Aug. 7, 1934. J. A. GOODALL 1,968,825

PORTABLE FIRE EXTINGUISHER

Filed Feb. 27, 1930

Fig. 1.

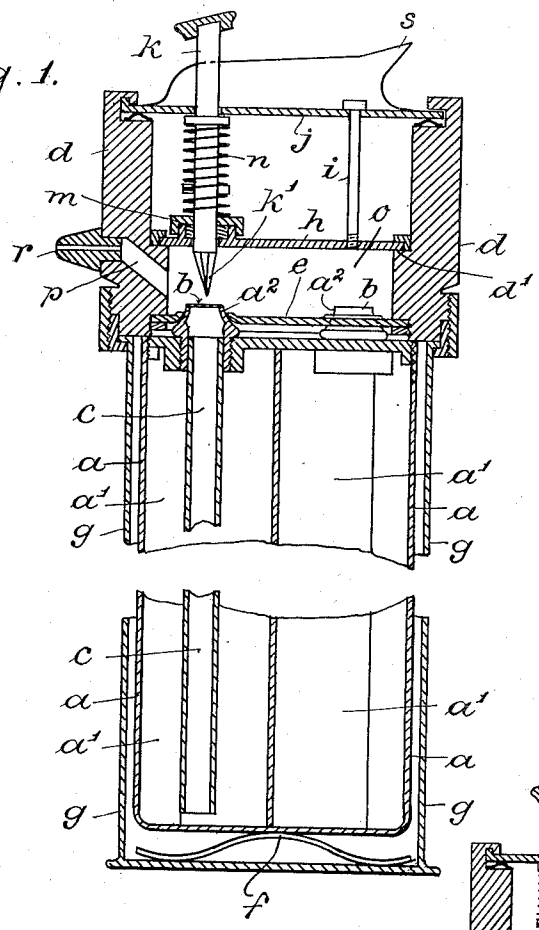


Fig. 3

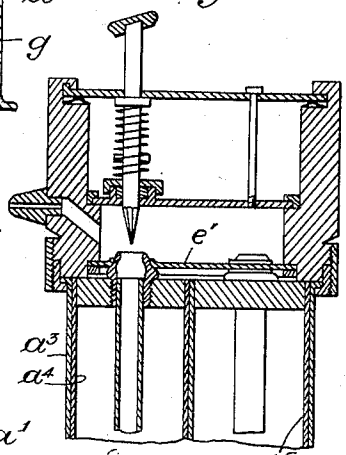
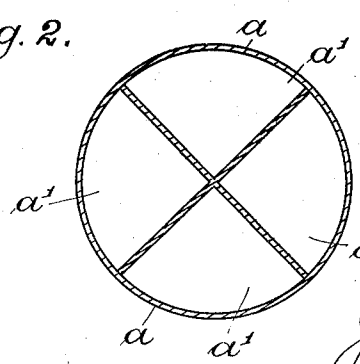


Fig. 2.



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PORTABLE FIRE EXTINGUISHER

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3 Claims. (Cl. 169—31)

My invention in or relating to portable fire extinguishers has reference to the type in which a container, in which an extinguishing medium is hermetically sealed under pressure, has associated with it a detachable head containing a piercing member by operation of which the seal of the container may be broken, and a discharge nozzle through which the contents of the container may be expelled when the seal is broken.

It is desirable, in an extinguisher of this description, that the container shall be of a capacity sufficient to enable a relatively large fire to be effectively dealt with, but that means shall be provided whereby in the event of the whole of the contents not being required at one time the container can be re-sealed or closed to retain the unexpended portion of the contents.

Hitherto it has been attempted to achieve this by associating with the piercing member a valve controlling the discharge passage, so that when desired the said valve could be caused to seat itself against a suitable face and close communication between the container and the discharge passage.

Assuming a perfectly good pressure-tight joint between the container and the head carrying the piercing member, valve, discharge passage and nozzle, together with an accurate seating of the valve, the construction referred to will function in the manner intended. If, however, a container becomes expended and a new container has to be applied, it is found that it is difficult and in fact almost impossible by mere manual operation to screw on the container to the head sufficiently tightly to make a pressure-tight joint between the parts, with the result that any unexpended portion of the charge which it has been desired to retain has leaked away and has not been available for use when required.

The present invention has for its object to provide a portable fire extinguisher of the general type referred to in which the objection noted will be overcome and in which, whilst a total charge of any desired amount may be provided, only that portion of the charge which is required for immediate use will be unsealed, the remainder of the charge being kept hermetically sealed and its pressure thus preserved, until it is wanted.

An extinguisher according to the invention is characterized in that the medium is carried in a series of sealed compartments or containers, the contents of any one of which may be released and afterward replaced, without affecting those of any other or others in the series. This may be achieved by the employment of a single container divided into a series of vertical compartments which are separately sealed, or by the employment of a series of separate sealed containers. Associated with the container or with the series of containers, is a head having a rotatable part carrying a piercing member, which can be positioned over either or any of the outlets of the compartments into which the container is divided, or of the series of separate containers employed. Preferably a chamber common to all the outlets is provided in the head and a discharge nozzle communicates with this chamber, but the discharge nozzle might be arranged to move with the rotatable part of the head, and the piercing member. In an alternative arrangement a single container may be divided into a series of compartments and a single capsule be employed to seal all the compartments. Such an arrangement has, however, the disadvantage that replacement of the charge of any compartment cannot very well be effected.

The accompanying drawing shows at

Fig. 1 a sectional elevation of a device embodying the invention,

Fig. 2 being a sectional plan view of one form which the container may take.

Fig. 3 is a sectional elevation of a modification of the invention.

Referring to the drawing, *a* represents a container divided into a series, in this instance four, of vertical compartments *a'*, each having at its upper end an outlet nipple a^2 capable of being hermetically sealed by a metal capsule *b* and provided with a dip tube *c* reaching down to near the bottom end of the compartment.

A head *d* has a plate or disc *e*, of leather or other suitable and preferably flexible jointing material and provided with a series of openings through which the outlet nipples a^2 may extend. A tight joint is made between the plate *e* and the outlet nipples by causing the container to be pressed upwardly by a spring *f* disposed between the lower end of the container and the lower end of an outer casing *g* detachably held to the head *d*.

A plate *h* rotatable on a shoulder *d'* formed in the head *d*, and suitably held down to said shoulder to form a good joint therewith, is connected by spacing members such as *i* to a plate *j* also rotatable in the head *d*. A manually-operable spindle *k*, formed at its lower end as a piercing member *k'*, is slidable through an opening in the upper plate *j* and through a stuffing box *m*, carried by the plate *h*. A spring *n* is provided to hold

the spindle *k* normally raised and to raise it after it has been depressed.

From the chamber *o* constituted between the plates *h* and *e*, there leads a passage *p* the outer end of which is furnished with a discharge nipple *r*.

The rotatable member of the head may carry a pointer *s* to indicate, by means of marks on the fixed part of the head, which compartment of a container the piercing member is positioned over and to facilitate the positioning of the said member when it is rotated, away from an empty compartment to a full one.

If the contents of one compartment of the container do not suffice to extinguish a fire, the rotatable part of the head can be moved and the contents of another compartment released. If, however, the contents of one compartment suffice, then the contents of the other compartment, or compartments remain sealed and are thus preserved under full pressure until required.

It will be apparent that although I have referred to the use of a container divided into two or more separately sealed compartments, I may employ a series of separate containers so associated with the head that the piercing member can be rotated from one to another as required.

Fig. 3 shows a construction in which an outer casing a^3 is provided with a pair of sealed containers a^4 and a^5, the upper ends of which engage a plate e' carried by the head, which is of the same structure as in the form of the invention shown in Fig. 1.

The actual details of construction and arrangement of the head in either modification of the invention and the manner in which the piercing member is rotatably carried thereby, as also the manner in which the contents of a container or container compartment are conducted to the discharge nozzle when released by piercing of the seal of that container or compartment, are obviously capable of variation in many ways from the particular embodiments shown and described, which are only given as illustrations of practical ways in which the invention can be carried out.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A portable fire extinguisher comprising a head having a casing detachably secured thereto, a container divided into a plurality of vertical compartments, within said casing, a piercing member rotatably carried by the head in such manner that the seal of any desired compartment may be pierced, said head having a chamber to conduct to a discharge nozzle in the head the contents of any compartment.

2. A portable fire extinguisher comprising a rotatable head having a casing detachably secured thereto, a plurality of sealed containers in said casing, a piercing member carried by the head in such manner that the seal of any desired one of said containers may be pierced, and said head having a nozzle and a chamber therein for discharging the contents of the containers.

3. A portable fire extinguisher comprising a head having a casing detachably secured thereto, a plurality of sealed fluid retaining vessels in said casing, piercing means carried by said head for selectively piercing said sealed fluid retaining vessels, and said head having a nozzle and a chamber therein for discharging the contents of the fluid retaining vessels.

JOHN ARTHUR GOODALL.