United States Patent

Sachs et al.

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[54] FIRE EXTINGUISHER

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[52] **U.S. Cl.** ..... **169/31 R**

[51] **Int. Cl.** **A62c 13/00**

[58] **Field of Search** ..... 169/31 R, 31 P

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[57] **ABSTRACT**

A portable extinguisher having a reservoir for an extinguishing medium, a functional plate secured thereto by a cut segment member having a "C"-shaped cross-section which serves to position a hood member so as to align an opening in the skirt of the hood member with an outlet nozzle in the functional plate member.

8 Claims, 4 Drawing Figures

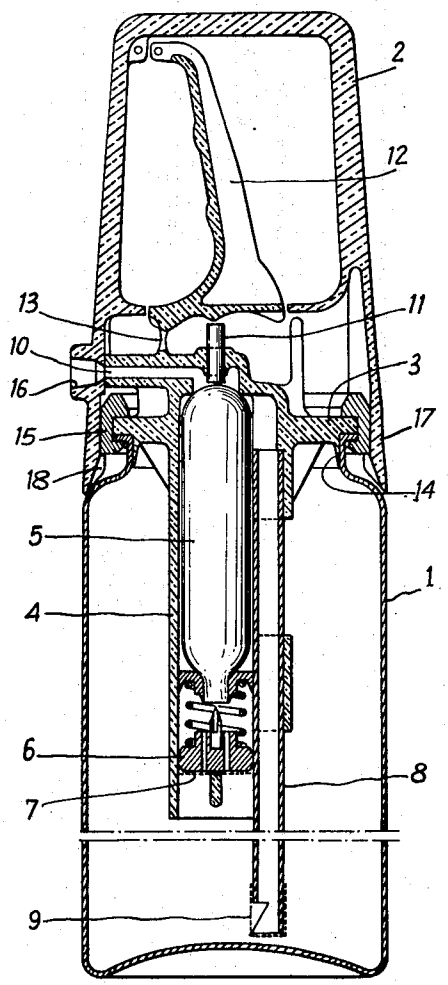


Fig. 1

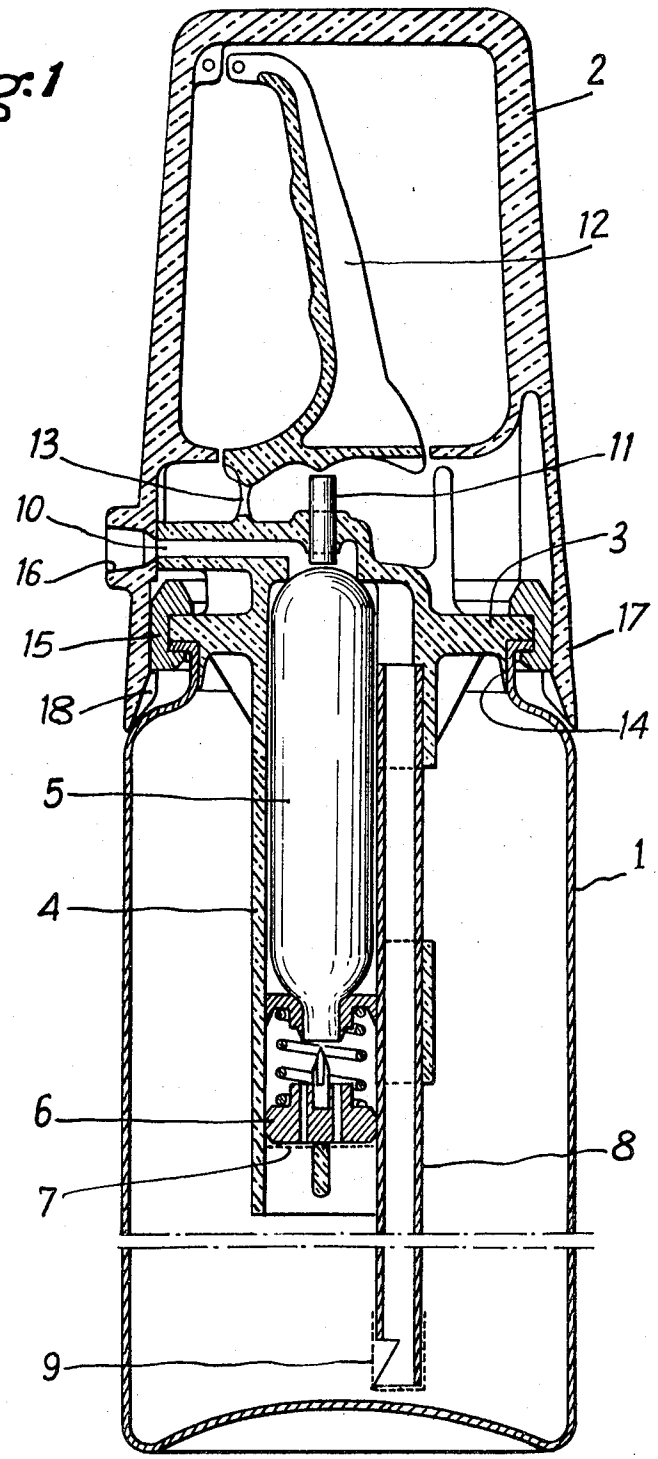


Fig. 3

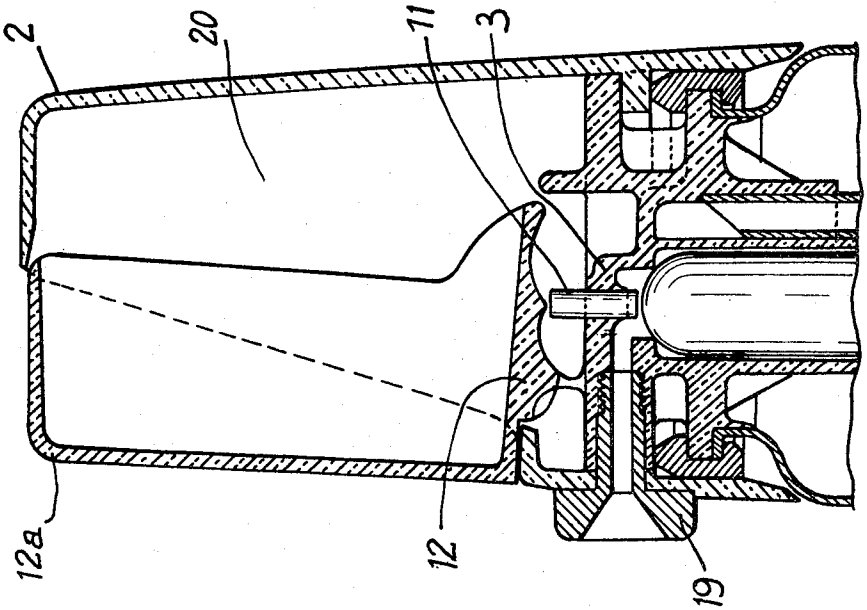


Fig. 2

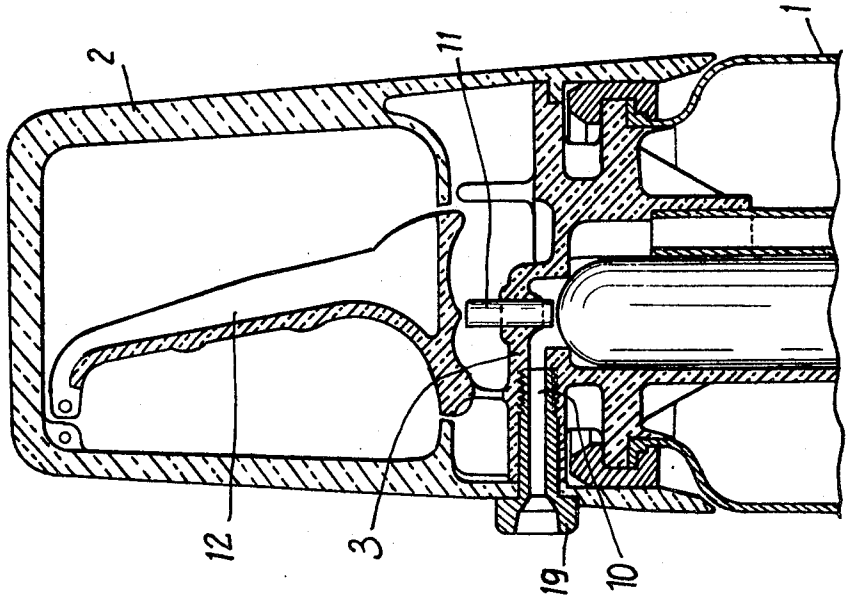
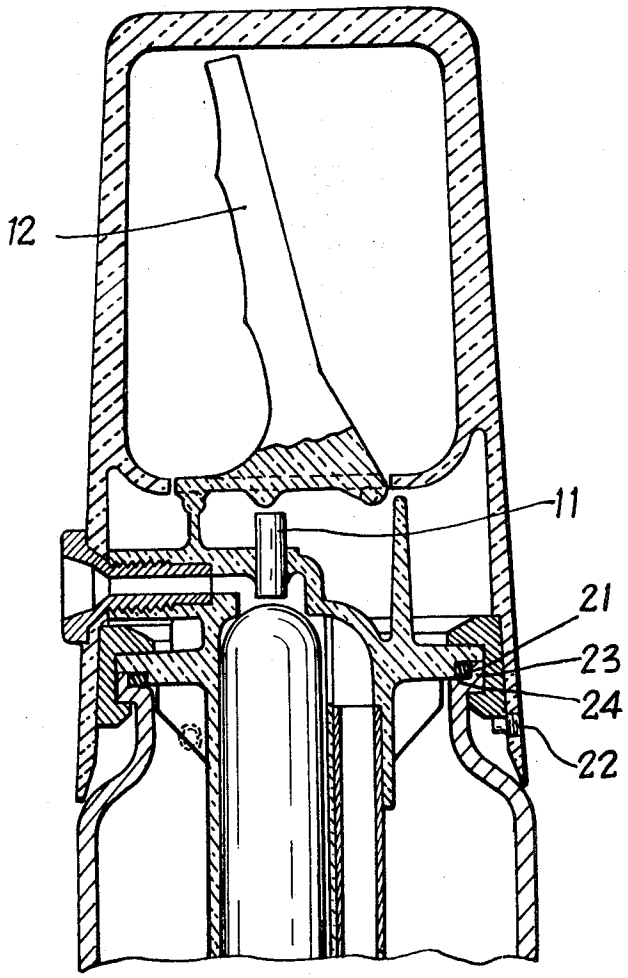


Fig. 4



FIRE EXTINGUISHER

The present invention relates to extinguishers and more particularly to portable extinguishers.

Extinguishers of this type are generally constituted by a number of separate elements, usually metallic, which are assembled in an operation which takes a relatively long period of time and sometimes requires relatively precise work. For these various reasons the prices of such devices are relatively high.

In order to avoid these disadvantages the present invention enables one to rapidly assemble the relatively simple elements thus lowering the price of the finished extinguisher.

The extinguisher of the present invention is one in which the flow of extinguishing medium is controlled by hand and comprises, a reservoir for the medium, a functional plate member at the top thereof and a hood, the plate member and the reservoir being secured together by a segment member having a "C"-shaped cross-section, which encloses the upper edge of the reservoir and the edge of the plate member, the segment member being held in proper position by the hood to provide alignment of an outlet nozzle and an opening to permit passage of the extinguishing medium.

Another feature of the invention is that the functional plate member carries a hinged handle for operating the extinguisher, the plate, the handle and the hinge therefor being formed as a single unit preferably of a plastic material in a single molding operation.

Various modifications of the present invention are described hereinafter with reference to the attached drawings in which:

FIG. 1 is a cross-sectional view of an extinguisher according to the invention,

FIG. 2 is a cross-sectional view of a modification of the extinguisher shown in FIG. 1 having a nozzle member for aligning the hood and the plate,

FIG. 3 is a cross-sectional view of another modification of the extinguisher shown in FIG. 1 having a telescoping handle, and

FIG. 4 is a cross-sectional view of still another modification of the extinguisher shown in FIG. 1 and having a different form of handle, a water-tight toric seal and means for securing the position of the hood with respect to the segment member.

Referring to FIG. 1 of the drawings, the extinguisher has a reservoir 1 made of a metal, such as steel or aluminum, or of a plastic material, a hood 2 and a functional plate member 3. The plate member 3 is of circular configuration and is provided at the center thereof with a tube 4 for supporting a sparklet 5 and a piercing element 6 having channels normally closed by an isolating sheet 7 which are opened by pressure on the sheet 7. The plate 3 is also provided with a tube 8 for the flow of the extinguishing medium to the nozzle, which tube is provided with an isolating sheet 9.

In its upper part the plate member 3 is provided with a channel 10 through which the extinguishing medium passes, the inner end of this channel forming a seat for the sparklet 5, which serves as a valve for controlling flow through the channel 10. The manual control of this valve is by the pin 11 held by slight friction in the plate member 3, the pin 11 being actuated by the handle 12 hinged at 13 to the plate member 3. As stated above the handle 12, hinge 13 and plate member 3 are preferably formed of plastic material as a single element.

At the lower part of the plate 3 there is provided at its periphery a flexible molded flange 14 which bears against the collar of the reservoir 1 for assuring a water-tight assembly.

To assure sealing engagement between the plate 3 and the reservoir 1, a cut segment 15 having a "C"-shaped cross-section is provided which may be simply split at one point on its circumference or made in two separate halves.

The sides of the hood 2 are open to permit manipulation of the handle 12. The hood is also provided with an opening 16 which is located opposite the channel 10. The lower inside portion 17 of the hood is suitably conical and the lower edge thereof is provided with shoulder elements 18 which abut the under surface of the segment 15. In this fashion the hood 2 and the segment 15 are maintained in proper position with respect to the plate 3 and the reservoir 1, whereby the opening 16 is maintained opposite the channel 10.

According to a modification not shown, the connection between the hood 2 and segment 15 may be obtained by a bayonet-type closure by sliding the shoulder elements 18 into exterior notches in segment 15 for abutment therewith after partial rotation of the hood 2.

As shown in FIG. 2 the hood 2 can be connected to the plate 3 by means of threaded channel member 19. In this case the shoulder elements 18 may be dispensed with.

As seen in FIG. 3 the hood 2 is truncated to form two lateral cheeks 20 which partially mask the handle 12. The handle includes a front portion 12a which abuts a front portion of the truncated hood. When the handle is operated it telescopes into the hood.

In FIG. 4 the handle 12 has a different form and moreover the edge of the reservoir 1 is provided with a vertical flange 23 at the top thereof providing an open space between the shoulder 24 of the reservoir and the plate 3 for receiving a toric seal 21 to assure water-tightness in place of the molded flange 14. For extra security a screw means 22 may be provided for maintaining the hood and segment in proper relative position.

The present extinguisher may be made almost entirely of molded plastic material with the exception of the sparklet 5 and the piercing element 6.

In operation, the handle 2 is actuated to depress the pin 11 so as to force the sparklet downwards against the piercing element 6 to puncture the same and release the fluid under pressure. The pressurized fluid forces the extinguishing medium through tube 8 to channel 10, the "valve" formed by the sparklet being open. When the handle is released the sparklet is moved upward by the spring forming a part of the piercing element to close the "valve" thus preventing further release of the extinguishing medium.

WE CLAIM:

1. A portable extinguisher comprising a reservoir for an extinguishing medium, said reservoir being provided with a collar having an upper marginal edge portion, a functional plate member having an outlet nozzle and a marginal edge portion, a hood member disposed over said plate member and having an opening in the skirt thereof, a cut segment member having a "C"-shaped cross-section for engaging and securing the marginal edge portions of reservoir and said plate member together, means for properly positioning said hood member with respect to said cut segment member so as to secure the opening in the skirt of said hood member in alignment with the outlet nozzle of said plate member, and means for expelling the extinguishing medium through the outlet nozzle and the opening.

2. A portable extinguisher as claimed in claim 1 wherein the functional plate member is formed of a plastic material and wherein the means for expelling the medium includes a movable operating handle and a flexible hinge element therefor, said handle member and flexible hinge element being formed of a plastic material integrally as single unit with said functional plate member.

3. A portable extinguisher as claimed in claim 1 wherein said functional plate member is formed of a plastic material and includes a depending flexible flange element adapted to engage the collar of said reservoir to form a fluid-tight seal therewith.

4. A portable extinguisher as claimed in claim 1 and further comprising a toric seal provided between the marginal edge portion of said reservoir and the marginal edge portion of said functional plate member for obtaining a fluid-tight seal therebetween.

5. A portable extinguisher as claimed in claim 1 wherein the positioning means comprises a threaded channel member inserted in the opening in said hood member and the outlet nozzle of said functional plate member to assure proper alignment thereof.

6. A portable extinguisher apparatus as claimed in claim 1 wherein said positioning means comprises shoulder elements provided at the lower edge of the inside of the skirt of said hood member for engaging said cut segment member to align the opening and the outlet nozzle.

7. A portable extinguisher as claimed in claim 1 wherein said positioning means comprises a screw member mounted in the skirt of said hood member and engaging the under side of said cut segment member.

8. A portable extinguisher as claimed in claim 2 wherein said hood member includes two lateral cheeks and an opening therebetween, the front portion of the handle occupying the front open portion of said hood member whereby said handle, when operated, telescopes into said hood member.

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