

(21) Application No 9210189.8

(22) Date of filing 12.05.1992

(71) Applicant
Lifeline Fire & Safety Limited

(Incorporated in the United Kingdom)

Lifeline House, New Barn Business Park, Merstone,
Newport, Isle of Wight, PO30 3BT, United Kingdom

(72) Inventor
Graeme D Lee

(74) Agent and/or Address for Service
Patrick Stone
28 Edenside Drive, Attleborough, Norfolk, NR17 2EL,
United Kingdom

(51) INT CL⁵
A62C 37/00

(52) UK CL (Edition L)
A5A A14E1

(56) Documents cited
US 4984637 A US 4905765 A
WPI Acc.No. 86-177138/28, & DE3447815

(58) Field of search
UK CL (Edition L) A5A A14E1
INT CL⁵ A62C
Online database: WPI

(54) Improvements relating to fire extinguishing apparatus

(57) Fire extinguishing apparatus having an operating head (16) containing an actuator (26) preferably electrically operable by a remote switch (28), the head including a supplementary housing (20) containing a battery power source (30) preferably wired to the actuator through the terminals (19) of a power input socket (18) on the head, which socket is conventionally used to plug in a remote power source.

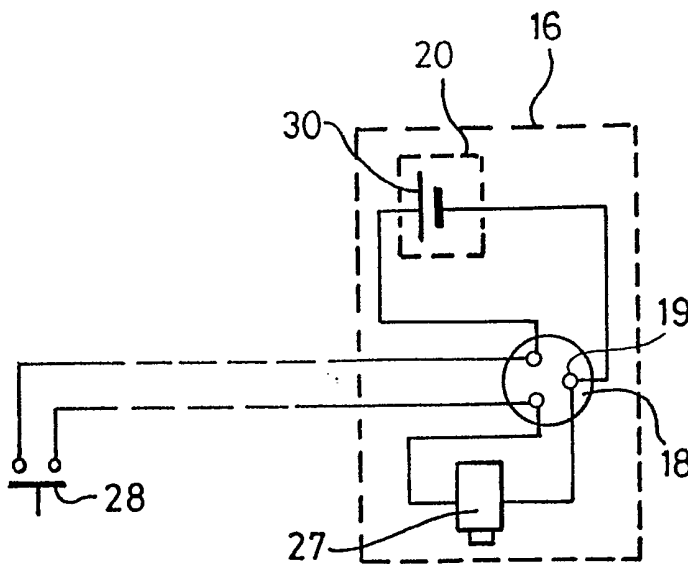


Fig. 9

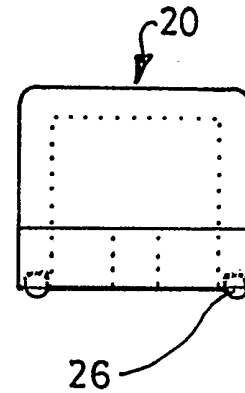


Fig. 7

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1990.

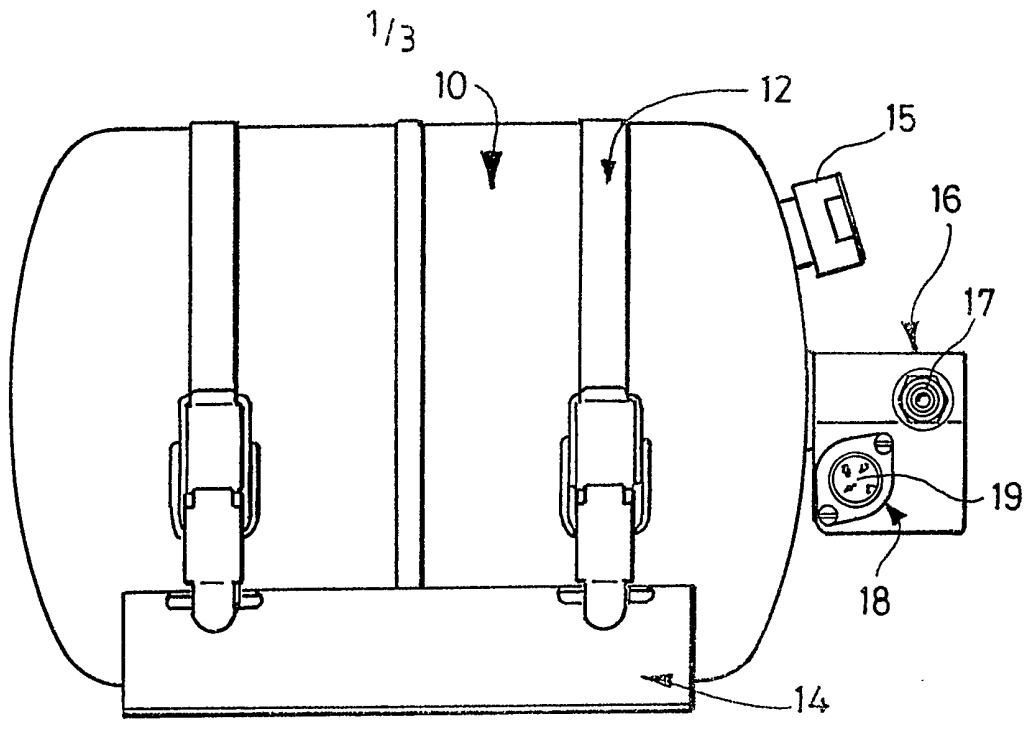


Fig. 1

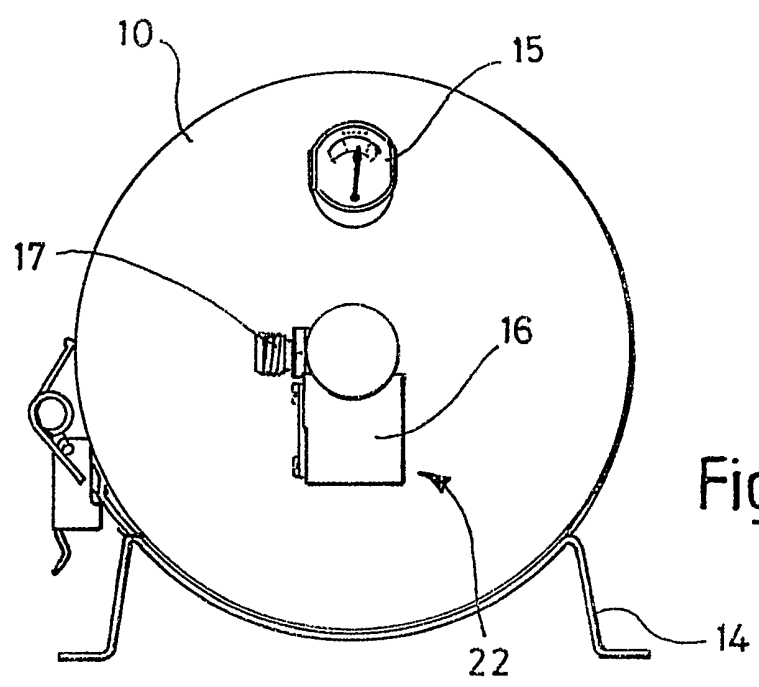


Fig. 2

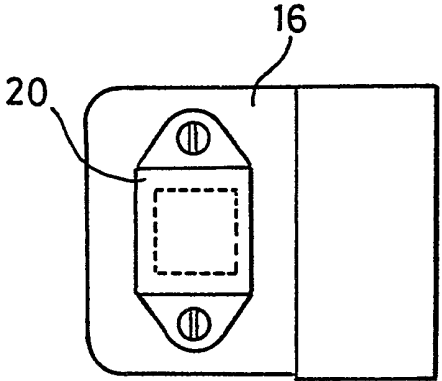


Fig 3

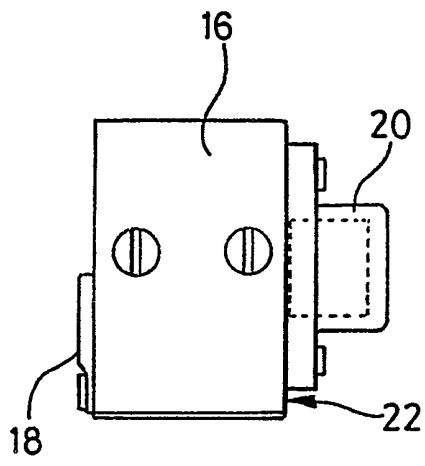


Fig 4

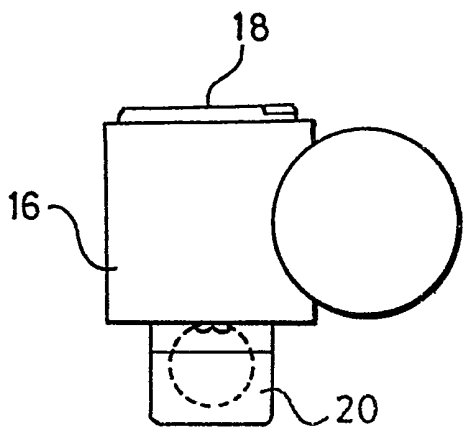


Fig 5

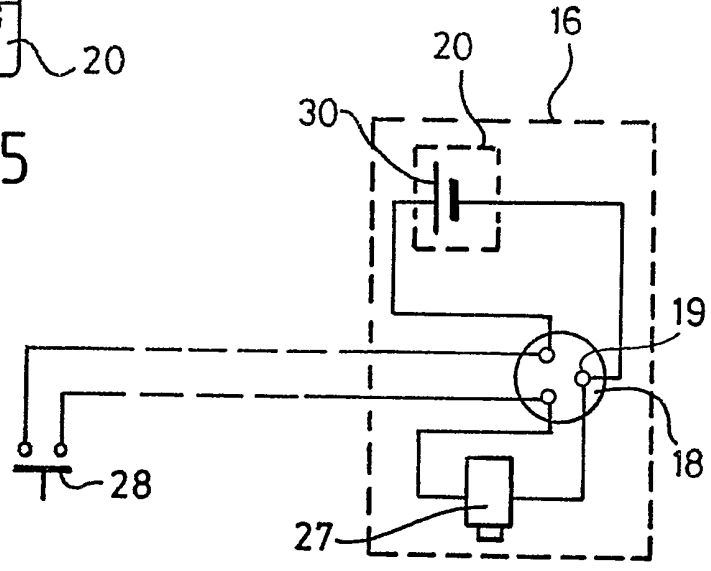


Fig. 9

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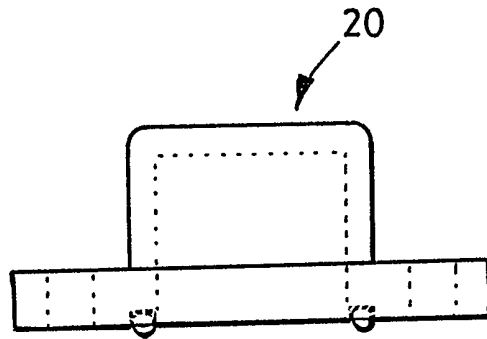
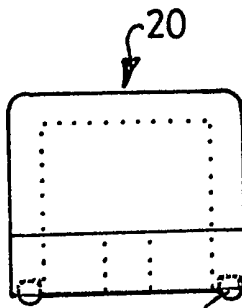


Fig. 6



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Fig. 7

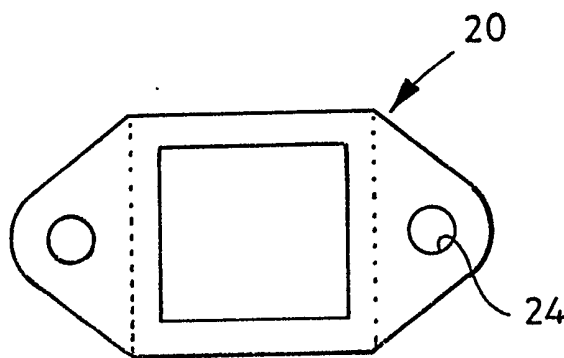


Fig. 8

Improvements relating to Fire ExtinguishingApparatus

This invention relates to a fire extinguishing apparatus, and in particular to fire extinguishing apparatus which is equipped with an actuator operated by electric power and which is hereinafter referred to as fire extinguishing apparatus of
5 the kind described.

Conventionally, fire extinguishing apparatus of the kind described comprises a cylinder in which the fire extinguishing medium is stored under pressure, to which cylinder is fixed
10 an operating head containing the actuator and provided with an electrical socket into which can be plugged a power supply line from an entirely separate power source. The fire extinguishing apparatus is thus not wholly self contained and it has been found in practice that this can be decidedly
15 disadvantageous.

According to the invention, therefore, there is provided fire extinguishing apparatus of the kind described having an operating head containing an electrically operable actuator
20 wired to a battery power source contained within said operating head.

The actuator in the operating head conveniently comprises an electro-chemically operated piston which is reliably operable
25 by the d.c. voltage available from the battery, the device when actuated causing the piston to disrupt a seal so that a fire extinguishing medium is ejected through an extinguisher nozzle.

Actuation of the device is preferably initiated by operation of a switch. This switch, preferably a push-button switch, is usually located remote from the extinguishing apparatus.

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In one arrangement, the invention is applied as a modification of existing fire extinguishing apparatus which has an operating head equipped with a socket normally acting as a power input socket, i.e. a socket to which the normally
10 separate power source is connectable. In the arrangement in accordance with the invention, the battery source is contained in a supplementary housing attached to the standard operating head, the battery source is wired to the normal power input socket, and wires from the remote switch
15 plug into the said socket to enable actuation of the electro-chemically operated piston to be initiated. Connections from the battery source and the actuator to the socket may be permanent, or may also be effected through the plug.

20 It is thus possible, if appropriate, for all wiring except that extending to the remote switch to be enclosed within the operating head.

The invention is exemplified in the following description
25 with reference to the accompanying drawings, in which:-

Figure 1 shows fire extinguishing apparatus of the kind described in side elevation;

30 Figure 2 shows the apparatus in end elevation;

Figures 3 to 5 show, in three views at right angles, the extinguisher operating head with a supplementary battery housing attached;

Figures 6 to 8 show a battery housing in side elevation, end elevation and plan views, respectively; and

Figure 9 is a circuit diagram.

5

Referring first to Figures 1 and 2, there is shown fire extinguishing apparatus comprising a cylinder 10 containing the fire extinguishing medium, secured by readily releasable straps 12 to a carrier 14 which may be fixed to a supporting surface in any convenient position and orientation such that the apparatus is readily available for use. Reference 15 denotes a pressure gauge.

Fixed to the cylinder 10 is an operating head 16 containing an actuator (not shown) in the form of an electro-chemically operated piston. When the device is actuated, the piston breaks a seal which allows fire extinguishing medium to be ejected from a nozzle 17. The head 16 is also equipped with a power input socket 18 to which the actuator is wired internally of the head. This socket 18 has three terminal points 19.

In accordance with the invention, as shown in Figures 3 to 5, a mounting 20 for a battery power source (not shown) is attached to the face 22 of the operating head 16. This mounting 20 is shown separately in Figures 6 to 8, and comprises a flanged supplementary housing, for example moulded of plastics material, equipped with holes 24 for mounting screws and an O-ring 26 which seals the interior of the supplementary housing in which the battery is contained.

The housing 20 fits to the face 22 of the head so that the battery can be wired, via a switch, to the power input socket 18. The wiring (not shown) between the battery and

the socket may pass out of the housing 20 through seals at small holes in the housing, but could alternatively be wholly contained within the operating head. Said wiring could optionally be permanently wired to the terminals of the socket, but preferably connects to it through a plug which is also employed to connect a remote push-button switch into the circuit.

Thus, a circuit diagram is shown in Figure 9, wherein the same references as in preceding figures are used for corresponding parts. Additionally, the electro-chemically operated piston unit is referenced 26 and the remote switch is referenced 28. The battery in the supplementary housing 20 is referenced 30.

15

The actuator within the operating head 16 is designed for reliable operation by the relatively low voltage available from the battery source. In use, actuation is achieved by closing the afore-mentioned remote switch.

20

Various modifications of the above-described and illustrated arrangement are possible within the scope of the invention hereinbefore defined.

Claims

1. Fire extinguishing apparatus which is equipped with an actuator operated by electric power, wherein the apparatus has an operating head containing an electrically operable actuator wired to a battery power source contained within
5 said operating head.

2. Apparatus according to claim 1, wherein the actuator in the operating head comprises an electro-chemically operated piston which is reliably operable by the d.c.
10 voltage available from the battery, the device when actuated causing the piston to disrupt a seal so that a fire extinguishing medium is ejected through an extinguisher nozzle.

15 3. Apparatus according to claim 1 or claim 2, wherein actuation of the actuator is initiated by operation of a switch.

4. Apparatus according to claim 3, wherein the switch is
20 remotely located from the extinguishing apparatus.

5. Apparatus according to claim 3 or claim 4, wherein the switch is a push-button switch.

25 6. Fire extinguishing apparatus having an operating head containing an actuator operated by electric power normally intended to be supplied from a remote power source through a plug inserted into a power input socket on the operating head, said apparatus being modified in that the operating
30 head includes a supplementary housing attached thereto, said supplementary housing containing a battery wired to the actuator through the terminals of the power input socket.

7. Apparatus according to claim 6, wherein the actuator is operable by a switch also connected or connectable in circuit through the power input socket.

5 8. Apparatus according to claim 7, wherein the switch is remotely located from the apparatus.

9. Apparatus according to claim 7 or claim 8, wherein the switch is a push-button switch.

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10. Apparatus according to any of claims 7 to 9, wherein the remote switch connects to the power input socket through a plug.

15 11. Apparatus according to claim 10, wherein the battery and actuator are also connected or connectable to the terminals of the power input socket through the plug.

20 12. Apparatus according to any of claims 7 to 10, wherein the battery and actuator are permanently wired to the terminals of the power input socket, the wiring being wholly contained within the operating head.

25 13. Fire extinguishing apparatus substantially as hereinbefore described with reference to the accompanying drawings.

Patents Act 1977
Examiner's report to the Comptroller under
Section 17 (The Search Report)

Application number

GB 9210189.8

Relevant Technical fields

(i) UK CI (Edition L) A5A (A14E1)

(ii) Int CI (Edition 5) A62C

Search Examiner

DR D ELSY

Date of Search

16 JULY 1993

Databases (see over)

(i) UK Patent Office

(ii) ONLINE DATABASE: WPI

Documents considered relevant following a search in respect of claims 1-13

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
X	US 4984637 (FINNIGAN) See especially column 2 lines 17-24	1-13
X	US 4905765 (HEIN) See column 1 lines 59-65 and column 5 lines 25-33	1-13
X	WPI Acc No: 86-177138/28, & DE 3447815	1-13



Category	Identity of document and relevant passages	Relevant to claim(s)

Categories of documents

X: Document indicating lack of novelty or of inventive step.

Y: Document indicating lack of inventive step if combined with one or more other documents of the same category.

A: Document indicating technological background and/or state of the art.

P: Document published on or after the declared priority date but before the filing date of the present application.

E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.

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