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SQUEEZE GRIP FOR PORTABLE FIRE EXTINGUISHERS

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Fig. 2.

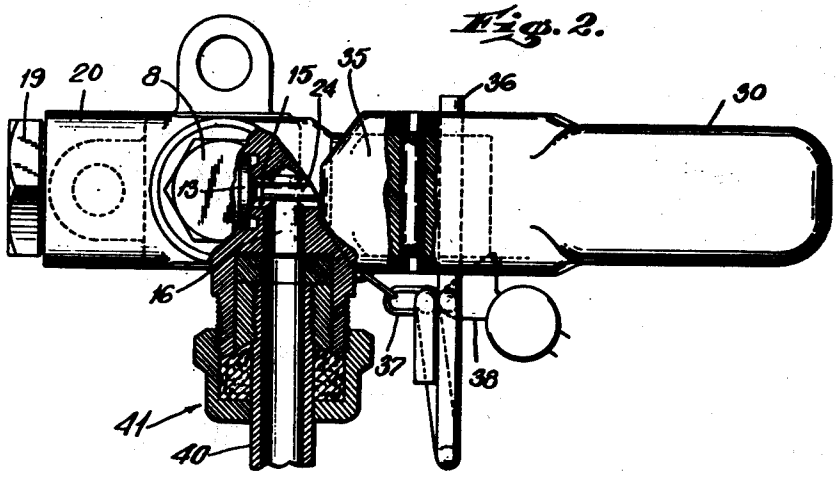
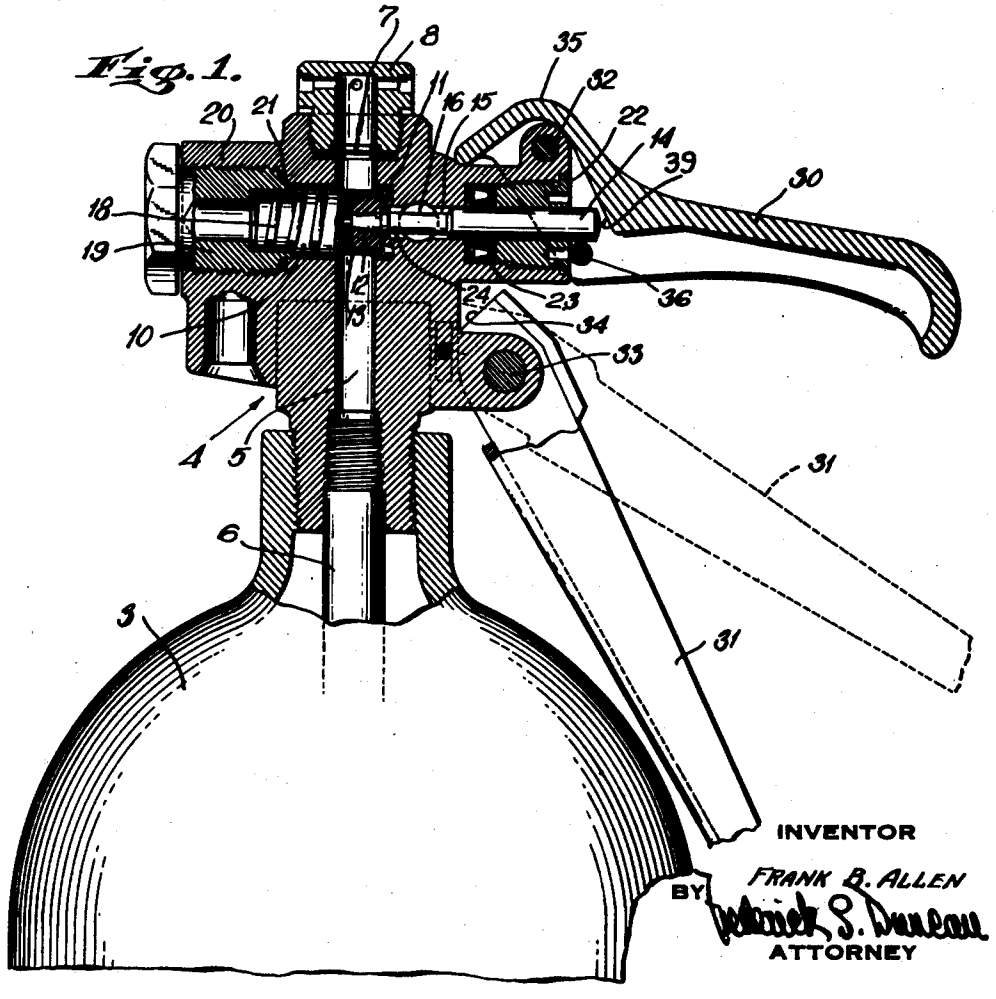


Fig. 1.



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SQUEEZE GRIP FOR PORTABLE FIRE EXTINGUISHERS

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5 Claims. (Cl. 222—400)

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This invention relates to improvements for use in connection with portable high pressure fluid containers, and is a continuation of my copending application Serial No. 464,686, filed November 5, 1942, for Squeeze grip for portable fire extinguisher, now abandoned, the subject matter of said prior application being incorporated in this application.

Among the objects of this invention are improvements in handles for carrying high pressure fluid containers and for releasing and discharging the fluid from the container.

A more specific object of this invention is the provision of a handle comprising a lower handle member which may be moved against and away from the container and an upper handle member which may be moved when released toward the lower handle member for the purpose of operating the discharge mechanism, the members of the handle being so arranged that they may be gripped by one hand for the purpose of carrying the container and for the purpose of operating the discharge mechanism.

Other objects of this invention consist in constructing the handle in such a manner that the members thereof may be made by forging so as to provide for strong handle members not liable to be broken during transportation.

Other objects of this invention will appear from the following description taken in connection with the drawings in which—

Fig. 1 shows in vertical section a discharge head provided with our improvements and attached to a container; and

Fig. 2 is a top plan view of the discharge head partly in horizontal section.

The portable container disclosed at 3 may be of the usual form and provided with a neck into which is threaded a discharge head generally indicated at 4. This discharge head is provided with a vertical bore 5 enlarged and threaded at its lower end to receive and support the usual syphon tube 6. The upper end of the bore 5 is enlarged as usual to provide a seat for a safety disc 7 held in position by means of the usual form of anti-recoil plug 8.

The discharge head is also provided with a horizontal valve chamber 10 intersecting the bore 5 and provided at one end with a valve seat 11 on which is seated a valve 12 carried in a cup-shaped valve carrier 13 provided with a valve stem 14 extending and operating in a bore 15 communicating with the valve chamber 10 and extending laterally through the side of the discharge head and

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also communicating with a discharge bore 16 extending at right angles thereto.

The valve 12 is held against its seat 11 by a spring 18 seated against a plug 19 threaded into a boss 20 and against a washer 21 to effect a fluid tight connection between the plug 19 and the body of the discharge head.

The bore 15 is enlarged and threaded at its outer end for the reception of a valve stem guiding sleeve 22 and a packing and sealing gasket 23. The valve stem 14 is enlarged at its outer end to guidingly fit and operate in the bore 15 in the discharge head and in the bore in the sleeve 22.

The inner end of the valve stem adjacent the valve is reduced as indicated at 24 to provide a space between this part of the valve stem and the wall of the bore 15 to permit fluid released by the valve to discharge around the valve stem into the discharge bore 16 and to permit fluid forced in through the discharge port 16 during refilling to pass through this space past the valve into the container.

My improved grip-handle mechanism comprises a pair of members 30 and 31 arranged in a vertical plane and pivoted as indicated at 32 and 33 to lugs on the discharge casing as more clearly illustrated in Fig. 1. The lower member 31 may be moved from the full line position disclosed in Fig. 1 in which it rests against the side of the container into the dotted line position determined by engagement of its pivoted end 34 with the discharge head as shown in Fig. 1 when the container is lifted by the member 31, and which is preferably at an angle of approximately 30° from a horizontal position through the discharge head. This construction provides for a better angular relation between the carrying member or handle proper 31 and the vertical axis of the container.

The upper or valve operating member 30 is provided with an extension 35 at its pivoted end to engage the discharge head to limit its upward movement and its downward movement may be limited by a withdrawable releasing pin 36 which may be anchored to the discharge head by means of a chain 37 as shown or in any other suitable manner, the releasing pin 36 being sealed by a conventional sealing member 38.

When the releasing pin 36 is in the position indicated in the figures the handle members 30 and 31 may be gripped by one hand and the container may be lifted and carried from place to place.

The upper member 30 is provided with a valve operating surface 39 downwardly directed and preferably outwardly sloping to engage the end of the valve stem 14 and unseat the valve 12 when

the upper member 30 is moved downwardly toward the lower member or carrying handle 31 after the releasing pin has been withdrawn.

Normally the releasing pin is in the locking position disclosed in the figures and when it is desired to carry the portable fire extinguisher both of the handle members 30 and 31 are gripped by one hand and the extinguisher is carried to the place where it is desired to use the same. When it is desired to discharge the fluid from the container the releasing pin is withdrawn and this may be done by the left hand without releasing the right hand from the handle members 30 and 31, it being possible to support a greater part of the weight on the lower member 31 and to release the pressure on the upper member 30 to permit the ready withdrawal of the releasing pin. When the pin is withdrawn the upper member 30 may be pressed downwardly toward the lower member 31 without removing the hand from the members and by merely closing the hand.

Provision as usual as disclosed in Fig. 2 is made for connecting a discharge pipe 40 to the discharge port 16. The coupling generally indicated at 41 is readily removable for the purpose of removing the discharge pipe and connecting a filler pipe to the discharge port for refilling the container.

While I have illustrated and specifically described a preferred embodiment, it is to be understood that I reserve the right to all changes and modifications falling within the principles of this invention and the scope of the appended claims.

I claim:

1. A combination discharge head and squeeze-grip handle for a fire extinguisher including a container for fire extinguishing fluid comprising, a discharge head for the container adapted to be secured to the top thereof, the discharge head having fluid passage means providing an outlet for fluid in the container, valve means to close the fluid passage means, a valve operating member operatively engaging the valve means and extending outwardly from one side of the discharge head, a lower grip handle on the discharge head on the said one side thereof under the valve operating member, pivotal mounting means on the said one side of the discharge head, and an upper grip handle member carried by the pivotal mounting means and extending above the valve operating member, the upper grip handle member having on its lower surface a downwardly directed portion positioned on the outward side of the pivotal mounting, the downwardly directed portion adapted to operatively engage the valve operating member to cause lateral movement thereof, whereby when the grip handle members are squeezed together the valve operating member is actuated laterally to cause the release of the fire extinguishing fluid.

2. A combination discharge head and squeeze-grip handle for a fire extinguisher including a container for a fire extinguishing fluid comprising, a discharge head for the container adapted to be secured to the top thereof, the discharge head having a passage extending therethrough in fluid communication with the container, the passage including a valve chamber, a valve seat in the valve chamber about the passage, a valve member adapted to engage the valve seat to close the passage, a horizontally extending valve operating member operatively engaging the valve member and extending outwardly from one side of the discharge head, a lower grip handle on the discharge head on the one side thereof under the valve operating member, the discharge head having an upper apertured lug positioned on the one side thereof, and an upper grip handle member pivotally mounted on the upper apertured lug and extending above the valve operating member, the upper grip handle member having on its lower surface a downwardly directed outwardly sloping portion positioned on the outward side of the pivotal mounting, the downwardly directed portion adapted to engage the valve operating member to cause lateral movement thereof, whereby when the grip handles are squeezed together the valve operating member is actuated to cause the release of the fire extinguishing fluid.

3. A combination discharge head and squeeze-grip handle for a fire extinguisher including a container for a fire extinguisher fluid expellable under its own pressure comprising, a discharge head for the container adapted to be secured to the top thereof, the discharge head having an extension at one side of its upper portion, the discharge head having a passage extending therethrough in fluid communication with the container, the passage including a valve chamber, a valve seat in the side wall of the valve chamber about the outlet thereof, a horizontally movable valve member adapted to engage the valve seat to close the passage, a horizontally extending valve operating member operatively engaging the valve member and projecting through the extension on the said one side of the discharge head, and a lower grip handle member extending from the said one side of the discharge head, an apertured lug providing pivotal mounting means on the one side of the discharge head, an upper grip handle member pivotally carried by the said mounting means, the inner end of the upper handle member adapted to abut against the top surface of the extension to restrict its upper angular movement, the upper grip handle member having on its lower surface a downwardly directed portion positioned outwardly of the pivotal mounting, the downwardly directed portion adapted to slidably engage the outwardly projecting end of the valve operating member whereby the lower grip handle may be held by the fingers of an operator while the upper grip handle may be pressed by the palm of the same hand of the operator to release the fire extinguishing fluid.

4. A combination discharge head and squeeze-grip handle for a fire extinguisher including a container for a fire extinguisher fluid expellable under its own pressure comprising, a discharge head for the container adapted to be secured to the top thereof, the discharge head having an extension at one side of its upper portion, the discharge head having a single passage extending therethrough in fluid communication with the container, the passage including a valve chamber, a valve seat in the side wall of the valve chamber about the outlet thereof, a horizontally movable valve member adapted to engage the valve seat to close the passage and urged against its seat by the pressure of fluid in the container, a horizontally extending valve operating member operatively engaging the valve member and projecting through the extension on the said one side of the discharge head, a lower grip handle member secured to the said one side of the discharge head, pivotal mounting means on the said one side of the discharge head, and an upper grip handle member pivotally carried by the said pivotal mounting means, the inner end of the upper handle member adapted to abut against the top surface of the extension to restrict its upper an-

gular movement, the upper grip handle member having on its lower surface a downwardly directed portion positioned outwardly of the pivotal mounting, the downwardly directed portion adapted to slidably engage the outwardly projecting end of the valve operating member to move it laterally inwardly to unseat the valve member whereby the lower grip handle may be held by the fingers of an operator while the upper grip handle may be pressed by the palm of the same hand of the operator to release fire extinguishing fluid.

5. A combination discharge head and squeeze-grip handle for a fire extinguisher including an elongated vertically extending container for a fire extinguisher fluid expellable under its own pressure comprising, a discharge head for the container adapted to be secured to the top thereof, the discharge head having an extension at one side of its upper portion, an upper apertured lug on the top of the extension at the end thereof, the discharge head having a lower apertured lug on its lower portion positioned in a vertical plane under the upper lug, the discharge head having a single passage extending therethrough in fluid communication with the container, the passage including a valve chamber, a valve seat in the side wall of the valve chamber about the outlet thereof, a horizontally movable valve member adapted to engage the valve seat to close the passage and urged against its seat by the pressure of fluid in the container, a horizontally extending valve operating member operatively engaging the valve member and projecting through the extension on the side of the discharge head under the upper apertured lug, a lower grip handle member pivotally carried by the lower apertured lug, the inner end of the lower grip handle member adapted to abut against the outer side surface of the discharge head to restrict an upward angular movement of the lower handle

member to approximately 30° below a horizontal plane through the discharge head, the lower grip handle member adapted to be swung downwardly against the container, the lower grip handle member having a cross-sectional shape of channel form, and an upper grip handle member pivotally carried by the upper apertured lug, the upper grip handle member also having a cross-sectional shape of channel form, the inner end of the upper grip handle member adapted to abut against the top surface of the extension to restrict its upper angular movement, the upper grip handle member having on its lower surface a downwardly directed portion positioned outwardly of the pivotal mounting, the downwardly directed portion adapted to slidably engage the outwardly projecting end of the valve operating member to move it inwardly to unseat the valve member and release the fire extinguishing fluid, whereby the lower grip handle is adapted to be held by the fingers of the operator of the extinguisher while the palm of the hand may be pressed against the upper grip handle to depress the same and release the fluid leaving the other hand of the operator free, the angular position of the lower grip handle providing a balanced relationship between the carrying member and the vertical axis of the container.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,375,615	Boal	May 8, 1945

FOREIGN PATENTS

Number	Country	Date
134,561	Switzerland	Oct. 16, 1929