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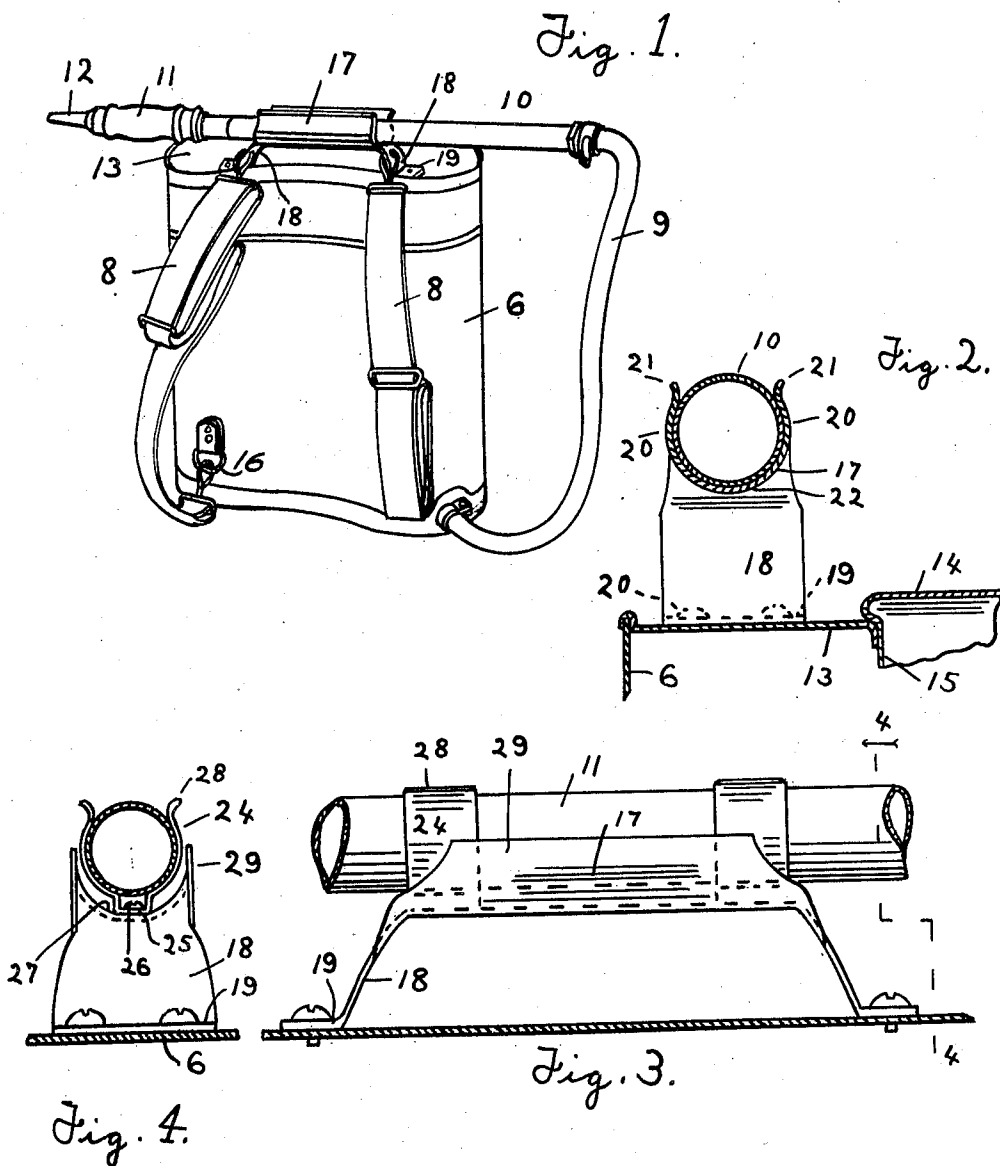
M. H. SMITH

1,869,869

PORTABLE FIRE EXTINGUISHER AND SPRAYER

Filed June 9, 1931

2 Sheets-Sheet 1



INVENTOR

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BY Martin & Rendell

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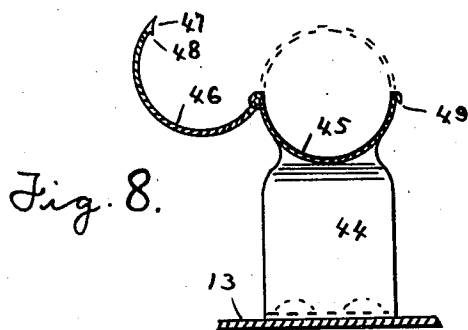
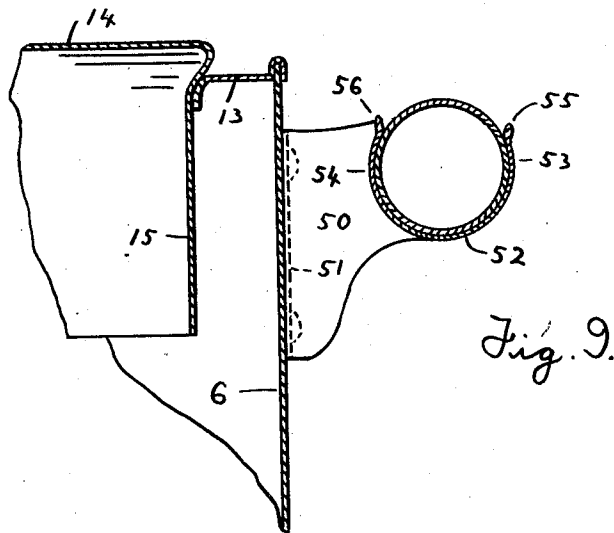
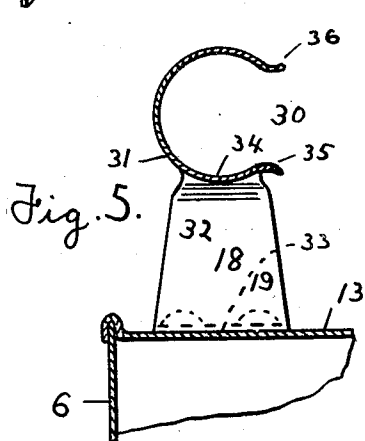
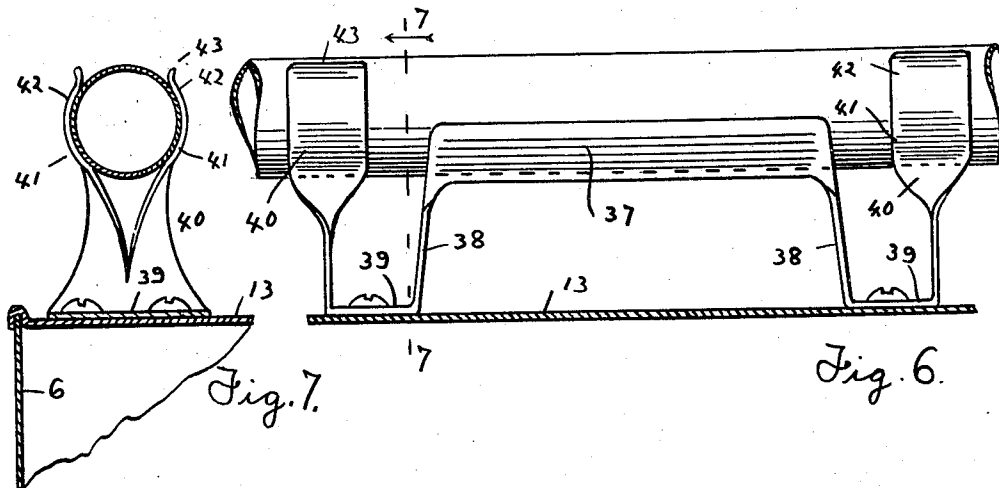
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UNITED STATES PATENT OFFICE

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PORTABLE FIRE EXTINGUISHER AND SPRAYER

Application filed June 9, 1931. Serial No. 543,139.

My present invention relates to portable fire extinguishers and sprayers of the type wherein a hand-operated cylindrical force pump is connected by a flexible tube to the tank carrying the water or other liquid.

The purpose of the invention is to provide a new and improved form of portable fire extinguisher and sprayer and particularly one which is more effective in use and more readily carried and also more readily prepared for being carried or for being placed into operation.

A further purpose is to provide in an article of the class described a handle spaced from but secured to the top or upper part of the tank for readily carrying the tank by hand when it is not desired to carry it upon the back by the straps provided for that purpose and also to have said handle either form itself the direct means for detachably holding the pump or support means for so detachably holding the pump more or less closely within the handle.

A further object of my invention is to combine with such a fire extinguisher and sprayer simple means for forming and supporting a handle upon the top or upper part of the tank and in the preferred and more simple form to have said handle in the form of an open-topped circular channel slightly more than half of a circle and with the up-standing walls of said channel resilient so that the cylindrical body of the pump may be readily forced into the handle and held therein securely but quickly detached therefrom when desired.

A still further purpose is to provide an apparatus of the class described (preferably formed of one piece of sheet metal) the downwardly extending legs of which not only support the combined handle and pump holder, but also provide means for connecting to the tank the shoulder straps and also if desired the chain extending to the cap of the tank by having the hooks of said shoulder straps and the end of said chain attached to the legs of said bracket.

Further purposes and advantages of the invention will appear from the specification and claims herein.

Fig. 1 is a perspective view of a sprayer or fire fighting apparatus embodying this invention with the pump placed in the combined handle and pump holder.

Fig. 2 is a transverse vertical sectional view on an enlarged scale through the combined handle and pump holder, the cylinder of the pump and the adjacent part of the top of the tank.

Fig. 3 is a side elevation of a modified form of handle and pump holder and Fig. 4 is a vertical sectional view on line 4—4 of Fig. 3. Fig. 5 is a vertical transverse section through a modified form of combined handle and pump holder. Fig. 6 is a side elevation of another form of combined handle and pump holder and Fig. 7 is a vertical sectional view on line 7—7 of Fig. 6.

Fig. 8 is a vertical transverse sectional view through another embodiment of my invention.

Fig. 9 is a vertical sectional view of another form.

Referring to the drawings it will be seen that the sprayer or fire extinguisher illustrated as embodying this invention comprises a metal tank 6 approximating in size and simulating in shape a knapsack and having a concave forward side so as to be readily carried upon the back of a person by means of a pair of shoulder straps 8. Near the bottom of the tank on one narrow or rounding side of the tank and preferably on the side of the tank that will be at the left of the user when the tank is upon the user's shoulder, there is attached to the tank one end of the flexible tube or hose 9. The other end of this hose is attached to one end of the body of the cylindrical pump 10. This cylindrical body forms the means for the user holding the pump in the hand when the pump is being used. From the other end of the pump projects the operating handle 11 and therebeyond is the nozzle 12. Within the cylindrical body or barrel of the pump are located the plunger and other internal parts of the pump which are not material to this invention and accordingly not described or illustrated.

In the top 13 of the tank there is provided a suitable filling aperture ordinarily closed

by the removable cap or cover 14 which is usually removably held in place by said cap having a downwardly extending flange 15 at its edge to frictionally engage the adjacent part of the top 13.

When a fire extinguisher or sprayer of this type is being carried a considerable distance or being used for some time, it will be placed upon the person's back and held thereon by means of the straps going over the shoulders of a person and back underneath his arms to the lower fastening rings 16 near the bottom of the tank towards the opposite narrow sides thereof. In a good many situations, however, the tank is to be carried too short a distance to warrant placing the tank in regular form upon the person's shoulders and the straps heretofore have formed a very awkward means of carrying the tank. The tank is obviously too bulky and awkward to be carried by one hand or in one arm. Accordingly I have provided upon the top of the tank a bracket member which provides a handle 17 conveniently spaced from the top of the tank by legs 18 at the opposite ends of the handle going down to the top of the tank with the lower end of said legs preferably provided with feet 19 attached to the top of the tank by rivets or screws 20.

Referring first to the form of the invention shown in Figs. 1 and 2, it will be seen that a single piece of sheet metal may be conveniently made and shaped so as to form the handle 17, the legs 18 and feet 19 and also so as to allow said handle to also form the pump holder. This is done by forming the handle as an open-topped channel with the opposite sides 20 thereof sufficiently resilient so that they may be sprung apart slightly by forcing the pump bodily down between the outwardly spread upstanding edges 21 of said sides of the handle until the pump seats within the circle of the handle. The lower surface 22 of the bottom of the handle together with the rounding opposite sides 20 form a conveniently sized and shaped handle for handling the tank as when it is being filled or being moved about the barn or being loaded into a wagon or truck. By this handle also the tank can be carried by one hand for a considerable distance if desired and obviously forms a more secure and convenient means for quickly picking up the device and carrying it than do the shoulder straps. In this form of construction the barrel of the pump and the handle are concentric so that the presence of the barrel of the pump within the handle does not increase at all the required size of the handle. In fact the palm of the hand in this construction naturally bears against the top of the pump and so forms a rounded smooth surface for the user's hand above the handle. The pump may be readily detached from the handle by temporarily springing the upstanding sides of the handle apart as by sharply

pulling upward on one or both ends of the pump.

In the modified form of my invention shown in Figs. 3 and 4 the handle while open-topped has its sides somewhat shorter or lower and the handle itself does not form the pump-holding means but supports and largely houses said pump holding means. These means consist of two spaced clips or pairs of open-topped resilient arms 24. Each pair of these arms as plainly seen in Fig. 4 form a little less than half of a circle and are conveniently formed from one strip of sheet metal having a downwardly depressed or offset portion 25 at the bottom which is secured by a screw or rivet 26 to the adjacent bottom portion 27 of this handle. The upper ends of these arms are formed as outwardly curved ears 28 adapted to guide the barrel of the pump into the space between the ears in an obvious manner. The offset portion 26 at the bottom of each pair of arms is offset downwardly from the circle only sufficiently to form a space or pocket for the head of the screw or rivet 26 so that the pump barrel will not be marred thereby. In this construction the arms 24 while a little larger than the pump barrel are formed with an appreciably smaller diameter than the diameter of the semi-tubular handle. This allows for the necessary resiliency or spring apart of the arms 24 when the pump is placed in these holding clips or removed therefrom. This construction requires only spring action or resiliency in the clip arms 24 and not in the side walls 29 of the semi-tubular handle.

A third form of my invention is shown in Fig. 5. This modification follows the general type of the invention shown in Figs. 1 and 2 in that the pump holder is a part preferably integral of the handle but unlike the said first form of my invention, this form as shown in Fig. 5 has the opening 30 for the admission of the pump into the handle 31 at the side of said handle. A convenient way of making this form of the invention is to follow the main construction of Fig. 1 in that the combined handle and pump holder is formed of a single piece of sheet metal so as to have at the opposite ends of the handle 31 downwardly extending outspread legs 32 with feet 33 suitably attached to the top or other portion of the tank. The handle and pump holding portion 31 is formed as a C-shaped channel the bottom portion 34 of which connects the opposite legs 32. From this bottom portion 34 there extends upwardly at the right hand side a short portion 35 having its extremity turned outwardly and preferably downward to form a bottom guide for placing the cylinder of the pump through the side opening 30. The rest of the handle as shown in Fig. 5 extends upwardly on the left hand side and then over the top of the pump and has an outwardly and upwardly

curved extremity 36 forming a top guide above the said opening 30. It will be understood of course that the material of which the pump holder 31 is formed is sufficiently resilient to allow the upper and left hand side thereof to yield or spring upwardly from the bottom 34 when the pump is pressed sidewise into the handle or withdrawn bodily sidewise therefrom. The curved form of the bottom 34 makes a convenient curved surface for conveying most of the weight of the device to the hand of the operator when the fire extinguisher or sprayer is being carried. The curved form of the rest of the C-shaped handle also forms a conveniently curved and smooth surface for the operator's hand to grasp. The out-turned extremities 35 and 36 of the C-shaped handle are not prominent enough to interfere with the convenience of this handle.

In the modified form of my invention shown in Figs. 6 and 7 a piece of proper sheet metal may be conveniently shaped to form the channel-shaped handle 37 the two oppositely disposed downwardly and outwardly slanting legs 38, the outwardly extended feet 39 resting upon the top or other upper portion of the tank and the two separate upstanding pairs of spring tensioned open-topped arms 40. In this construction the handle 37 is more or less semi-circular in form and open at the top to receive the cylinder of the pump; the upstanding sides, however, of this handle do not form the means for resiliently grasping and holding the pump cylinder and the handle proper of the device. Beyond the feet 39 the metal at each end is forked or split into two arms each of which are given a ninety-degree turn and the upper part of each of which curves outwardly as at 41 and then inwardly as at 42 and has its upper extremity again turned outwardly as at 43 to form curved guides to aid in forcing the pump down between the two pairs of spring-tensioned clips or arms thus provided. In this form it will be seen that the pump holder consists of the spring-tensioned arms 40 integral with the handle 37 but spaced therefrom.

In the modified form of my invention shown in Fig. 8 there is spaced upwardly from the top of the tank or from the upper part of the tank by means of two spaced legs 44 the open-topped semi-circular channel piece 45 which forms the lower half of the handle and the lower part of the pump holder. To one side, say the left side of this channel piece 45, there is hinged at its upper extremity the edge of the semi-circular upper channel piece 46. In the drawings this upper channel piece is shown in solid lines in opened position. In dotted lines there is shown its closed position. At the free edge of the two channel pieces there are provided inter-engaging detachable fastening members such as

a spring tongue 47 upon the free edge of the swinging member 46 and having a hook or shoulder 48 adapted to engage underneath a shoulder 49 provided on the free edge of the lower channel 45. Obviously other forms of readily detachable fasteners spring-operated or otherwise, may be provided upon the opposite free edges or adjacent portion of the channel members 45 and 46 to hold said parts together when desired and to allow of their being separated without departing from the spirit of this invention.

The modified form shown in Fig. 9 discloses that the handle and pump holder means may be provided on the rearward wall of the tank with the handle spaced the proper distance rearwardly from said rear side of the tank and preferably towards the top of the tank. In Fig. 9 a combined handle and pump holder is used which follows closely the C-shaped open-sided type shown in Fig. 5, but with the parts as a unit projecting rearwardly and with the opening of the pump-holding means opening upwardly. It will be obvious that some of the other forms of handles and pump holders may be secured to the back side of the tank either without change or with relative change in the assembling of the parts and their mounting upon the tank.

In the particular form shown in Fig. 9 the combined handle and pump holder is attached to the rearward upright side of the tank 6 a little ways down from the top 13 of the tank. The unit or combined handle and pump holder is conveniently formed from sheet metal of the proper resiliency cut or stamped to the proper shape so as to provide two spaced brackets 50 having flanges or feet 51 engaging the outer surface of the tank and securing the structure thereto by screws or rivets. Connecting the outer ends of these two brackets 50 there is provided the combined handle and pump holder consisting of an incomplete tubular or C-shaped member having a bottom 52 and outer and inner sides 53 and 54 respectively terminating in upper extremities 55 and 56 respectively. The outer side 53 and part of the bottom 52 of this member will obviously spring outwardly to allow the barrel of the pump to be inserted therein or removed therefrom.

What I claim as new and desire to secure by Letters Patent is:

1. In a portable fire extinguisher and sprayer the combination of a tank, a flexible hose attached to said tank, a cylindrical force pump having one end connected to said hose, and a member rigidly secured to the upper part of the tank and constructed to provide a handle portion for carrying the tank and a portion for detachably holding the pump.

2. In a portable fire extinguisher and sprayer the combination of a tank, a flexible hose attached to said tank, a cylindrical, force

pump having one end connected to said hose, a rigid supporting member attached to the upper part of the tank comprising a curved channel-shaped portion forming a tank carrying handle and rigid legs at the ends thereof rigidly secured to the tank and carrying said handle out from the tank and means on said supporting member for detachably holding the pump.

10 In witness whereof I have affixed my signature, this 13th day of May 1931.

MYRON H. SMITH.

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