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KNAPSACK FIRE EXTINGUISHER AND SPRAYER

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2 Sheets-Sheet 2

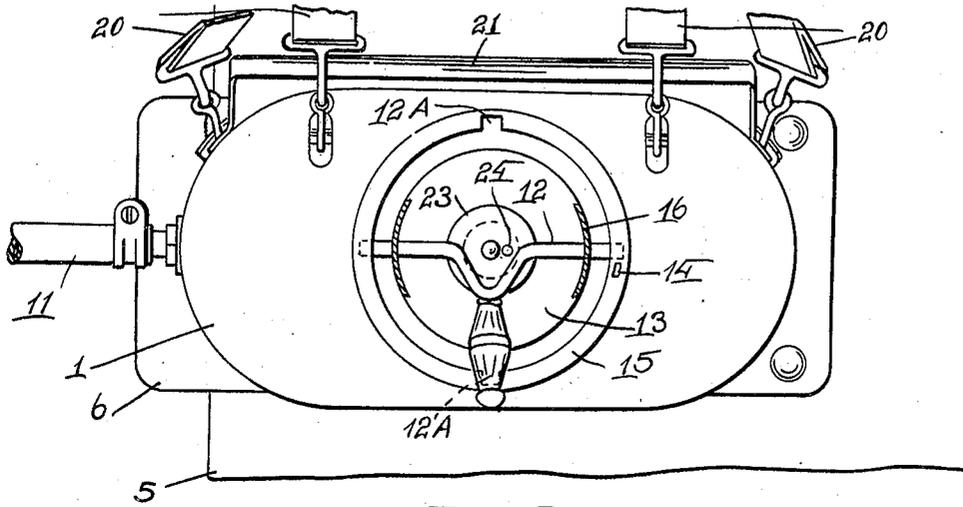


FIG 2

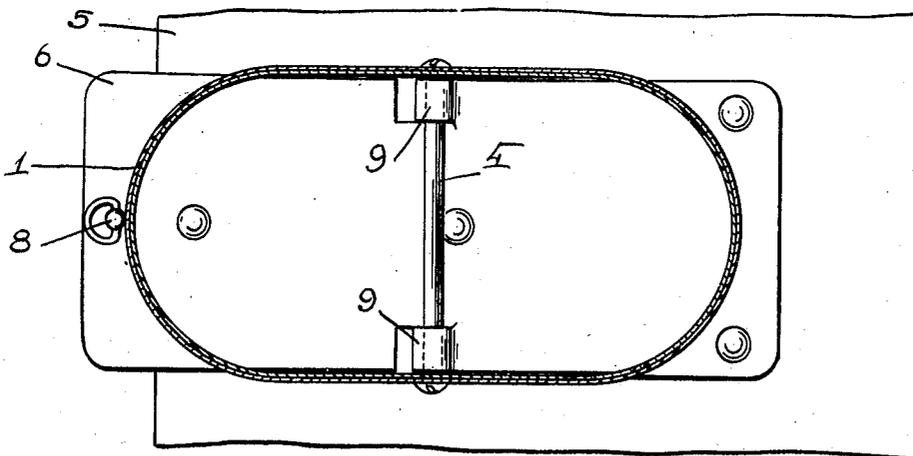


FIG 3

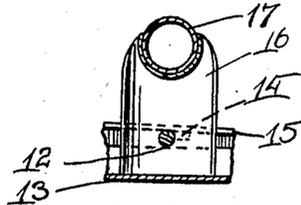


FIG 4

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2,343,400

KNAPSACK FIRE EXTINGUISHER AND SPRAYER

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1 Claim. (Cl. 299—97)

This invention relates to portable fire extinguishers and sprayers of the knapsack type and the object of the invention is to provide a novel construction for such a fire extinguisher and sprayer.

Another object of this invention is to provide the extinguisher and sprayer with a novel combined cover, handle and pump support.

A further object of this invention is to provide the extinguisher and sprayer with a combined reinforcing and locking means for rigidly holding and locking the base of the extinguisher and sprayer to a supporting member.

Still another object of this invention is to seal the filler opening of the tank with a cover to prevent the spilling of liquid therefrom and provide a novel arrangement of a valve in the cover to permit the admission of air into the tank and provide efficient operation of the pump.

All these and other objects and attendant advantages will become more readily apparent from the detailed description of the invention which follows, reference being had to the accompanying drawings in which

Figure 1 is a partial side elevation and longitudinal section of the fire extinguisher and sprayer as it appears locked and held in place on its support.

Figure 2 is a top plan view and horizontal section of the extinguisher and sprayer, the section being taken on the line 2—2 in Figure 1.

Figure 3 is a horizontal sectional view of the extinguisher and sprayer taken on the line 3—3 in Figure 1.

Figure 4 is a vertical sectional view of the cover and pump support of the extinguisher and sprayer, the section being taken on the line 4—4 in Figure 1.

As illustrated in the figures, the fire extinguisher and sprayer construction, forming the subject matter of my present invention, comprises the metal tank 1 which is closed at the bottom by the inverted head 2 and is closed at the top by the slightly dome shaped head 3. Each of these heads is provided with a flange which telescopingly engages into the top and bottom of the body of the tank and is electro-welded thereto.

The tank has a substantially oval horizontal cross section and to reinforce the bottom transversely thereof a reinforcing tie rod 4 connects the opposing sides of the tank within the inverted bottom head 2 on the outside of the tank. The substantially straight portions of the wall of the tank are thus held spaced at the bottom

and held connected by a tie rod so as to prevent pressure from within or knocks against the bottom from without from distorting the tank and opening the welded seam which seals the bottom head into the tank.

When the fire extinguisher or sprayer is to be carried on a truck it is supported on a suitable platform 5 and to hold it in place on the platform a locking plate 6 is provided thereon. This locking plate is suitably bolted in place and one end of the platform is provided with the opening 7 for the engagement of the locking pin 8 thereto. This locking pin is enlarged by diametrically arranged shoulders 8A to cause the pin to normally project from the locking plate when inserted into the hole 7 as illustrated in Figure 1.

Projecting upwardly from opposing edges of the locking plate are a pair of fixed latch members 9, 9 which are adapted to engage the tie rod 4 when the tank 1 is placed onto the locking plate 6 with the tie rod 4 to the left thereof and is then moved to the right to have the latch members engage over the tie rod to hold the tank in place on the supporting platform. After the tank is engaged by the latch members the locking pin 8 is inserted into the opening 7 to hold the tank against lateral movement to the left out of engagement with the latch members and the tank is thus fixedly locked to the supporting platform until the locking pin is removed to permit the tank to be disengaged from the latch members 9, 9 on a lateral movement to the left.

Liquid from the tank is filtered or screened thru the screen 10 which is suitably mounted on the inside of the tank at the outlet to which the pump hose 11 is connected.

The head 3 at the top of the tank is provided with the filler opening 12 which is opened and closed by the closure mechanism similar to that illustrated and described in my prior Patent 2,105,451. In the present form of this closure mechanism the locking bolt 12 limits the rotating movement of the cover 13 by its engagement with the lug 14. The latter is arranged on the underside of the flange 15 in a position where its engagement with the bolt aligns the handle 16 longitudinally of the tank 1 so that the locking movement of the bolt 12 not only seals the cover over the filler opening but also locates the handle 16 in a predetermined position relative to the top of the tank 1.

Locating the handle 16 in a predetermined position is essential for this knapsack type fire

extinguisher and sprayer because the handle is used for holding the pump 17 in place on top of the tank. For this purpose the horizontal member of the handle is channel shaped and has a substantially semi-cylindrical cross section which is adapted to encircle slightly more than half of the circumference of the pump barrel in order to hold the barrel in the handle after being inserted thereinto. The grip of the handle on the pump barrel is made yielding by means of a pair of spaced slots in one side of the handle. These slots divide the wall of one side of the handle so that each section may yield more readily to the pressure of the pump barrel on its insertion into or withdrawal from the supporting handle.

The hose 11 which connects the tank with the pump 17 is flexible and thus permits the handle 16 to be turned with the pump into a position transversely to the tank which is necessary for the insertion or withdrawal of the ends of the locking bolt 12 from the slots 12A on the closing or opening of the filler opening by the cover 13.

The tank is provided with a pair of carrying straps 20, 20 which are suitably anchored to the top and at the bottom of the tank and a shield 21 is spacedly attached to the back of the tank as illustrated in Figure 2 so that in carrying the tank in the manner of a knapsack the back of the person carrying the tank rests against the shield and not the tank proper. The spacing of the shield from the tank provides sufficient space between the shield and the tank to cause any liquid on the outside of the tank to drain between the tank and the shield and thus keep it from contacting the back of the carrier. The spacing

of the shield from the tank furthermore provides necessary ventilation between the back of the carrier and tank and thus prevents chilling the back of the person carrying the tank.

The cover 13 hermetically seals the filler opening so that no liquid may spill from it while being carried, but in order to permit liquid to be drawn from the tank by the pump, air must be admitted into the tank during the operation of the pump. This is made possible by the valve member 22 provided on the under side of the central dome 23 in the cover 13. This valve member comprises a rubber disc which is yieldingly held against the inside of the top of the dome 23 to normally cover the air inlet opening 24. Liquid from the inside of the tank can therefore not escape or spill thru this opening but whenever the pump 17 is operated to draw liquid from the tank, the partial vacuum created in the tank causes the atmospheric pressure to force air into the inlet opening 24 and displace the valve member and thus admit air into the tank for the proper operation of the pump.

I claim:

In a fire extinguisher and sprayer the combination of a tank having a filler opening in the top thereof, a rotating cover for opening and closing said filler opening, a handle carried by said cover, a channel provided on top of said handle, a pump adapted to be yieldingly held in place in said handle, and stop means for limiting the rotative movement of said cover and provide for the alignment of said handle with the pump supported thereon relative to said tank.

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