIG. 3, welded thereto to form a V, whereby the angle at the vertex is approximately 90°. While some variation of this angle may be made I have found that a 90° angle for strips 15 and 16 provides for an effective and efficient spread of the water in the formation of a water wall. Such strips are of approximately the same thickness as side 13 of angle iron 10 and their lower edges 17 and 18 terminate at and are welded to the upper edge 19 of side 13 as shown in FIG. 4.

A conventional hose coupling 20 is welded to side 13 of angle iron 10 and to strips 15 and 16, so that the only escape for water entering coupling 20 is through slot 21 formed by strips 15 and 16, spray plate 14, and the upper portion 22 of coupling 20. Coupling 20 has the usual threaded member 23 for ready connection to hose 24.

Handles 25 may be secured to angle iron 10 for carrying or moving the unit as desired.

In the drawings, spray plate 14 is shown attached to the outside of side 13. Spray plate 14 may also be welded to the inside of side 13, so long as water passing through coupling 20 is forced between strips 15 and 16 and through slot 21.

FIG. 7 is illustrative of a permanent installation of such devices 9 in an industrial plant, warehouse or other building. Parallel rows 26 of device 9 may be installed into the floor of the building in a manner to send up a wall of water 29, the water from each such device overlapping that from the next adjacent device. Other rows 27 of the device may be installed into the floor to provide a wall of water 29 substantially perpendicular to the wall of water of rows 26. Conventional automatic or manual controls may be used for turning on the water, either for the entire building or for specified areas or "blocks" 28 within the building.

In operation, fire hose 24 extending from the fire engine pumper (not shown) is connected to coupling 23. The pumper valve is opened forcing water or other fire extinguishing liquid 29 through hose 24 and through slot 21 of water wall device 9. The water sprays upward and outward in fan-shape fashion as shown in FIG. 1 by reason of the angle of the junction of strips 15 and 16. As the water passes upward under pressure through slot 21 a force is exerted downwardly against angle iron 10 so as to maintain the water wall device 9 in substantially stationary upright position. The fire normally cannot penetrate the wall of water created by the rise and fall of the water. The water drops to the ground or floor, wetting the same so as to prevent burning of the floor or foliage on the ground. The radius of the water wall may be controlled by the amount of water pressure, the hose size, the orifice size of the coupling 20 and the size of slot 21. I have found that a standard size 2½ inch diameter hose coupling with 80 to 100 pounds of water pressure and a slot 21 having substantially parallel sides about 3/16 inch apart produces a satisfactory water wall for outdoor use. Under such conditions the water wall extends as high as about 45 feet above the device 9 and approximately 50 feet on each side of the device.

FIG. 5 illustrates the use of my invention in protecting a nearby building 30 from spread of fire 31 in a building 32, by placing water wall 29 between the buildings. FIG. 6 shows the use of my invention to prevent the fire in a room 33 from spreading to other sections of the room by placing water wall 29 between the fire 31 and other parts of the room. As stated, FIG. 7 demonstrates installation of a permanent system for protecting a factory, warehouse or other building 34 by isolating the fire 31 to a small section or "block" 28 of the room by placing a water wall 29 on all sides of the fire, and thereby preventing its spread. As mentioned the spray keeps any inflammable portion of the flooring wet where the water drops so that the fire cannot readily spread by burning the floor surface.

It is to be understood that the present invention is not confined to the specific form or method herein illustrated and described, but the principles thereof may be embodied in various modifications within the scope of the following claim.

I claim:

Apparatus for preventing the spread of fires comprising a substantially flat base, a side member extending vertically from said base, a substantially flat spray plate secured to said side member and extending upwardly therefrom, a flat V-shaped member of substantially the same thickness as said side member secured to the face of said spray plate and having arms, the arms of said V-shaped member extending upwardly from said side mem-

ber and forming an angle of substantially 90°, and a hose coupling having one end secured to said side member and said V-shaped member so as to form an arcuate slot between said spray plate and said hose coupling, said spray plate and said V-shaped member extending substantially beyond said slot.

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