May 31, 1949. J. H. STROOP 2,471,460

FIRE EXTINGUISHER

Filed Dec. 6, 1944

Fig. 1.

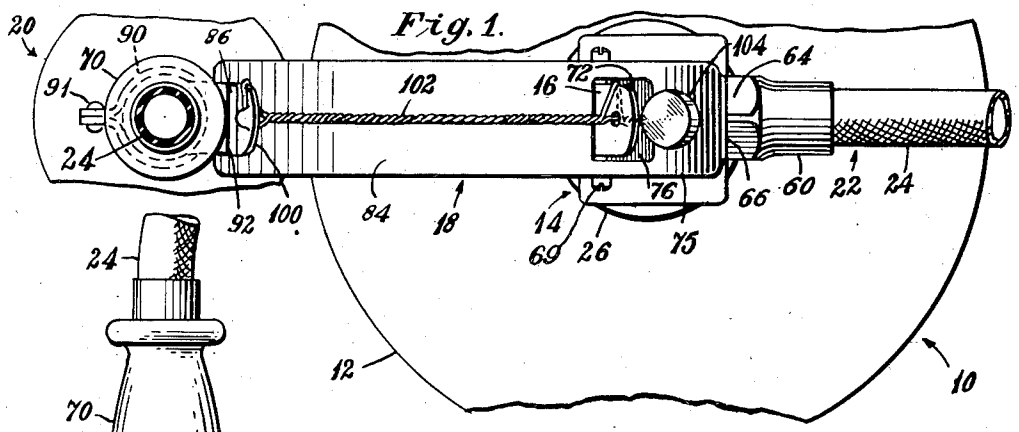


Fig. 2.

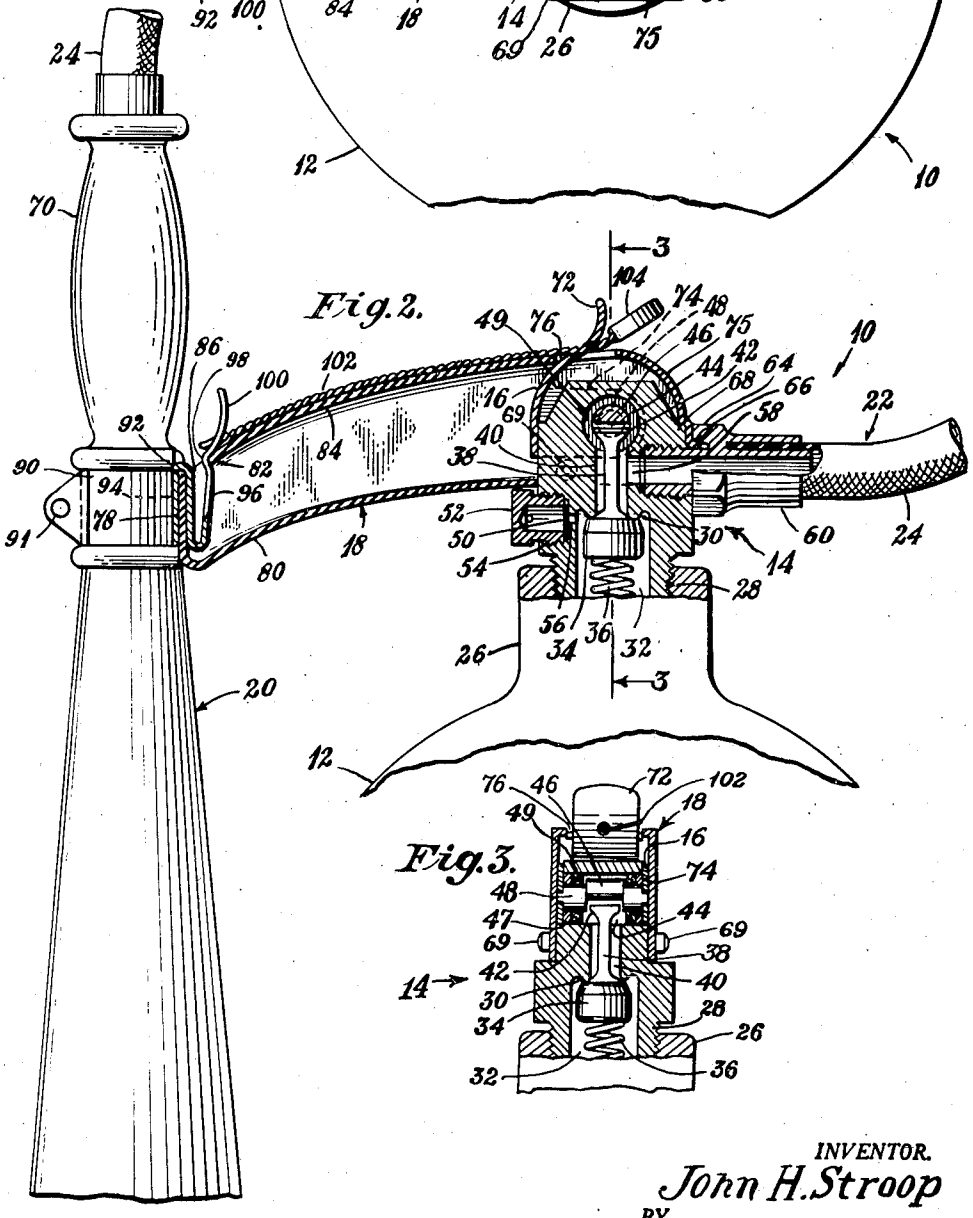


Fig. 3.

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FIRE EXTINGUISHER

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10 Claims. (Cl. 169—31)

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This invention relates to fire extinguishers and particularly to portable fire extinguishing units including carrying handles and discharge horns or the like.

Heretofore it has been usual to provide a flexible hose between a discharge horn and a cylinder or container, and to mount the horn on the container so that the horn is normally held substantially parallel to the cylinder close thereto to conserve space, but from which position the horn may quickly be released and directed, through the intermediary of the hose, for extinguishing a fire.

It has also been usual to employ elements other than those essential to the fire extinguishing operation such as metal bands around the cylinders, brackets or the like, for holding the horns as above mentioned.

An object of the present invention is to reduce the number, size, weight and cost of parts required for mounting a discharge horn on the cylinder.

Another object is to effect a greater utilization of essential members of a fire extinguisher in mounting the horn on the cylinder.

Another object is to so provide means in a flexible connection, between a discharge horn and a discharge head in fire extinguishers of the above mentioned type, as to hold the handle in position on the head, as distinguished from means heretofore employed for holding the handle and having no other purpose.

Another object of the invention is to provide novel safety means for sealing the horn and a valve actuating member relative to the handle to discourge tampering with the extinguisher and to indicate tampering or former use thereof.

Other and further objects of the invention will be obvious upon an understanding of the illustrative embodiment about to be described, or will be indicated in the appended claims, and various advantages not referred to herein will occur to one skilled in the art upon employment of the invention in practice.

A preferred embodiment of the invention has been chosen for the purpose of illustration and description and is shown in the accompanying drawing, forming a part of the specification, wherein:

Figure 1 is a fragmentary top plan view of a portable fire extinguishing unit embodying the invention.

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Figure 3 is a sectional view taken substantially along the line 3—3 of Figure 2.

Referring to the drawing, a portable fire extinguishing unit 10, for which the invention is adapted, comprises, in general, a container or so-called cylinder 12, a discharge valve head 14, an operating member 16 for the valve of the head 14, a carrying handle 18 for the unit fixed to the head 14, a discharge horn 20, or the like, releasably mounted on the handle 18, and means 22, including a flexible conduit or hose 24, providing a connection between the head 14 and the horn 20 for the passage of a fire extinguishing fluid from the cylinder 12 through the horn 20.

The cylinder 12 is of a standard type having a neck 26 in which a nipple end 28 of the head 14 is screw threadably mounted. The head 14 comprises a valve seat 30 in a valve chamber 32 for a valve body 34, which is normally maintained against the seat for a spring 36, and by the pressure of the fluid medium in the cylinder 12. A stem 38, for unseating the valve body 34 is disposed in a conduit portion 40 of the head 14, the said stem having a head or cam follower upper end portion 42 in a recess 44 of the head for engagement by a cam or half cylindrical central portion 46 of a crank shaft 48 journalled in plug bearings 47 and having sealing elements 49 closing the ends of the chamber 44 as shown in Figure 3. A safety disc 50 is held by an apertured screw plug 52 in a recess 54 of the head 14 over a port 56 which communicates with the valve chamber 32.

An outlet conduit 58 of the head 14 communicates with a coupling 60 for the hose 24, the coupling, as an example of one part of the present invention, having an annular undercut portion or flange 64 for clamping a shoulder 66 of the handle 18 against a seat 68 on the discharge head 14 for assisting screws 69 in holding the handle in place. The hose 24 extends, and is secured, to an inlet or hand holding end 70 of the discharge horn 20.

The operating member 16 constitutes part of means including the shaft 48, the cam 46, the cam follower portion 42 and the stem 38, for actuating the valve body 34, and is of sheet-like construction including a thumb piece 72 and side arms 74 closely embracing opposite parallel flat sides of the head 14 and secured to the shaft 48.

The carrying handle 18 is of hollow construction having a cup-like inner end 75 fitted over

provided with means, in addition to the shoulder 66, for holding the handle in position on the head 14.

The handle 18 has an outer end wall 78 extending upwardly from a bottom wall 80 thereof to a position close to, but separated from an edge 82 of an upper wall 84 of the handle to form a slot 86; the end wall 78 thereby constituting a support or hanger for the horn 20, and the edge 82 constituting the detent of a snap latch, as will appear.

A split tube member or clip 90 has outer radial ears joined, as by a screw or rivet 91, securing the clip around the horn 20 adjacent to the upper end of the horn and, at the top of the inner portion 94 of the clip has a portion 92 of inverted substantially U-shape inserted over the wall or hanger 78 which, with the portion 94, embraces the hanger 78 in spring holding relation thereto. A return-bent leg 96 extends upwardly from the lower end of the portion 92 inside the handle and through the slot 86. A portion 98 of the leg 96 is curved to form a spring releasable latch for the edge or detent 82, and has a top portion 100 of the leg constituting a trigger or finger piece for releasing the latch.

The leg 96 is spring biased about its lower end as a fulcrum to hold the latch 98 against the detent 82 so that, upon inserting the portion 96 into the slot 86, the latch 98 will automatically spring into latching relation to the detent 82.

To release the horn 20 from mounted position, it is only necessary to grasp the portion 70 and to press the trigger 100 to release the latch 98 from the detent 82, and to withdraw the assembly including the clip 90, the horn 20 and the hand hold portion 70 from the handle 18. Safety means, for discouraging tampering with the device and unauthorized or useless discharge of the fire extinguishing fluid, and for indicating such tampering or any previous discharge of the fluid, is provided in the form of a single sealing wire 102 linking the trigger 100 to the thumb piece 72, and so held, in its shortest length tightly linking the trigger and the thumb piece against the releasing movements thereof by a seal 104 as to require breaking of the wire 102 to permit such movements.

From the foregoing description, it will be apparent that a novel construction has been provided for mounting the horn on the handle, attaching the latter to the head, and safety sealing the horn and the valve in position, in a manner very considerably reducing the weight, cost and number of parts, enhancing the appearance, and more fully utilizing parts essential to the fire extinguishing purpose.

As various changes may be made in the form, construction and arrangement of the parts herein, without departing from the spirit and scope of the invention and without sacrificing any of its advantages, it is to be understood that all matter herein is to be interpreted as illustrative and not in any limiting sense.

It is also to be understood that the following claims are intended to cover all the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

I claim:

1. In combination in a fire extinguisher, a container for a fluid medium under pressure, a discharge valve head on said container, actuating means for the valve of said head, a carrying handle for said container, a discharge horn, flexible conduit connecting means between said head and said horn, and means cooperating between said handle and said horn for releasably mounting said horn directly on said handle.

2. In combination in a fire extinguisher, a container for a fluid medium under pressure, a discharge valve head on said container, actuating means for the valve of said head, a carrying handle for said container, a discharge horn, flexible conduit connecting means between said head and said horn, and means cooperating between said handle and said horn for releasably mounting said horn on said handle and including snap latch means for automatically locking said horn to said handle when said horn is placed in supported position on said handle.

3. In combination in a fire extinguisher, a container for a fluid medium under pressure, a discharge valve head on said container, actuating means for the valve of said head, a carrying handle for said container, a discharge horn, flexible conduit connecting means between said head and said horn, and means cooperating between said handle and said horn for releasably mounting said horn directly on said handle in position along, and close to, one side of said container substantially parallel thereto.

4. In combination in a fire extinguisher, a container for fluid medium under pressure, a discharge valve head on said container, actuating means for the valve of said head, a carrying handle for said container, a discharge horn, flexible conduit connecting means between said head and said horn, and means cooperating between said handle and said horn for releasably mounting said horn directly on said handle at the outer end of the handle.

5. In combination in a fire extinguisher, a container for a fluid medium under pressure, a discharge valve head on said container, actuating means for the valve of said head, a carrying handle for said container, a discharge horn, flexible conduit connecting means between said head and said horn, and means cooperating between said handle and said horn for releasably mounting said horn directly on said handle, and a single disruptible means connected between said actuating means and said mounting means and normally tending to prevent the operation of said actuating means and the release of said horn by said mounting means.

6. In combination in a fire extinguisher, a container for a fluid medium under pressure, a discharge valve head mounted on said container and having a seat, actuating means for the valve of said head, a carrying handle for said device mounted on and secured to said head and having a shoulder contacting said seat, a discharge horn, and means providing a flexible conduit connection between said head and said horn and including a coupling element formed to clamp said shoulder to said seat.

7. In combination, a container for a fluid medium under pressure, a discharge valve head on said container, actuating means for the valve of said head, a hollow carrying handle for said container fitted over said head and including an upwardly extending outer end wall constituting a hanger, the top edge of said wall and an outer end edge of a top wall of said handle adjacent to said edge forming a slot between said edges, said top wall edge constituting a latch detent, discharge means, means providing a flexible conduit connection between said head and said dis-

charge means, and means associated with said discharge means for releasably mounting the same on said handle comprising a resilient element of inverted substantially U-shape closely slidably fitting over said hanger with its legs at inner and outer sides thereof, respectively, and a portion return bent upwardly from the bottom of the inside leg extending through said slot forming a snap latch for said detent and having a release trigger for the latch outside said handle.

8. In combination, a container for a fluid medium under pressure, a discharge valve head on said container, a carrying handle for said container fitted over said head and having an aperture over said head and means at the outer end of said handle forming a hanger and a latch detent, actuating means for the valve of said head including a thumb operating handle extending through said aperture, discharge means, means comprising a flexible hose providing a connection between said head and said discharge means, means carried by said discharge means for releasably mounting said discharge means on said handle and including means for hanging the same on said hanger and a snap latch for said detent, and a single disruptible means connected between said thumb operating handle and said latch and normally tending to prevent the operation of said actuating means and the release of said discharge means by said mounting means.

9. In combination in a fire extinguisher, a container for a fluid medium under pressure, a discharge valve head on said container, actuating

means for a valve of said head, a carrying handle for said container, a discharge horn, flexible conduit connecting means between said head and said horn, and means cooperating between said handle and said horn for releasably mounting said horn on said handle and including means for locking said horn against accidental displacement from said handle.

10. In combination in a fire extinguisher, a container for a fluid medium under pressure, a discharge valve head on said container, actuating means for a valve of said head, a rigid carrying handle for said container fixed relative thereto and having discharge horn mounting means, a discharge horn, flexible conduit connecting means between said head and said horn, and means associated with said horn having means cooperating with said mounting means for releasably mounting said horn on said handle.

JOHN H. STROOP.

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