PORTABLE FIRE EXTINGUISHER AND SPRAYER

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My present invention relates to portable fire-fighting apparatus and sprayers.

The purpose of this invention is to provide a reliable and convenient portable fire-fighting apparatus or sprayer consisting of a tank and a manually operated pump and particularly to provide convenient means for carrying the tank and to provide means upon the tank for detachable fastening and carrying the pump.

A still further purpose is to provide in an outfit of the class described means for detachably fastening a cylindrical pump to the top of the spraying solution or water-carrying tank so that the pump may be readily removed from its carrying position on the tank without removing the tank from the back of the person carrying it and to allow of the pump being again readily placed in carrying position upon the tank by the person carrying it.

A further purpose is to provide in combination with the tank and pump means for detachably carrying the pump upon the tank without adding any parts to the pump.

A further purpose is to provide in an apparatus of the type described an improved form of strainer and closure cap for the tank.

Another object of the invention is to provide a sprayer or fire-fighting apparatus consisting of a tank and a manually operated force pump of such construction and combination of its parts as to make the apparatus particularly convenient and effective for being carried about on the back of a person and used for fighting forest fires, brush fires and grass fires, or used for general spraying purposes.

Fig. 1 is a perspective view of a sprayer or fire-fighting apparatus embodying this invention.

Fig. 2 is a view of the said apparatus with the pump secured to the tank and the whole outfit carried upon the back of a person.

Fig. 3 shows the tank in position upon the back of a person, but with the pump removed from its carrying position on the tank and held by the person in position for use.

Fig. 4 is a transverse vertical sectional view through the top of the tank on the line of the cover and strainer.

Referring to the drawings in a more particular description, it will be seen that the sprayer or fire-fighting apparatus embodying this invention includes a metal tank 6 simulating in size and shape a knapsack and intended to be readily carried upon the back of a person like a knapsack. To this end there is provided upon the concaved forward or front side 7 of the tank upper and lower pairs of rings 8 and 9 respectively secured to the tank by riveted metal strips 10. A pair of carrying straps 11 are detachably fastened as by hooks 12 to these rings. It will be obvious as seen in the drawings that the straps on the opposite side of the tank go from the upper ring 8 over the user's shoulder and back under his arms to the lower ring on that side. Near the bottom of the tank and preferably at its left hand narrow side as seen in Fig. 2 the tank is provided with an outlet 13 to which is detachably connected one end of the flexible hose 14. The other end of this hose is connected to the rear end of the cylindrical barrel 16 of the force pump 15. The details of the structure of this force pump are not material to this invention further than to say that the cylindrical barrel 16 of the pump has sliding therewithin the co-operating piston member closely engaging the barrel of said pump and provided at its forward end with an operating handle 17 and there beyon a nozzle 18. The pump is operated by the user holding the cylindrical barrel 16 of the pump in one hand and reciprocating the inner member therewithin by means of the external forward handle 17.

When the pump is not being used it is desirable that the apparatus have some means for conveniently carrying in detachable manner the said pump upon the tank. This is accomplished by placing a pair of spaced spring clips or brackets 19 upon the top 20 of the tank preferably near its rearward side. A convenient form of such a detachable clip is shown in the drawings especially in Figs. 1 and 4. This clip comprises a horizontal base portion 21 attached to the top of the tank by suitable means such as screws 22 passing downwardly through holes in said base into screw-threaded holes provided in the top of
the tank. From the base there extends upwardly a pair of spaced arms 23 having concave inner face portions 24 of a size and curve to receive and hold the cylindrical barrel 16 of the pump. The upper ends of these arms 23 curve outwardly so as to assist in temporarily springing the arms 23 apart by simply pushing the barrel down between the arms of the brackets until the barrel comes opposite and fits the concave portions 24. This detachable fastening mechanism is simple enough so that it can be readily operated by the user placing the pump back of his head down into the brackets when the tank is upon the back of the user. In a similar manner the user can reach the pump and detach it from the tank when it is upon his back. It is impracticable to let the pump hang down behind the person when it is not being used as the length of the pump and of the hose is enough to let the nozzle end of the pump strike the ground. Under many circumstances also the fire warden or other person using an apparatus of this sort needs both hands free for work with other tools than the pump. Furthermore, it is an advantage to protect the cylindrical pump barrel from being injured or dented by contact with other hard objects since the pump barrel so injured ceases to allow the reciprocating piston member to work freely therein. Even when the tank is not being carried upon the back of a person but is standing about or is being carried in a wagon or automobile, it is an advantage to have the pump secured to the tank in order to prevent the pump barrel from becoming injured and in order to prevent the pump and the hose from becoming entangled in other things.

It will be noted that the means here provided for detachably fastening the pump to the tank is of such a character as to require no additional members to be placed upon the pump or its barrel. This is a decided advantage as the pump cylinder 16 which forms the handle of the pump has to be used and held in so many positions that any projections or other fastening means attached to the pump barrel itself would be in the way when the pump was being used.

As the tanks for these sprayers or fire-fighting pumps have to be filled often at creeks or pools of water where there may be leaves or other foreign matter, it is essential that there be a strainer upon the tank of large enough capacity to let the tank be quickly filled, but still prevent foreign matter from getting into the tank and thereby into the pump. In the top 20 of the tank there is provided an aperture of desired form and of several inches in diameter and preferably with a rounding downwardly extending flange 25. Into this filling opening is placed the strainer 26. This as shown in Fig. 4 consists of a depending member 27 snugly fitting the opening and having an outwardly extending bead 28 at its upper end to rest against the top 20. At its lower end the part 27 has an inwardly extending flange 28 upon which rests within the member the strainer plate 29 having a plurality of holes 30 of proper size. With a strainer of this form it will be seen that the tank can be readily filled from a bucket or pail by standing the tank in an upright position and pouring the water into the strainer or if no pail or other receptacle is available the tank bodily will be dipped down into the creek or pool of water and the water allowed to fill the tank. In either operation foreign matter will be arrested in the cavity of the strainer and when it accumulates in sufficient quantity will be readily removed by hand.

The closure cap 31 consists of a top 32 similar in form to the strainer and having depending therefrom a relatively deep flange 33 adapted to fit closely within the depending portion 27 of the strainer barrel. Preferably as shown in Fig. 4 the top 32 will be a little larger than the cavity of the strainer and the flange 33 will set back inwardly from the rounded edge of the top of the closure. The cap will fit within the strainer tight enough to be practically water-proof against the water washing back through the cover, but the cover is readily removable and replaceable quickly and without any screwing or other fastening means. This is an advantage in that such tanks often have to be replenished by the fire-fighter when it is dark or when the smoke is so thick that he may not be able to see clearly. A ring handle 34 is attached to the top part of the cover or closure 31 for readily removing the said closure by simply drawing out on the said ring. It will be understood that the strainer normally remains in place upon the top of the tank, but can be removed when desired.

In the depending portion 27 of the strainer 26 there is provided one or more holes 35 preferably just below the lower edge of the flange 25 about the filling aperture in the top of the tank. These holes provide a vent for the air to escape from the top of the tank when it is being filled with water or other fire-extinguishing fluid or spraying liquid and allows the tank to be filled rapidly and conveniently even when the descending liquid is spread out and covering all of the strainer holes in the strainer plate. These vent holes especially allow the air to escape after the liquid in the tank has risen to the level of the bottom of the strainer so that the upper two inches or so of space in the tank may be readily filled.

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

1. A portable fire-extinguisher and sprayer comprising a tank, a flexible hose attached to said tank, a cylindrical force pump having...
one end connected to said hose and spaced pairs of open-ended spring tensioned clips on the top of said tank for detachably holding said cylindrical pump, and located adjacent the back portion of said tank so as to facilitate removal of said pump when the tank is fastened to the back of the user.

2. A portable fire-extinguisher and sprayer comprising a tank, straps connected thereto for carrying the tank upon the back of a person, a flexible hose attached to said tank, a cylindrical force pump having one end connected to said hose and spaced pairs of open-ended spring tensioned clips on the top of said tank for detachably holding the cylinder of said pump in a substantially horizontal position and closely adjacent to the top of said tank.

3. In combination a tank having a filling aperture in its top, a cup-like strainer having depending sides with their upper end fitting said aperture and having perforations in its lower end and a closure having a downwardly extending flange frictionally fitting into said strainer, said filling aperture having a downwardly extending portion whereby the top of said closure may be flush with the top of said tank when applied thereto.

In witness whereof I have affixed my signature, this 9th day of October, 1928.

MYRON H. SMITH.