PORTABLE FIRE EXTINGUISHING APPARATUS

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1. The present invention relates to portable fire extinguishers, and more particularly to improvements in such extinguishers wherein a pressure medium under the control of the operator is utilized to effect the discharge of a fluid fire extinguishing medium, such as a liquid or a free flowing dry powder.

An object of the present invention is to improve such extinguishers by providing a simple, practical, lightweight and compact discharge control head or valve unit.

Another object is to provide an improved discharge control head or unit wherein the discharge of the extinguishing medium and the release of the pressure medium are effected substantially simultaneously and wherein the flow of both the extinguishing medium and the pressure medium can be shut off at the will of the operator, so as to permit intermittent discharge and/or conservation of the medium.

Another object is to facilitate operation of the discharge control head or unit by unskilled persons.

Another object is to provide a combined carrying hand and discharge control unit wherein the carrying and operating means are so associated as to enable the extinguisher to be brought into action in a minimum period of time upon being carried to the location of the fire.

Another object is to provide an extinguisher having a substantially unobstructed extinguishing medium outlet passage including a hose, thereby enabling the same to be used to good advantage in rapidly discharging, at a substantially uniform rate, dry powder or liquids, for example, viscous liquids.

A further object is to prevent clogging of the extinguisher hose by locating the fire extinguishing medium discharge control valve at the entrance to the hose.

Other and further objects of the invention will be apparent upon consideration of the illustrative embodiment about to be described, or will be indicated by the appended claims, and various advantages not referred to herein will be to one skilled in the art upon employment of the invention in practice.

A preferred embodiment of the invention has been chosen for purposes of illustration and description, and is shown in the accompanying drawings, forming a part of the specification, wherein:

Figure 1 is a fragmentary elevational view of fire extinguishing apparatus in accordance with the present invention.

Figure 2 is a sectional view taken substantially along the line 2—2 on Figure 1, illustrating the elements of the discharge control head or unit in normal position prior to operation thereof.

Figure 3 is a plan view of the apparatus shown in Figure 1.

Figure 4 is a fragmentary sectional view of the upper end of the apparatus shown in Figure 1, illustrating the discharge control unit elements in operated position.

Figure 5 is a fragmentary sectional view taken substantially along the line 5—5 on Figure 2.

Referring to the drawings, there is shown a portable fire extinguisher generally comprising a container 10 for storing a charge of fire extinguishing medium, a discharge control unit 11, including a carrying handle 12, a discharge directing shield 18 connected to the unit by a hose 9, and a cartridge 13 for storing pressure medium, which is supported by the unit 11.

The container 10, as shown in Figures 1 and 2, comprises a cylindrical side wall 14, a lower end wall or base 15 formed to support the container in an upright position, and an upper end wall 16. The wall 16 has an opening 17 formed with a collar 19 in which a spud 20 is secured for mounting the discharge control unit 11, and has a filling opening 21 formed with a collar 22 in which a bushing 24 is secured for threadedly securing a cap or closure 25.

The spud 20, as shown in Figures 2 and 3, is provided with a sleeve 26 positioned in the collar 19 and welded thereto, and has a triangular flange 27 formed with threaded apertures 28 adapted to receive screws 29 (Figure 2) and 31 (Figure 3) for securing the unit 11 on the spud flange, as will be described hereinafter.

The unit 11, as shown in Figures 2 and 4, generally comprises a body 34, means for controlling the introduction of pressure medium from the cartridge 13 into the container 10, a discharge valve for releasing the fire extinguishing medium from the container, operating levers for actuating the discharge valve and the pressure medium controlling means, a carrying handle 12, and a clip 36 (Figures 1 and 3) for mounting the shield 18. These elements will be described hereinafter in approximately the foregoing order.

The body 34 is substantially T-shaped and comprises a depending leg portion 38 fitted in the spud 20 and forming a closure for the container opening 17, a short horizontal arm 39 which extends radially inwardly across the container to about the longitudinal axis thereof, and a long horizontal arm 37, which
extends radially outwardly a substantial distance beyond the side wall of the container.

The exterior of the body 34 is further provided with a pair of opposite side lugs 40 (Figures 1 and 3) having apertures adapted to register with a pair of the apertures 29 of the spud flange for receiving the screws 31, a threaded aperture 41 on the underside for receiving the screw 35, a threaded aperture 42 adapted to receive a screw 44 for securing the shield clip 35 to the body, and trunnions 45 and 46 adjacent the ends of the long and short arms, respectively, for pivotally mounting the operating levers, as will be described hereinafter.

The interior of the body 34 is provided with a pressure medium duct comprising an enlarged inlet section 51, including a vertical threaded bore 52 for connecting the cartridge 13 adjacent the outer end of the arms 39 at the underside thereof, an outlet section 54 extending vertically downwardly in the leg portion 36 to communicate with the interior of the container 10, and a horizontal section 55 in the arm 39 joining the sections 51 and 54. A bore 56 extends vertically from the top of the arm 39 in central alignment with the inlet section 51 of the duct for slidably receiving a pin or rod 57 serving as an element for controlling the release of pressure medium from the cartridge 13.

The cartridge 3 illustrated herein (Figures 2 and 4) is in the form of a cylinder adapted to receive compressed or liquefied gas serving as a pressure medium. The upper end of the cartridge has a valve assembly secured therein which includes a sleeve or bushing 58 threaded into the bore 52 to suspend the cartridge from the body, and a pressure seated valve member 59 adapted to be unseated by the rod 57 to admit pressure medium into the container 10 by way of the duct just described. The body of the cartridge may be removably connected to the body of the container by a strap 60.

The interior of the body 34 is further provided with a fire extinguishing medium discharge passage comprising an vertical inlet section 61 in the leg portion 36, a horizontal outlet section 62 extending to the free end of the arm 37 to which the discharge hose or conduit 9 is connected, and a downwardly facing valve seat 64 between the inlet and outlet sections defining a valve port 65. In order to facilitate the free flow of the extinguishing medium, which may be a dry powder or a liquid, for example, a heavy liquid, through the discharge passages of the body 34 and the discharge hose 9, these passages should be of sufficient diameter and cross-sectional area to provide a minimum of flow resistance, and care should be taken to avoid restrictions in such passages substantial enough to cause undesirable clogging. In the embodiment of the invention shown in the drawings, the inlet section 61 has a somewhat larger diameter than the outlet section 62, and the diameter of the port 65 is about equal to that of the outlet section, these proportions having been found to give good discharge characteristics. However, other proportions of passage dimension will be found satisfactory, and the specific example set forth is given merely by way of illustration and not in any limiting sense.

The fire extinguishing medium is conducted to the discharge passage by a syphon tube 66 having its upper end connected to the inlet section 61 and having its other end adjacent the bottom of the container.

A valve member 67 is provided for the seat 64 to normally close the valve port, the valve member having a generally conical, tapered or streamlined depending portion 68 adapted to cooperate with the side lugs 40 of the discharge passage to minimize flow resistance.

A stem 70 for unseating the valve member has one end attached to the valve member and has its other end extending upwardly through a bore 71 coaxially aligned with the valve port 65. The upper end of the stem has a button 72 the upper which is engaged by the upper end of a spring 74 having its lower end surrounding a boss 75 on the exterior of the body 34, whereby the stem is normally urged upwardly to cause the valve member 67 to engage its seat. The stem 70 has a small diameter in comparison to the diameter of the discharge passage, whereby it offers a minimum of resistance to the flow of fire extinguishing medium through the discharge passage.

The operating levers for actuating the discharge valve and the pressure medium controlling means (Figures 2 and 4) comprise a lever 80 having one end pivotally mounted on a pin 81 extending through the trunnion 45, and a second lever 82 pivotally mounted on a pin 84 extending through the trunnion 46. The lever 82 extends lengthwise across the arm 39 above the rod 57 and the stem 70 to engage the same and effect substantially simultaneous downward movement thereof when the lever is moved in a clockwise direction, as viewed. A spring 85 coiled about the pin 81 normally urges the lever out of engagement with the rod 57 and the stem 70. The lever 82 has an arm 86 for engaging the free end of the lever 80, and has a second arm 87 serving as a trigger or manually engageable operating arm for rocking the lever 80 and thereby moving the lever 82. The lever 82 further has a depending projection 88 for engaging a stop 89 on the body 34 to fix the non-operated position of the lever 82 and to enable the arm 86 thereof to serve as a stop for the free end of the lever 80, which is urged upwardly under the influence of the spring 85.

The handle 12 is constructed to facilitate carrying the extinguisher with the least amount of effort and to facilitate operation of the levers in the most convenient manner, so that the extinguisher can be brought quickly to the fire and put into operation with a minimum delay. In furtherance of these objects, the handle extends lengthwise across the body 34 and the container 10, and has a gripping portion located approximately above the center of gravity of the extinguisher.

In order to accomplish the foregoing in a practical manner and to provide a handle adapted to withstand the weight of the extinguisher, the handle 12 comprises a cast or molded body member 95 and a strap 60.

The body member 95 has a hollow base 91 serving as a housing for the operating elements of the discharge control unit 11, i.e. the trunnions 45 and 46, the rod 87, the stem 70, the lever 80, the lever arm 88, the projection 89 and the stop 90. An opening 99 is provided in the base through which the lever arm 87 extends. A curved portion 100 is formed integral with the base 97 in the sense.

The fire extinguishing medium is conducted to the discharge passage by a syphon tube 66 having its upper end connected to the inlet section 61 and having its other end adjacent the bottom of the container.

This portion is upwardly extending side flanges 101 joined by ribs 102 each provided with a threaded aperture 103, and has a free end provided with an arcuate groove or channel 104 in which the free end of the lever arm 87 is
A stop 105 may be provided at the inward end of the channel for limiting the movement of the arm 87. The strap 96 is generally elliptical in shape and conforms to the contour of the portion 106 of the handle body. One end of the strap is secured to the free end of the body arm 93 by screws 108, and the other end of the strap is bifurcated to provide an opening 107 through which hose 9 extends and to provide a pair of lugs 109 for securing this end of the strap to unit body 34 by means of the screws 31 (Figure 5). The intermediate portion of the strap is secured to the handle body by screws 110 threaded into the apertures 103.

The extinguisher is charged for use by removing the cap 25, introducing the fire extinguishing medium through the filling opening 21, and then replacing the cap. A cartridge 13 containing pressure medium is secured to the body 34 in the manner heretofore described.

In operation, the extinguisher may be carried in one hand to the location of the fire while utilizing the other hand to remove the discharge shield from its clip 35 and point it towards the fire. When the operator is in position to work on the fire, the container is set down in upright position, and the arm 87 of the lever 82 is pulled in counterclockwise direction as viewed, and held in the position shown in Figure 4, whereby the lever 86 is rocked to depress the lever 80 and cause the latter to move the rod 57 and the stem 70 downwardly to effect unseating of the valve members 59 and 67 substantially simultaneously. When this occurs, pressure medium from the cartridge 13 is introducted into the container 19, and the fire extinguishing medium therein is expelled by way of syphon tube 66, the discharge passage, the hose 9 and the shield 8, the latter serving to direct the fire extinguishing medium on the fire.

The fire extinguisher of the present invention has been designed to permit intermittent operation of the extinguisher, which may be desirable in combating certain types of fires, or to conserve the fire extinguishing medium for subsequent use. A substantial amount of the fire extinguishing medium remains. Therefore, if it is desired to stop the discharge of the fire extinguishing medium, the arm 87 of the lever 82 is released, whereby the lever 80, under the influence of the spring 85, is moved upwardly and out of engagement with the rod 57 and the stem 70. The pressure medium valve member 59 is thereupon caused to reseat by the combined forces of the pressure in the container 10 and of the valve spring 74. By providing a separate shut-off for the pressure medium in the cartridge 13, subsequent operation of the fire extinguisher is not totally dependent upon the retention of released pressure medium in the container 10, but some of the pressure medium in the cartridge is conserved for subsequent operation.

When the fire extinguishing medium in the container 10 and the pressure medium in the cartridge 13 have been used up or have been substantially used up, the container may again be charged as previously described, and the cartridge replaced.

From the foregoing description it will be seen that the present invention provides an improved fire extinguisher which fulfills the various objects set out at the beginning, which can be readily constructed and assembled in an economical manner, and which can be easily carried and used to enable the operator to effectively attack and extinguish a fire. The extinguisher is not only simple and compact in design, but is also rugged in construction to enable it to readily withstand the rough usage to which it may be normally subjected.

It should also be understood that by providing a fire extinguisher in which the release of the pressure medium and the opening of the main fire extinguishing medium valve are effected substantially simultaneously by a single manipulative action, the confusion which is encountered in the operation of presently commercially available fire extinguishers, in which these operations are effected by separate actions, is avoided. Furthermore, by providing a carrying handle for the extinguisher in a normal carrying position with the operating control for the extinguisher positioned in the carrying handle for operation by the hand of the operator which carries the extinguisher, assurance is had that the extinguisher will be employed in the desired upright position, without undesirable loss of the pressure medium, and at the same time easy and readily understood operation of the unit is had.

While the present invention has been described with specific reference to a portable fire extinguisher employing a dry powder or liquid fire extinguishing medium and a source of operating pressure in the form of a cartridge or container of a fluid medium under pressure, it will be apparent to those skilled in the art that other sources of pressure may be employed with equal effectiveness, and that the present invention is not limited to the use of a fluid medium stored under pressure, nor to the release of such pressure by a conventional seat type valve. Thus, the desired operating pressure could be produced by the mixing of chemicals or by the ignition or explosion of a burnable powder or in any other suitable manner; while the release of the pressure medium could be effected by the puncturing of a frangible disc or similar seal, in which case a suitable shut-off device could be provided to shut off the flow of the pressure medium when desired.

It will of course be apparent that various other changes may be made in the form, construction and arrangement of the various elements, within the spirit and scope of the invention, without sacrificing any of its advantages; and it is accordingly to be understood that all matter herein is to be interpreted as illustrative and not in any limiting sense.

We claim:

1. In fire extinguishing apparatus, a container for receiving a charge of fire extinguishing medium having an opening at the upper end thereof, and a discharge passage connected to said container at the opening thereof; said unit comprising a body having a duct provided with an inlet for a source of pressure medium and provided with an outlet in communication with the interior of said container, and said body having a discharge passage provided with an inlet, an outlet and a valve seat intermediate said passage inlet and outlet; a tube connected to said passage inlet and extending to the lower interior end of said container, a valve member for said valve seat; a stem having one end extending to the exterior of said body for effecting unseating of said valve member; an element for controlling the flow of pressure medium through said duct having one end extending to the exte-
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roy of said body; a lever having one end pivotally mounted on said body adjacent said element and having an arm extending across said element and said stem for positively moving said element and said stem substantially simultaneously; and a second lever pivotally mounted and having a manually engageable arm and a second arm for engaging the free end of said arm of said first lever and for rocking said first lever to substantially simultaneously operate said element and said stem to respectively control the flow of pressure medium through said duct and the flow of fire extinguishing medium through said discharge passage.

2. In fire extinguishing apparatus, a container for receiving a charge of fire extinguishing medium having an opening at the upper end thereof, and a discharge control unit secured to said container at the opening thereof; said unit comprising a body having a duct provided with an inlet for a source of pressure medium and provided with an outlet in communication with the interior of said container, and said body having a discharge passage provided with an inlet, an outlet and a valve seat intermediate said passage inlet and outlet; a tube connected to said passage inlet and extending to the lower interior end of said container; a valve member for said valve seat; a stem having one end extending to the exterior of said body for effecting unscrewing of said valve member; means cooperating with said valve member to normally yieldingly urge said valve member on its seat; an element for controlling the flow of pressure medium through said duct having one end extending to the exterior of said body; a lever having one end pivotally mounted on said body adjacent said element and having an arm extending across said element and said stem for positively moving said element and said stem substantially simultaneously; and a second lever pivotally mounted and having a manually engageable arm and a second arm for engaging the free end of said arm of said first lever and for rocking said first lever to substantially simultaneously operate said element and said stem to respectively control the flow of pressure medium through said duct and the flow of fire extinguishing medium through said discharge passage.

3. In fire extinguishing apparatus, a container for receiving a charge of fire extinguishing medium having an opening at the upper end thereof, and a discharge control unit secured to said container at the opening thereof; said unit comprising a body having a duct provided with an inlet formed with means on the underside of said body for connecting a source of pressure medium and provided with an outlet in communication with the interior of said container, and said body having a discharge passage provided with an inlet, an outlet and a valve seat intermediate said passage inlet and outlet; a cartridge for containing a source of pressure medium removably attached to said connecting means and having an outlet in communication with said duct inlet and a valve therefor; a tube connected to said passage inlet and extending to the lower interior end of said container; a valve member for said valve seat; a stem having one end extending to the exterior of said body for effecting unscrewing of said valve member; an element for operating said stem and said element and having an arm extending across said element and said stem for positively moving said element and said stem substantially simultaneously; and a second lever pivotally mounted and having a manually engageable arm and a second arm for engaging the free end of said arm of said first lever and for rocking said first lever to substantially simultaneously operate said element and said stem to respectively control the flow of pressure medium through said duct and the flow of fire extinguishing medium through said discharge passage.

4. In fire extinguishing apparatus, a container for receiving a charge of fire extinguishing medium having an opening at the upper end thereof, and a discharge control unit secured to said container at the opening thereof; said unit comprising a body having a duct provided with an inlet for a source of pressure medium and provided with an outlet in communication with the interior of the container, and said body having a discharge passage provided with an inlet, an outlet and a valve seat intermediate said passage inlet and outlet; a tube connected to said passage inlet and extending to the lower interior end of said container; a valve member for said valve seat; a stem having one end extending to the exterior of said body for effecting unscrewing of said valve member; an element for controlling the flow of pressure medium through said duct having one end extending to the exterior of said body; a lever having one end pivotally mounted and having a manually engageable arm and a second arm for engaging the free end of said arm of said first lever and for rocking said first lever to substantially simultaneously operate said element and said stem to respectively control the flow of pressure medium through said duct and the flow of fire extinguishing medium through said discharge passage; and a carrying handle having a manually engageable portion extending across said container and having a casing portion for housing said first lever provided with an opening through which the manually engageable arm of said second lever extends.

5. In fire extinguishing apparatus, a container for receiving a charge of fire extinguishing medium having an opening at the upper end thereof, and a discharge control unit secured to said container at the opening thereof; said unit comprising a body having a duct provided with an inlet for a source of pressure medium and provided with an outlet in communication with the interior of said container, and said body having a discharge passage provided with an inlet, an outlet and a valve seat intermediate said passage inlet and outlet; a cartridge for containing a source of pressure medium removably attached to said connecting means and having an outlet in communication with said duct inlet and a valve therefor; a tube connected to said passage inlet and extending to the lower interior end of said container; a valve member for said valve seat; a stem having one end extending to the exterior of said body for effecting unscrewing of said valve member; an element for operating said stem and said element and having an arm extending across said element and said stem for positively moving said element and said stem substantially simultaneously; and a second lever pivotally mounted and having a manually engageable arm and a second arm for engaging the free end of said arm of said first lever and for rocking said first lever to substantially simultaneously operate said element and said stem to respectively control the flow of pressure medium through said duct and the flow of fire extinguishing medium through said discharge passage; and a carrying handle having a manually engageable portion extending across said container and having a casing portion for housing said first lever provided with an opening through which the manually engageable arm of said second lever extends.

6. In fire extinguishing apparatus, a container for receiving a charge of fire extinguishing me-
a dium having an opening at the upper end thereof, and a discharge control unit secured to said container at the opening thereof; said unit comprising a body having a duct provided at one end of said body with an inlet for pressure medium and provided with an outlet in communication with the interior of said container, and said body having a discharge passage provided with means in communication with the interior of said container, said means at the end of said body opposite said duct inlet and a valve seat intermediate said inlet and outlet means; valve means for said valve seat; means for controlling the flow of pressure medium through said duct; a lever having one end pivotally mounted on said body at the end where said duct inlet is located; a second lever pivotally mounted on said body adjacent said outlet means having a manually engageable arm and a second arm for engaging the other end of said first lever and for rocking said first lever to simultaneously operate said flow controlling means and said valve means to respectively control the flow of pressure medium through said duct and the flow of fire extinguishing medium through said discharge passage; and a handle on said body having a gripping portion extending across said body and said manually engageable lever arm.

7. In fire extinguishing apparatus, a container for receiving a charge of fire extinguishing medium having an opening at the top thereof; a valve body secured to said container having a portion forming a closure for said opening, a portion extending inwardly to a position adjacent the longitudinal axis of said container, and a portion extending outwardly beyond said container; said valve body having a duct provided with a pressure medium inlet adjacent the end of said outwardly extending portion and provided with an outlet in communication with the interior of said container and having a passage provided with an inlet in said closure portion, an outlet at the end of said inwardly extending portion, and a valve seat between said passage inlet and outlet; a valve member for said seat; a cartridge detachably secured to said outwardly extending body portion for supplying pressure medium to said duct inlet and depending from said valve body adjacent to said container; means for controlling the flow of pressure medium from said cartridge through said duct; and means for unseating said valve member.

8. In fire extinguishing apparatus, a container for receiving a charge of fire extinguishing medium having an opening at the top thereof; a valve body secured to said container having a portion forming a closure for said opening, a portion extending inwardly to a position adjacent the longitudinal axis of said container, and a portion extending outwardly beyond said container; said valve body having a duct provided with a pressure medium inlet adjacent the end of said outwardly extending portion and provided with an outlet in communication with the interior of said container and having a passage provided with an inlet in said closure portion, an outlet at the end of said inwardly extending portion, and a valve seat between said passage inlet and outlet; a valve member for said seat; a cartridge detachably secured to said outwardly extending body portion for supplying pressure medium to said duct inlet and depending from said valve body adjacent to said container; means for controlling the flow of pressure medium from said cartridge through said duct; and means for unseating said valve member; and means for effecting substantially simultaneous operation of said pressure medium flow controlling means and said valve unseating means.

9. In fire extinguishing apparatus, a container for receiving a charge of fire extinguishing medium having an opening adjacent one side of the top thereof; a valve body secured to said container having a portion forming a closure for said opening, a portion extending outwardly beyond said container, and a portion extending outwardly beyond said container; said valve body having a duct provided with a pressure medium inlet adjacent the end of said outwardly extending portion and provided with an outlet in communication with the interior of said container and having a passage provided with an inlet in said closure portion, an outlet at the end of said inwardly extending portion, and a valve seat between said passage inlet and outlet; a valve member for said seat; a cartridge detachably secured to said outwardly extending body portion for supplying pressure medium to said duct inlet and depending from said valve body adjacent to said container; and a portion extending outwardly beyond said container; said valve body having a duct provided with a pressure medium inlet adjacent the end of said outwardly extending portion and provided with an outlet in communication with the interior of said container and having a passage provided with an inlet in said closure portion, an outlet at the end of said inwardly extending portion, and a valve seat between said passage inlet and outlet; a valve member for said seat; a cartridge detachably secured to said outwardly extending body portion for supplying pressure medium to said duct inlet and depending from said valve body adjacent to said container; means for controlling the flow of pressure medium from said cartridge through said duct; and means for unseating said valve member; and a carrying handle having a manual gripping portion extending above said body from said outwardly extending end of said body.

10. In fire extinguishing apparatus, a container for receiving a charge of fire extinguishing medium having an opening adjacent one side of the top thereof; a valve body secured to said container having a substantially horizontal portion extending outwardly at one end from the longitudinal axis of said container to the outer side wall of said container; a pressure medium cartridge removably attached to said valve body portion adjacent its outwardly extending end and extending downwardly therefrom; a discharge conduit connection at the other end of said valve body portion; a discharge valve in said body portion between the ends thereof including operating means therefor; and a carrying handle having a manual gripping portion extending across said valve body portion; said discharge valve operating means, said discharge conduit connection and said handle portion being positioned above said container.

11. In fire extinguishing apparatus, a container for receiving a charge of fire extinguishing medium having an opening adjacent one side of the top thereof; a valve body secured to said container having a substantially horizontal portion extending outwardly at one end from the longitudinal axis of said container to the outer side wall of said container; a pressure medium cartridge removably attached to said valve body portion adjacent its outwardly extending end and extending downwardly therefrom; a discharge conduit connection at the other end of said valve body portion and a conduit connected thereto; a discharge valve in said body portion between the ends thereof; and a carrying handle having a manual gripping portion extending across said valve body portion secured to said body portion at both ends thereof and having an opening at the end adjacent said connection through which said conduit extends.

12. In fire extinguishing apparatus, a container for receiving a charge of fire extinguishing medium; a valve body secured to the upper end of said container having a substantially hori-
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11. Horizontal portion extending outwardly at one end from the longitudinal axis of said container to beyond the outer side wall of said container; a pressure medium cartridge attached to said valve body portion adjacent its outwardly extending end; a discharge conduit having one end connected to the other end of said body portion; a discharge shield connected to the other end of said conduit; and means for removably securing said shield to said valve body portion adjacent said cartridge.

12. In fire extinguishing apparatus, a container for receiving a charge of fire extinguishing medium; a valve body secured to the upper end of said container having a substantially horizontal portion extending outwardly at one end from the longitudinal axis of said container to beyond the outer side wall of said container; a pressure medium cartridge attached to said valve body portion adjacent its outwardly extending end; a discharge conduit having one end connected to the other end of said body portion; a discharge shield connected to the other end of said conduit; means for removably securing said shield to said valve body portion adjacent said cartridge; and a handle extending across said valve body portion.

13. In fire extinguishing apparatus, a container; a valve body secured to the upper end of said container; means in said valve body for supplying pressure medium to said container; a discharge valve in said body; means for effecting operation of said pressure supplying means and said valve; a carrying handle secured to said container and valve body assembly having an arcuate portion on the underside at one end thereof; a pivotally mounted lever for actuating said operation effecting means, said lever having an arm, the end of which is disposed in closely spaced relationship with the arcuate portion on said carrying handle to prevent slippage of the operator's finger from said lever arm.

14. In fire extinguishing apparatus, a container; a valve body secured to the upper end of said container; means in said valve body for supplying pressure medium to said container; a discharge valve in said body; means for effecting operation of said pressure supplying means and said valve; a carrying handle secured to the container and valve body assembly having an arcuate portion on the underside at one end thereof; a pivotally mounted lever for actuating said operation effecting means, said lever having an arm, the end of which is disposed in closely spaced relationship with the arcuate portion on said carrying handle to prevent slippage of the operator's finger from said lever arm; and a stop for limiting movement of said arm.

15. In fire extinguishing apparatus, a container for receiving a charge of fire extinguishing medium, a discharge control unit secured to said container having a discharge passage, a normally closed valve for said passage including an element for opening said valve, a source of pressure medium, duct means for introducing pressure medium into said container, valve means for controlling the admission of pressure medium into said container, valve means for controlling the admission of pressure medium into said duct means including an element for opening said duct means, said elements being mounted substantially parallel to each other in a common plane and for movement in the same direction to effect opening of said duct and said valve means, a lever having one end pivotally mounted on said unit for movement in the plane in which said elements are mounted extending across said elements to thereby effect substantially simultaneous engagement and positive operation thereof in the same direction.

16. In fire extinguishing apparatus, a container for receiving a charge of fire extinguishing medium, a discharge control unit secured to said container having a discharge passage, a normally closed valve for said passage including an element for opening said valve means, said elements being mounted substantially parallel to each other in a common plane and for movement in the same direction to effect opening of said valve means, a lever having one end pivotally mounted on said unit for movement in the plane in which said elements are mounted extending across said elements to thereby effect substantially simultaneous engagement and positive operation thereof in the same direction, and a lever pivotally mounted on said unit for movement in the plane in which said elements are mounted extending across said elements to thereby effect substantially simultaneous engagement and positive operation thereof in the same direction.

17. In fire extinguishing apparatus, a container; a valve body secured to the upper end of said container; means in said valve body for supplying pressure medium to said container; a discharge valve in said body; means for effecting operation of said pressure supplying means and said valve; a carrying handle secured to said container and valve body assembly having an arcuate portion on the underside at one end thereof; a pivotally mounted lever for actuating said operation effecting means, said lever having an arm, the end of which is disposed in closely spaced relationship with the arcuate portion on said carrying handle to prevent slippage of the operator's finger from said lever arm; and a stop for limiting movement of said arm.

18. In fire extinguishing apparatus, a container for receiving a charge of fire extinguishing medium, means for introducing pressure medium into said container including valve means, discharge means for said container including a valve, means for substantially simultaneously effecting operation of said valve and valve means including a manually operable element, and carrying means extending crosswise above the upper end of said container, said manually operable element being positioned under said carrying means and adjacent thereto, whereby the manner of carrying and operating said apparatus is self evident.

19. In fire extinguishing apparatus, a container; a valve body secured to the upper end of said container; means in said valve body for supplying pressure medium to said container; a discharge valve in said body; means for effecting substantially simultaneous operation of said pressure supplying means and said valve; a carrying handle in the form of a hand grip secured to and overlying said body; and means for operating said pressure supplying means and said discharge valve including a trigger arm positioned beneath said carrying handle adjacent one end thereof so as to be operable by a finger of the operator's hand gripping the carrying handle.

20. In fire extinguishing apparatus, a container for receiving a charge of fire extinguishing medium having an outlet at the upper end thereof, an elongate valve body connected to said outlet and extending radially from the longitudinal axis of said container, means at one end of said valve body for introducing pressure medium into said container including valve means, said valve body having a discharge outlet at the opposite end facing in a radial direction across said container, a conduit having one end connected to said discharge outlet and having discharge directing means at its other end, a valve in said valve body intermediate its ends, means for effecting operation of said valve and said valve means including a trigger arm mounted on said valve body having its free end facing in the direction of said conduit, and a carrying handle in the form of a hand grip secured to said valve body and extending from end to end thereof in overlying relation with the free end of said trigger arm underneath and adja-
cent thereto whereby the manner of carrying, operating and utilizing said apparatus is self-evident.

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

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