Nov. 14, 1967 C. J. DE COSTE 3,352,364

JACKET TYPE SPRINKLING AND SPRAYING DEVICE

Filed Sept. 17, 1965 2 Sheets-Sheet 1

Fig. 2

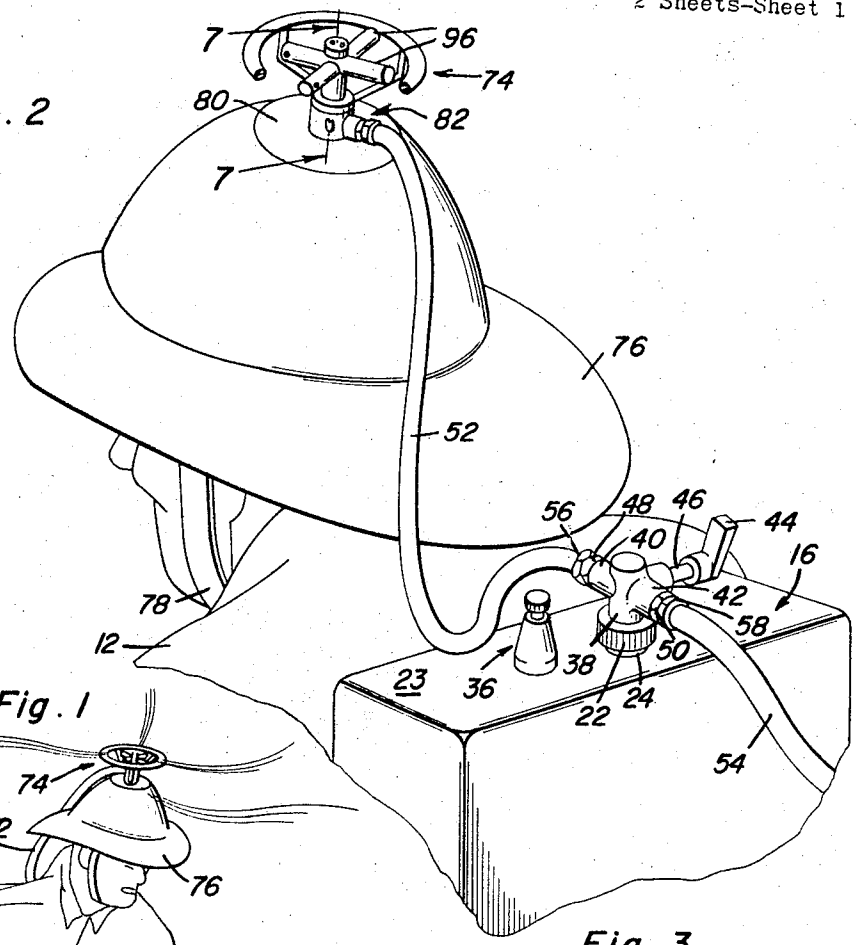


Fig. 1

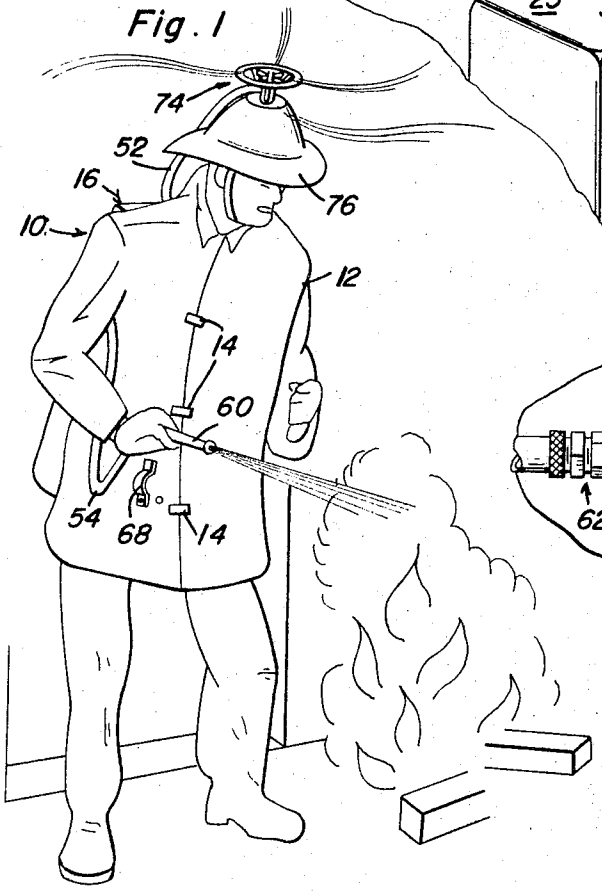
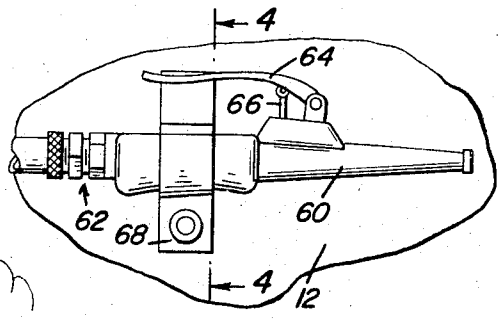


Fig. 3



Clarence J. DeCoste

INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson

Attorneys

Nov. 14, 1967 C. J. DE COSTE 3,352,364

JACKET TYPE SPRINKLING AND SPRAYING DEVICE

Filed Sept. 17, 1965 2 Sheets-Sheet 2

Fig. 5

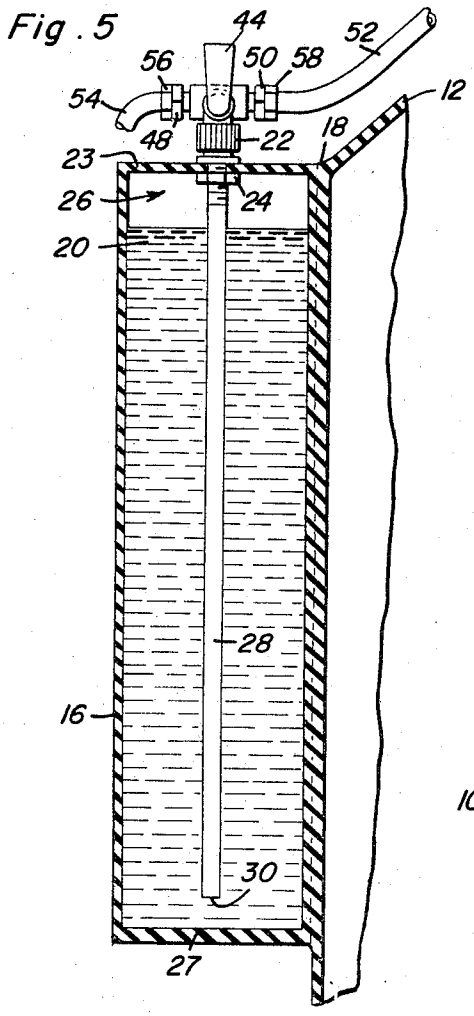


Fig. 6

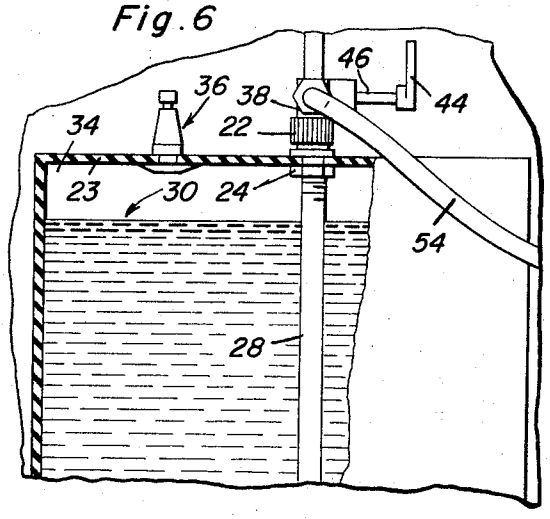


Fig. 7

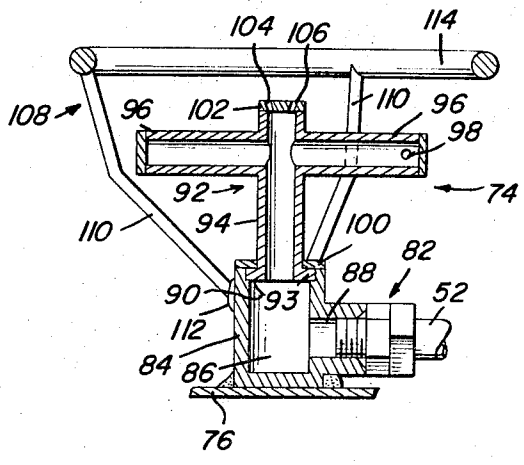
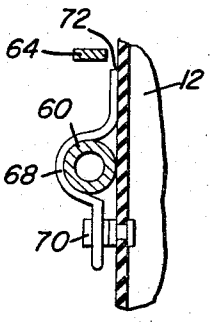


Fig. 4



Clarence J. DeCoste

INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson

Attorneys

United States Patent Office

3,352,364

Patented Nov. 14, 1967

3,352,364

JACKET TYPE SPRINKLING AND SPRAYING DEVICE

Clarence J. De Coste, 58 Shore Road, East Providence, R.I. 02915

Filed Sept. 17, 1965, Ser. No. 487,989
4 Claims. (Cl. 169—1)

ABSTRACT OF THE DISCLOSURE

A portable fire-fighting apparatus which is self-contained and includes a manually operable and controlled nozzle and a sprinkler mounted on the apex of a helmet or hard hat which discharges water or other fire-fighting fluid laterally outwardly in a manner not only to assist in putting out a fire but also to protect the user from burn injury and other dangerous conditions which he may encounter such as conditions of extreme heat, exposure to flames and the like. A self-contained tank which can be pressurized together with a control valve is provided with the tank being integral with a jacket to facilitate movement to the user without interference from the apparatus.

This invention relates generally to portable fire fighting and fire protective apparatus and more specifically to a jacket type portable device adapted to be worn by a fireman or other person engaged in saving the lives of those trapped in flame engulfed areas and includes a hat mounted means useful in conjunction with the device for the purpose of fighting fires.

Many persons have died or have been seriously injured while fighting fires or while attempting to rescue those trapped by fires due to the extreme heat and flames normally attendant to such fires. Various protective devices have been devised to provide protection for such persons; however, these devices have proved to be generally unsatisfactory due to the rather high cost and/or weight thereof.

Accordingly, it is the object of the present invention to provide a lightweight fire fighting and fire protective apparatus which is inexpensive to manufacture while at the same time being extremely efficient for its intended purpose.

In accordance with the above object, it is a further object of the present invention to provide a fire protective device adapted to be worn on the body of the user and including built-in fluid containing, spraying and dispensing features.

It is another object of the present invention to provide fire fighting apparatus adapted to be worn on the user's head and body including novel and unique tank means and fluid outlet means for enabling the user to effectively fight fires while at the same time be protected from the extreme conditions encountered thereby, leaving his hands free to perform other required functions.

A still further object of the present invention is to provide novel hat mounted fluid sprinkler structure useful for protecting the wearer from flames or excessive heat while fighting fires or the like.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a perspective view of the device embodying the subject matter of the present invention being worn by a user thereof in its intended manner;

FIGURE 2 is a partial enlarged perspective view of the device embodying the subject matter of the present invention in place on a user thereof;

FIGURE 3 is a partial elevational view of the hose nozzle comprising a portion of the present invention;

FIGURE 4 is a vertical sectional view taken substantially on the plane of the line 4—4 of FIGURE 3;

FIGURE 5 is an enlarged view partially in vertical section and partially in side elevation of the fire fighting device comprising the present invention;

FIGURE 6 is a view similar to that of FIGURE 5 partially in vertical section and partially in rear elevation; and

FIGURE 7 is an enlarged partial vertical sectional view taken substantially on the plans of the line 7—7 of FIGURE 2.

Referring now to the drawings in greater detail, reference numeral **10** denotes generally the fire fighting device comprising the present invention. The fire fighting device **10** comprises a jacket **12** preferably of approximately fingertip length and fabricated of rubberized or heavy duty plastic generally fire and heat repellent material. The jacket includes conventional closures or clasps **14** for fastening thereof and further has a sack or pouch **16** of similar material bonded or molded to the rear portion thereof as indicated by reference numeral **18**. The dimensions of the pouch are preferably 16 inches wide by 24 inches high by 6 inches deep thereby enabling the pouch to contain slightly over nine gallons of conventional fire fighting fluid **20** in the chamber **26** defined therein. However, it will be appreciated that the volume of the pouch **16** may be either increased or diminished if so desired.

The pouch **16** includes a threaded stem **24** defining an opening in the upper wall **23** thereof, and a cap **22** which may be screwed on the stem **24** for closing or opening the opening in the pouch **16**. The stem **24** is bonded or molded in an opening in the upper wall **23** of the pouch, the opening in stem **24** being provided in order to introduce conventional fire fighting fluid material **20** into the chamber **26** within the pouch. A discharge tube **28** is also mounted in the stem **24** and extends downwardly in the chamber **26** terminating in an open end **30** adjacent the bottom wall **27** of the pouch.

In order for the fluid **20** to be discharged upwardly through tube **28** and stem **24**, the fluid level generally indicated by reference numeral **30** is normally below the upper wall **23** of the pouch, thereby leaving an empty space **34** in the upper portion of the chamber **26** when the chamber is filled to level **30** with fluid **20**. A charging valve **36** is mounted in the upper wall **23** for introducing charging media, such as air or other conventional charging fluid into the empty portion **34**. The valve **36** may be of any conventional variety, it being contemplated that a Schrader valve will be suitable for the intended purpose. Thus, the pouch may be charged, thereby creating pressure on the fluid **20** which causes the fluid to rise in pipe **28**. Except for cap **22** the fluid would thereby be forced out of the pouch under pressure.

The screw cap **22** has a conventional pressure reducing valve **38** mounted on the upper portion thereof, the pressure reducing valve **38** also including a pair of T-arms **40** and **42** leading therefrom. A handle **44** is mounted on the valve control stem **46** for conventionally operating the pressure reducing valve **38** in a manner well known to those skilled in the art. Thus, by operating the handle **44** the valve **38** may be opened or closed to allow the fluid **20** to flow through the T-arms **40** and **42**. The arms **40** and **42** include conventional threaded nipples **48** and **50** on the outer ends thereof into which are threaded the threaded ends of a pair of hoses **52** and **54**. The hoses **52** and **54** having mounting nuts **56** and **58** thereon to retain the threaded ends thereof in the nipples **48** and **50**.

The hose 54 includes a spray nozzle 60 threadedly received at 62 on the end thereof opposite the end coupled to nipple 50. The nozzle 60 is of generally conventional configuration comprising a metal spray nozzle including the operating handle 64 thereon having valve operating rod 66 attached thereto for operating a conventional internally mounted valve. Further, it is anticipated that the spray from the nozzle may be adjusted in a manner well known to those skilled in the art. The jacket 12 includes a mounting bracket 68 attached to the front portion thereof by conventional attaching means such as threaded coupler 70 and bonded portion 72. The mounting bracket 68 is provided for hanging the nozzle 60 therein when the nozzle is not in use, as illustrated in FIGURES 3 and 4, thereby providing a readily accessible position for the nozzle 60 while at the same time allowing the nozzle to be retained out of the way of the user of the device.

The hose 52 is coupled at the end remote from nipple 48 to a hat mounted sprinkling device generally denoted by reference numeral 74. The sprinkling device 74 is mounted on a conventional fireman-type hat 76, which hat is preferably fabricated of Plexiglas or other substantially sturdy and lightweight material. The hat 76 includes a chin mounting strap 78 for retaining the hat on the user's head, and a flat portion 80 at the apex thereof at which point the spray nozzle 74 is mounted. The hose 52 is connected to the spray nozzle 74 by threaded coupling 82. The spray nozzle 74 includes a body portion 84 of generally cylindrical configuration including a fluid receiving chamber 86 opening at 88 as an inlet to the hose 52. Mounted at the top of the body 84 and rotatably held therein by the peripheral notch 90 in the inner wall of body member 84 is the rotating sprinkler section 92. A mounting flange 93 is retained in notch 90 by cap 100. The rotating sprinkler section 92 includes an upstanding body portion 94 opening at one end to chamber 86 and four integrally formed arms of identical construction 96 extending perpendicularly therefrom in oppositely paired relationship. Each arm 96 is open at one end to the body portion 94 and is preferably approximately two inches long by one-half inch in diameter. However, as will be appreciated, the size of the arms may be varied. Each arm 90 includes a sprinkler orifice 98 in the same side thereof and adjacent the end opposite the end opening to body 94. Thus, insofar as the sprinkler section 92 is rotatably mounted on the body member 84 and held thereon by cap 100, when the fluid 20 is forced under pressure through hose 52 into chamber 86 and upwardly through the body member 94 into the arms 96, the fluid will be sprayed out of the orifices 98 thereby causing rotation of the sprinkler section 92 as the fluid is projected from the sprinkler orifices due to the force impaired to the arms thereby. Further, the body portion 94 is capped by a capping member 102 having a pair of sprinkling orifices 104 and 106 therein, thereby allowing the fluid 20 under pressure to be projected upwardly and outwardly therethrough.

A circular metal guard 108 is maintained in encircling relationship to the sprinkler section 92 by being mounted on the body member 84 by a plurality of arms 110, which arms 110 are braised or welded or otherwise mounted on the body member as illustrated at 112. The arms 110 are joined at their upper end by an encircling generally circular guard member 114 which together with the arms 110 protects the sprinkler 92 in case the hat 76 is inadvertently knocked to the ground. Incidentally, in this regard, if the hat 76 were to be knocked off the user's head, the hose 52 will enable the user to quickly recover it, thereby eliminating the possibility of losing the hat.

The valve 38 permits fluid to be conveyed to the spray nozzle 60 and sprinkler section 92 at the same time when the control handle 44 is operated. Of course, when the handle 44 is turned to open the valve 38, the sprinkler section 92 will be immediately activated. However, in order to allow the fluid to flow from the nozzle 60 the valve therein must be opened by handle 64. Thus, when valve 38 and the valve in nozzle 60 are both opened, fluid will flow from both the nozzle 60 and sprinkler section 92, whereas if the valve in nozzle 60 is not activated fluid will only flow from sprinkler section 92. If the valve 38 is only partially open, of course, the pressure of the fluid through the hoses 52 and 54 will be relatively slight and the fluid will be sprinkled or sprayed only in close areas. However, if the valve 38 is fully opened, the pressure will be greater and the liquid will be sprayed into a larger area. Further, the distance of spray from the nozzle 60 is variable by the handle 64 and control valve contained therein.

Thus, it will be appreciated that the present invention comprises an extremely useful and novel device for firemen or others engaged in helping people escape from fire enveloped areas. The hat mounted rotating sprinkler section 92 will protect the fireman from the flames or excessive heat by allowing fluid to form an umbrella-like shield about him, and the fluid may also be conveyed from nozzle 60 to spray flames or may be turned on the operator in order to protect himself from flames and heat. Further, the sack or pouch 16 may be filled with fluid, charged and stored on a fire truck or the like along with the hat in order to allow firemen to quickly put the device on in case of emergencies when the use of the device is called for. At this time, the device can be quickly activated merely by turning handle 44, and the device may be used either with or without the hand-held nozzle 60.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A portable fire fighting device comprising means for containing a quantity of fire fighting fluid in charged pressurized condition, means for supporting said containing means on the body of the user of the device, means for controlling the flow of fluid from said containing means, and means communicating with said flow control means for directing a flow of fluid from said containing means, said containing means including jacket means adapted to be worn by the user of the device, and a fluid receiving chamber integral with said jacket means, said fluid control means comprising valve means in communication with said chamber, means for controlling the rate of fluid flow through said valve means, and said chamber including selectively closable charging port means therein for allowing the fluid therein to be charged, said directing means comprising a pair of hose means, each said hose means communicating at one end with said valve means, a first of said hose means including nozzle means on the other end thereof, said nozzle means adapted to be held in the user's hand for directing and regulating the fluid flow through said first hose means, the second hose means communicating at the other end thereof with fluid sprinkler means, said sprinkler means mounted on supporting means adapted to be worn on the user's head.

2. The combination of claim 1 wherein said supporting means comprises a hat, said hat including a flattened apex portion and said sprinkler means being mounted on said flattened portion of said hat.

3. The combination of claim 2 wherein said sprinkler means comprises fluid receiving chamber means adapted to receive said second hose means in connection therewith, a plurality of arm means rotatably mounted on said chamber means, said arm means having fluid outlet ports therein for directing the fire fighting fluid therefrom, said arm means being caused to rotate by the force imparted

thereto by said fluid as it is discharged from said outlet ports.

4. The combination of claim 3 including guard means mounted on said chamber means in substantially encircling guarding relationship to said arm means.

References Cited

UNITED STATES PATENTS

1,953,331	4/1934	Armstrong	169—2
2,162,057	6/1939	Brandt et al.	239—154
2,195,811	4/1940	Bramsen et al.	169—1
2,589,213	3/1952	Allen	169—1
2,632,163	3/1953	Spandan	169—1
2,803,826	8/1957	Johnston	2—81
3,223,172	12/1965	Moss	169—2

FOREIGN PATENTS

153,346	9/1953	Australia.

EVERETT W. KIRBY, *Primary Examiner.*