Feb. 19, 1952 A. SMYE 2,586,575

FIRE-EXTINGUISHING APPARATUS

Filed May 31, 1950 2 SHEETS—SHEET 1

FIG. 1.

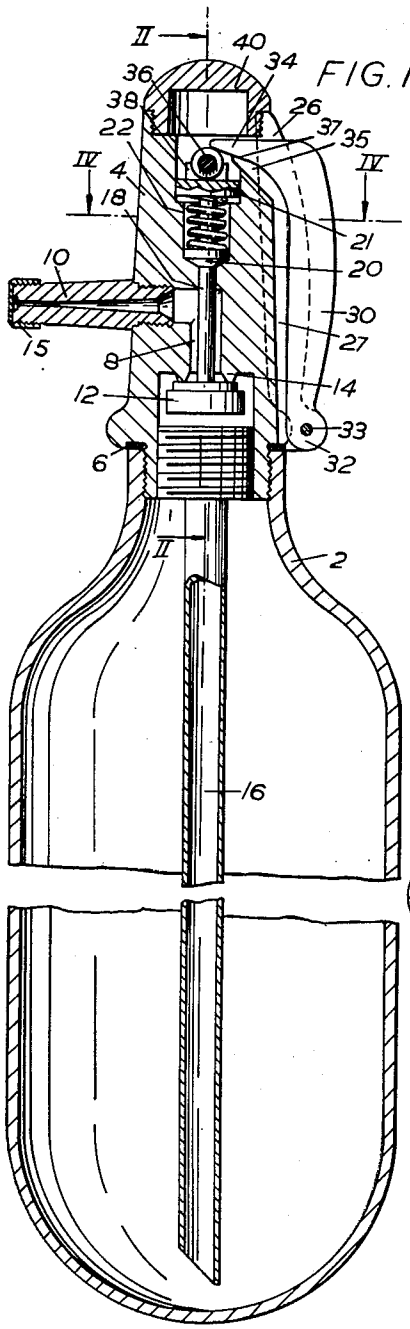
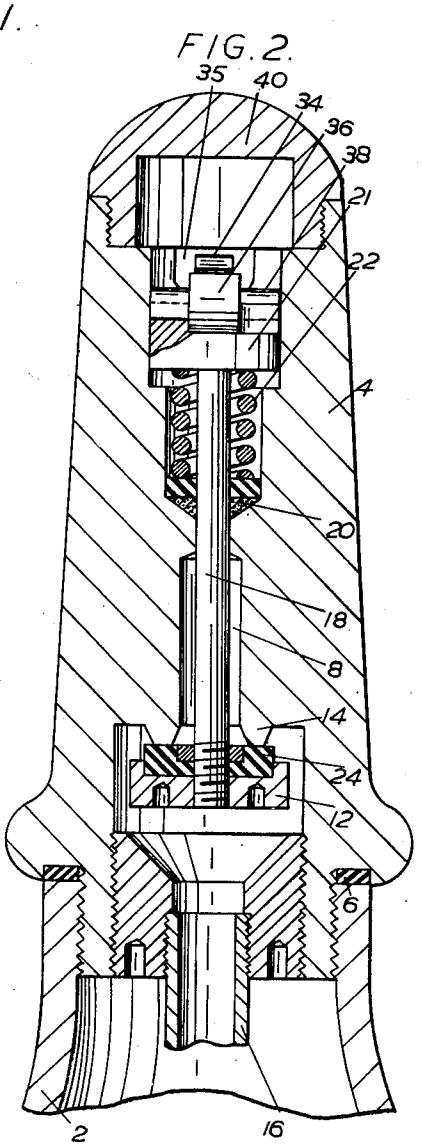


FIG. 2.



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FIG. 3.

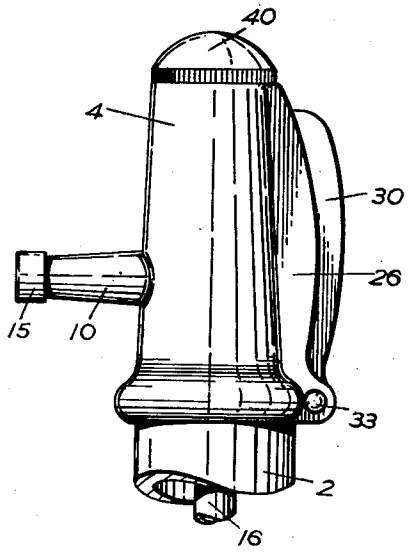
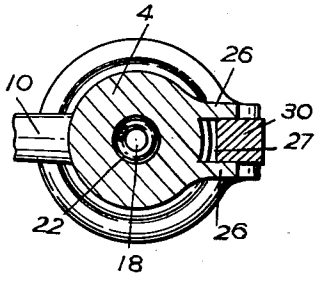


FIG. 4.



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2,586,575

FIRE-EXTINGUISHING APPARATUS

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Application May 31, 1950, Serial No. 165,227
In Great Britain May 31, 1949

6 Claims. (Cl. 169—31)

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The present invention relates to portable fire extinguishers of the type which comprise a container for fluid under pressure and a discharge head which includes a valve serving to control the discharge of fluid from the container.

It is an object of the present invention to provide an improved extinguisher which is readily operable even by inexperienced persons.

It is a further object to provide an extinguisher which may be held and controlled with one hand.

It is another object to provide an extinguisher having a valve mechanism of very simple construction.

Further objects and advantages of the invention will be apparent from the following description of the preferred embodiment. In this description reference is made to the accompanying drawings forming a part of the specification in which:

Figure 1 is a vertical cross section through the extinguisher;

Figure 2 is a section on a larger scale on the lines II—II in Figure 1;

Figure 3 is an elevation of the head of the extinguisher; and

Figure 4 is a section on the line IV—IV in Figure 1.

The extinguisher comprises a stout container 2 to which is screwed a discharge head 4. The container is charged with liquid, and the joint between the container and the head is sealed by a gasket 6. In the discharge head there is a passage 8 leading to a discharge nozzle 10 and flow through this passage is controlled by a valve member 12 which co-operates with a seat 14. The liquid in the container is kept under pressure, and initially the pressure may be applied by screwing a compressed air pipe over threads on the end of the discharge nozzle 10. The discharge nozzle is protected by a plastic dust cap 15 which makes a push fit over the threads on the end of the nozzle and so has a very light grip on the nozzle and is blown off when liquid is discharged. A dip pipe 16 is screwed into the base of the discharge head so that when the valve member 12 is depressed off its seat liquid under pressure can be driven from the bottom of the container until it is almost empty.

The valve member 12 is carried on a spindle 18 which can slide vertically in the discharge head. This spindle passes through a gland 20 into the upper part of the discharge head above the passage 8, and has an enlarged top 21 which serves to confine a compression spring 22 urging the valve member 12 against its seat 14. The

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valve member is fitted with a resilient washer 24 to ensure a good seal when the valve is closed. This is important, since the extinguisher may be left charged for long periods and any leakage past the valve would render the extinguisher unreliable.

On the side of the discharge head 4 opposite the discharge nozzle 10 there are two vertical flanges 26 bounding a slot 27. This slot houses a lever 30, which is pivotally mounted at its lower end 32 on a pin 33 which spans the flanges 26. The upper end of the lever 30 is bent to form a nose 34 which projects inwards through a gap 35 in the base of the slot 27. The lower surface of the nose is shaped as a cam 37 which bears on a roller 36. This rests in half-bearings 38 which are fixed to the top 21 of the valve spindle 18. Since this spindle is urged upwardly by the spring 22, and the lever 30 is free to rock about the pin 33, the roller 36 normally lies in its uppermost position, which is of course determined by the engagement of the valve member 12 with the seat 14. In this position the nose 34 will normally just make contact with the roller 36 as shown and will be prevented by the spring 22 from moving further inwards. The inner vertical edge of the lever is out of contact with the base of the slot 27 and its outer vertical edge or back projects from the slot between the flanges 26. Any tendency of the lever to move completely out of the slot is stopped when the upper surface of the nose 34 comes into contact with the lower edge of a cap 40, which is screwed on to the discharge head 4. It will be seen that after the extinguisher has been assembled and is ready for use the sides of the lever 30 are largely concealed by the flanges 26 and the head of the extinguisher has a very clean and simple appearance. The flanges 26 protect the roller 36 and cam 37 from dirt and also prevent anything entering the space between the inner vertical surface of the lever and the wall of the head 4. There are no parts which might catch on, say, the sleeve of the user.

When the extinguisher is to be used the head 4 is gripped by the user with one hand. This is the natural way in which to pick up the extinguisher, and the immediate result is that squeezing pressure is exerted on the back of the lever 30. This causes the lever to rock inwards so that the cam 37 rides over the roller 36 and forces it downwards. As a result the spindle 18 is pressed downwards against the spring 22 and the valve member 12 is depressed from its seat to release the liquid from the container 2. If

the lever 30 is released before the container is empty, the valve member 12 closes again upon its seat and the remaining liquid is sealed within the container. The user can direct the jet of liquid with ease, since there is no difficulty in pointing the extinguisher in any direction, and at the same time can stop and re-start the flow as desired by releasing the squeezing action on the lever 30 and reimposing it, since whenever the lever is not pressed inwards the spring 22 will cause it to move outwards and the valve member 12 to close on its seat 8. Even if a person who seizes the apparatus on the outbreak of fire does not know how to operate it, he is certain to grasp the discharge head and the tighter he grips this the more likely he will be to start discharge of the extinguisher.

The invention is not restricted to the construction disclosed. For example, the roller 36 may be omitted, but its presence is highly advantageous in that it reduces the lateral thrust on the spindle 18 and also reduces frictional resistance in operation. Next, the head may be disposed on any convenient part of the container at any desired angle thereto.

Again the lever may be pivoted at the top of the head with its nose at the bottom, provided that the internal parts are suitably arranged.

I claim:

1. In a portable fire extinguisher, in combination, a container for fluid under pressure, a discharge head, valve means within said head adapted to control a discharge passage, and a lever lying along the surface of said head, said lever being pivoted at one end to said head and carrying at the other end a projection extending into said head and adapted on movement of said lever to engage a part of said valve means within said head to operate the same.

2. In a portable fire extinguisher, in combination, a container for fluid under pressure, a discharge head on the top of said container, a valve member movable vertically in said head to control a discharge passage, and a lever lying vertically along the surface of said head, said lever being pivoted at its lower end to said head and carrying at its upper end a projection extending into said head and adapted on movement of said lever to engage a part of said valve member within said head to operate the same.

3. In a portable fire extinguisher, in combination, a container for fluid under pressure, a discharge head having a longitudinal slot in its outer surface, valve means within said head adapted to control a discharge passage, and a lever lying along said slot and adapted to be depressed therein, said lever being pivoted at one end to said head and carrying at the other end a projection extending through the base of said slot into said head and adapted on depression of said lever to engage a part of said valve means within said head to operate the same.

4. In a portable fire extinguisher, in combination, a container for fluid under pressure, a discharge head on the top of said container, said head having a vertical slot in its outer surface, a valve member movable vertically in said head to control a discharge passage, and a lever lying along said slot and adapted to be depressed therein, said lever being pivoted at its lower end to said head and carrying at its upper end an inwardly projecting cam member extending through the base of said slot into engagement with said valve member and adapted upon depression of said lever to cause said cam member to move said valve member to open said passage.

5. In a portable fire extinguisher, the combination as claimed in claim 4, said valve member carrying at its upper end a roller adapted for engagement by said cam member.

6. In a portable fire extinguisher, the combination as claimed in claim 4, said valve member being engaged by a spring adapted to urge said member upwards to close said passage.

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