

W. L. DEMING.
FIRE EXTINGUISHING APPARATUS.
APPLICATION FILED JUNE 28, 1911.

1,038,859.

Patented Sept. 17, 1912

2 SHEETS—SHEET 1.

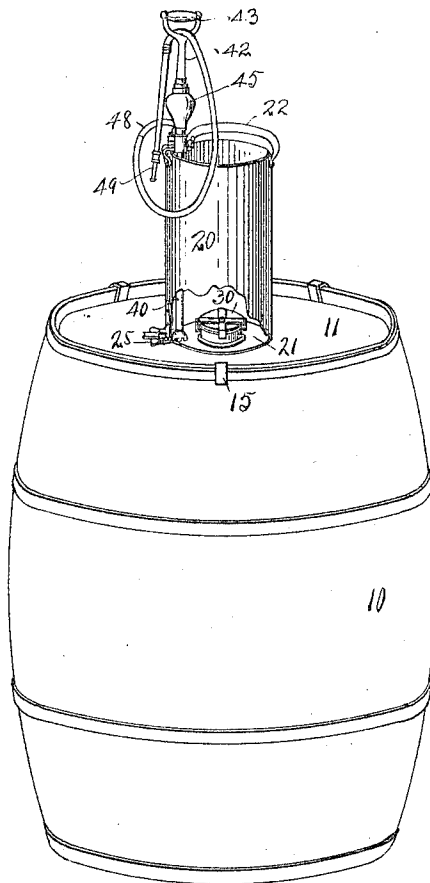


FIG. 1

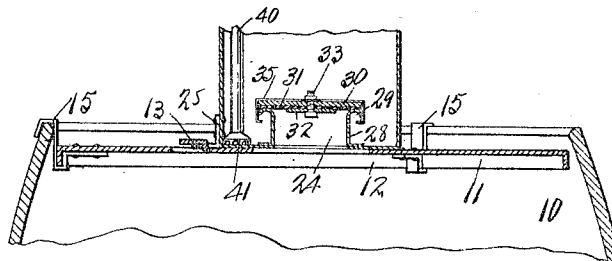


FIG. 2

Witnesses.

Oliver M. Kappler.
Charles Watt

Inventor

William L. Deming,
By Albert H. Baker.
Att'y

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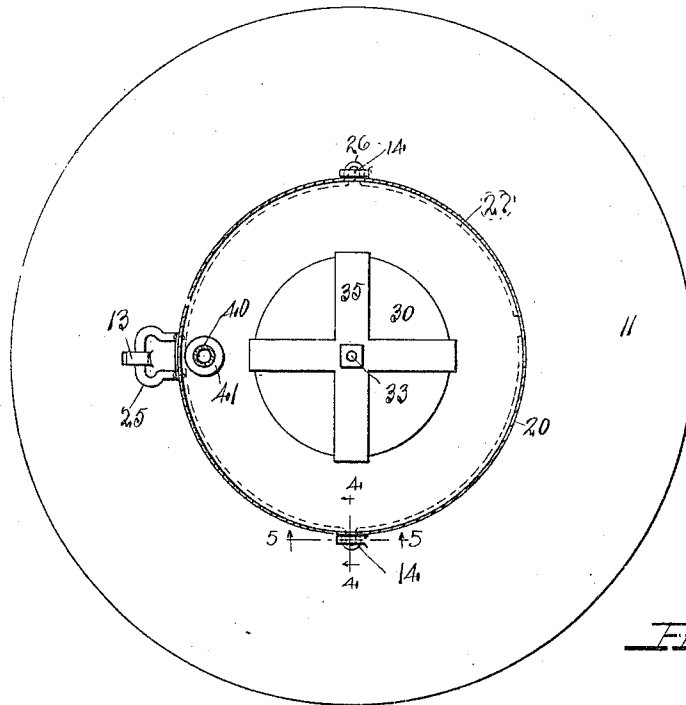


FIG. 3.

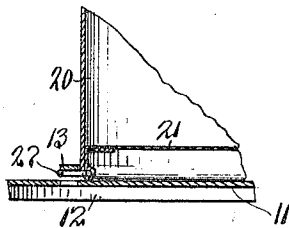


FIG. 4.

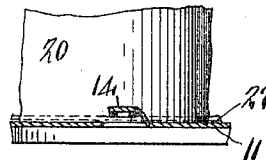


FIG. 5.

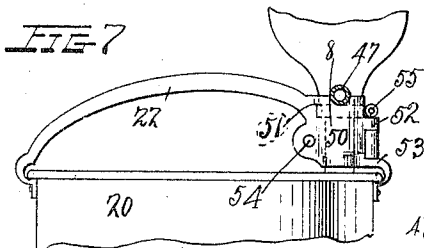


FIG. 7.

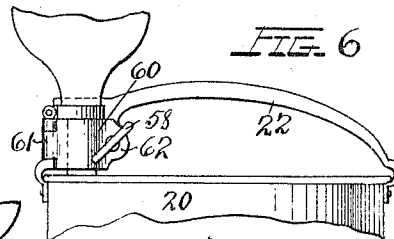


FIG. 6.

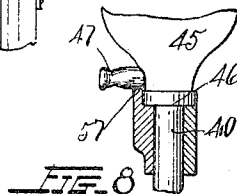


FIG. 8.

Witnesses:
Oliver M. Kappeler.
Charles Watt.

Inventor
William L. Deming
By Albert H. Bates,
Attorney

UNITED STATES PATENT OFFICE.

WILLIAM L. DEMING, OF SALEM, OHIO, ASSIGNOR TO THE DEMING COMPANY, OF SALEM, OHIO, A CORPORATION OF OHIO.

FIRE-EXTINGUISHING APPARATUS.

1,038,859.

Specification of Letters Patent. Patented Sept. 17, 1912.

Application filed June 28, 1911. Serial No. 635,878.

To all whom it may concern:

Be it known that I, WILLIAM L. DEMING, a citizen of the United States, residing at Salem, in the county of Columbiana and State of Ohio, have invented a certain new and useful Improvement in Fire-Extinguishing Apparatus, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

The object of this invention is to provide a hand fire extinguishing apparatus adapted to be quickly loaded from a suitable stationary tank containing liquid and thereafter carried to the place of the fire and discharged by a suitable hand pump. To this end I have provided a vessel to contain the liquid, as water or brine, a false head therefor normally closing the vessel while adapted to be instantly depressed into it, a portable tank normally resting on the false head and having a suitable entrance valve, and a pump and discharge hose carried by the tank. With such apparatus, in case of fire, it is only necessary to shove down into the vessel the tank until it is filled with liquid and then carry it to the place of the fire and operate the pump to discharge the contents. The invention includes not only this broad idea but also the particular features of temporarily holding the false head to the vessel and temporarily securing the tank to the head and of holding the pump in the tank, all of which will be clear from the description hereinafter given of a preferred embodiment of the invention.

In the drawings, Figure 1 is a perspective view of my fire extinguishing apparatus, the tank being partly broken away to disclose the interior; Fig. 2 is a vertical section through the upper portion of the vessel and the lower portion of the tank; Fig. 3 is a horizontal section through the tank looking downward; Figs. 4 and 5 are details showing the construction for temporarily holding the tank to the head, being fragmentary vertical sections, on the lines 4-4 and 5-5 respectively of Fig. 3; Figs. 6 and 7 are side elevations of the clamp for holding the pump in place, being respectively a front and rear view with the apparatus as shown in Fig. 1; Fig. 8 is a detail, being a vertical section substantially on the line 8-8 of Fig. 7.

As shown in the drawing, 10 represents a

barrel which is the vessel for containing the stored extinguishing liquid, which may be water or brine, or other substance.

11 indicates a false head for the barrel, the same being shown as a piece of sheet metal flanged downwardly at its outer edge at 12. This head is hung on the barrel by suitable metal straps 15. Three of these straps are shown riveted to the head and bent under its flange and then upwardly, then outwardly and downwardly to provide hooks adapted to extend over the upper edge of the barrel and thus normally support the head with its load. The hooks are of comparatively light sheet metal so that an additional downward pressure on the head may straighten the hooks sufficiently to free the head, enabling it to drop into the barrel.

20 indicates a tank which is adapted to receive the extinguishing liquid from the barrel, enabling it to be conveyed to the place of use. This tank is preferably in the form of a bucket with a cylindrical wall, a bottom 21 and a rigid bail 22 at the top by which it may be carried. In the bottom of the bucket is a valve 30 controlling an opening 24 through the bottom and within the bucket and secured by the bail is a pump 40. The bucket, with its pump, normally stands on the false head 11, as shown in Fig. 1.

The bucket is preferably provided on its outer side at the bottom with an outwardly projecting foot rest 25 on which the operator places his foot when working the pump. This foot rest is of use also in temporarily securing the bucket to the head 11. This I accomplish by having an up-turned lip or strap 13 of the false head adapted to lie over the foot rest. Other straps 14 extend over suitable outward projections on the bucket. Such outward projections are shown in Figs. 3, 4 and 5 as made by U-shaped outward bends 26 in the stiffening wire 27, which will lie at the base of the vertical wall where it is curled back to join the bottom 21. The straps 13 and 14 normally hold the bucket on the head 11 but enable it to be easily detached therefrom.

In case of fire, a downward pressure by the operator on the bucket straightens out the hooks 15 so that the head and bucket go down into the liquid and the bucket becomes filled through the opening 24. Then, when the bucket is raised out of the barrel

the valve closes and the bucket pulls loose from the head by straightening the retaining straps and, with its contents, may be carried to the place of use. This operation of loading the bucket may be done very quickly. The operator simply takes hold of the top of the bucket with his hands and pushes it down into the barrel, the bucket automatically filling. The false head thus becomes submerged in the liquid and when the bucket is lifted out of the barrel the weight of the water above the projecting portion of the head insures the straps 13 and 14 bending to allow the bucket to pull loose from the head.

The valve which controls the entrance of water into the bucket may be that shown in Figs. 1, 2 and 3 which is shown, described and claimed in my divisional application No. 708,998, filed July 12, 1912. Such valve consists of a disk 30, preferably of metal, having beneath it a pad 31, which is preferably a disk of leather held in place by an under disk or washer 32 and the central bolt 33. Surrounding the opening 24 in the base of the bucket is the sleeve 28, which is rolled over outwardly at its upper end, as shown at 29, to make a seat for the valve. The leather 31 rests normally on the highest point of the curled-over edge 29. Secured to the valve 30 is a sheet metal strap 35 which bends downwardly and projects beneath the curled edge 29 to center the valve, as well as to limit its upward movement. This strap 35 is shown as having four arms like a Greek cross. At its center this cross is held by the bolt 33. At the edges of the disk 30 the arms of the cross bend downwardly at right angles and then bend inwardly beneath the edge 29. It is to be understood that a greater or less number of arms than the four shown may be employed on this strap, if desired. Not only does this strap maintain the disk in proper position by allowing it to easily move upwardly to limit its lift, but enable the disk to be removed entirely whenever desired, one or two of the arms being simply sprung outwardly at its lower end enough to clear the edge 29. The pump carried by the bucket and designated 40 in the drawings may conveniently be of the differential type shown, wherein there is a vertical barrel terminating at its lower end in the housing 41 carrying a suitable intake check valve. Operating in the barrel is a plunger forming a continuation of the shank 42, on which is a handle 43. The plunger may operate through an air chamber, shown at 45, and there may be a suitable internal discharge check-valve—not shown. The internal construction of the pump, however, is not claimed in the present application, as it may be of any suitable form. The pump is provided with a suitable discharge tube 47 leading from it at the

base of the air chamber and to this pipe is connected a hose 48 which has a nozzle 49.

To hold the pump firmly in the bucket, as well as to properly position the discharge hose and also to enable the pump to be conveniently removed whenever desired I may form the bail 22 in the peculiar manner and provide it with the clamp, shown particularly in Figs. 6, 7 and 8, and which is shown, described and claimed in my divisional application No. 708,997, filed July 12, 1912. I will now describe such structure. At the base of the air chamber 45, where it joins the pump barrel, is an outwardly projecting annular shoulder 46. The bail 22 is formed with a substantially semi-cylindrical portion 50 which is adapted to snugly embrace one side of the pump barrel. Within the semi-cylindrical seat thus provided is a peripheral groove 51 adapted to receive substantially half of the projecting shoulder 46. On the opposite side of the pump barrel 40 is a clamp plate 60 which likewise has a semi-cylindrical body. At one edge this clamp has an ear 61 which projects between an ear 52 of the bail and the main body of the bail 53 adjacent to the point where it is secured to the bucket. A pin 55 passing through the ears and into the portion 53 hinges the clamp to the bail. A suitable thumb-screw 58 passes loosely through an opening in an ear 62 on the clamping plate and screws into a threaded opening 54 in the bail. The bail plate 50 is provided near its upper edge with a notch 57 in which rests the discharge tube 47. Accordingly, when the thumb screw 58 is tightened, the pump is clamped in place. It cannot move up or down, due to the projecting shoulder 46 in the groove 51, nor twist in the bearing, the discharge tube in the recess 57 preventing any twisting movement. Accordingly, the pump is held in the desired position. By screwing out the thumb-screw 58, however, the clamp plate may be turned back and the pump, with the hose, entirely removed, whenever desired.

It will be seen from the above description that my fire extinguishing apparatus is simple and cheap in construction. It requires no special charging and is always substantially ready for use. It is only necessary to push the bucket down into the barrel, which takes only an instant of time and then carry it to the place of use and operate the pump. In such operation the operator places his foot on the projecting foot rest 25 and raises and lowers the plunger by means of the handle 43 while directing the stream by grasping the hose adjacent to the nozzle.

After use of the apparatus, the parts are replaced so as to be ready for subsequent use. This is accomplished by simply bending back to the original position the straps 15, 13 and 14 on the head and replacing the

head with the straps 15 overhanging the upper edge of the barrel and replacing the bucket on the head with the straps 13 and 14 overhanging the lateral projections of the bucket. The free ends of the straps 13 and 14 all project in the same direction so that, when the bucket is being replaced, the strap 13 will stand in the opening of the foot rest 25 with its free end toward the arch of the foot rest and the straps 14 will stand at the rear of the projections 26 with their free ends toward them. Accordingly, a rearward shove of the bucket in this position brings all three straps over the corresponding projections of the bucket, holding the bucket in place until next used.

It should be noted that, while I have described the pump and its holding device for the sake of completeness, the present invention is independent thereof. My self-loading tank may be employed with or without the pump, as desired. Also it should be noted that though the admission valve shown is admirably adapted for this purpose, I am not limited in the present application to such admission valve. For claims on the specific structure of the admission valve and on the pump holder shown reference should be had to the two divisional applications above mentioned.

Having thus described my invention, what I claim is:—

1. In an apparatus of the class described, the combination, with a vessel, of a top therefor readily depressible into the vessel and having an opening through it, a portable tank removably seating on such top and having an entrance opening near its bottom, and a valve for controlling such opening.

2. In an apparatus of the class described, the combination of a vessel adapted to contain liquid, a top therefor, means for normally supporting such top above the liquid in the vessel, said means being adapted to be distorted by downward pressure to free the top, whereby it may descend into the vessel, a portable tank adapted to rest on the top and be normally supported by it, an intake opening into the tank near its bottom, and a valve within the tank for automatically controlling said opening.

3. In an apparatus of the class described, the combination of a vessel adapted to contain liquid, a top therefor normally supported above the liquid but depressible into it, said top having an opening through it, a portable tank adapted to be supported by the top and cover the opening, said tank having an opening in its bottom, and a valve within the tank automatically closing said opening.

4. The combination of a vessel, a false head therefor, means engaging said head and the body of the vessel for temporarily

supporting the head, said head having an opening through it, a portable tank formed to rest on said head over the opening therein and having in its base an opening adapted to register therewith, and a gravity valve within the tank tending to close said opening.

5. The combination of a suitable vessel adapted to contain liquid, a false head therefor, straps secured to the head and adapted to extend over the upper edge of the vessel to normally support the head, said straps being adapted to be bent by downward pressure on the head to free the head, said head having an opening through it, a portable tank adapted to rest on said head and having an opening in its base adapted to register with the opening through the head, and a valve within the tank tending to close said opening into it.

6. The combination of a vessel, a top therefor, means for normally supporting the top while allowing it to be readily depressed into the vessel, an opening through the top, a portable tank adapted to stand over said opening and having an opening into it, a valve for automatically controlling said opening into the tank, and means for normally holding the tank to the top while allowing it to be readily detached therefrom.

7. The combination of a cask or barrel adapted to contain liquid, a false head therefor, straps for normally supporting said head by the wall of the vessel but allowing it to be readily depressed into the vessel, a portable tank adapted to seat on said head, straps carried by the head for normally holding the tank thereon while allowing it to be readily removed, an intake opening into the tank near its bottom, and a valve for automatically controlling such opening.

8. In an apparatus of the class described, the combination, with a containing vessel, of a top therefor, a portable tank adapted to be normally supported by such top, an opening through the base of the tank, an upwardly extending sleeve within the tank surrounding such opening and having an outward projection on it, a disk valve adapted to rest on the upper edge of said sleeve, and retaining devices carried by the disk valve and extending downwardly, and inwardly beneath such projection.

9. In an apparatus of the class described, the combination of a portable tank, an outwardly projecting foot rest carried by the tank near its lower end, a vessel adapted to contain liquid and having a top adapted to support the tank, and a temporary retainer carried by the top and adapted to engage the outwardly projecting foot rest.

10. In an apparatus of the class described, the combination of a portable tank, a peripheral bracing wire at the base of the tank wall, said wire having outwardly projecting

loops, a containing vessel provided with a head, and a temporary retainer carried by said head and adapted to engage said outwardly projecting loops.

11: In an apparatus of the class described, the combination of a vessel, a top therefor, straps carried by the top and having one edge free, and a bucket having outward projections, the bucket being adapted to stand on the top and having its projections shoved under the straps.

12: In an apparatus of the class described, the combination of a vessel, a metal head therefor having an opening through it, a

tank adapted to rest on said head and having an opening through its bottom, a valve within the tank controlling such opening, an outwardly projecting looped foot rest at the bottom of the bucket, a strap upturned from the metal of the head and adapted to project into the loop of the foot rest and overhang such foot rest to position the tank.

In testimony whereof, I hereunto affix my signature in the presence of two witnesses.

WILLIAM L. DEMING.

Witnesses:

ALBERT H. BATES,
BRENNAN B. WEST.