Dec. 1, 1936. V. J. HILL, JR 2,062,713

HANDLE FOR FIRE EXTINGUISHING APPARATUS

Filed Oct. 27, 1934

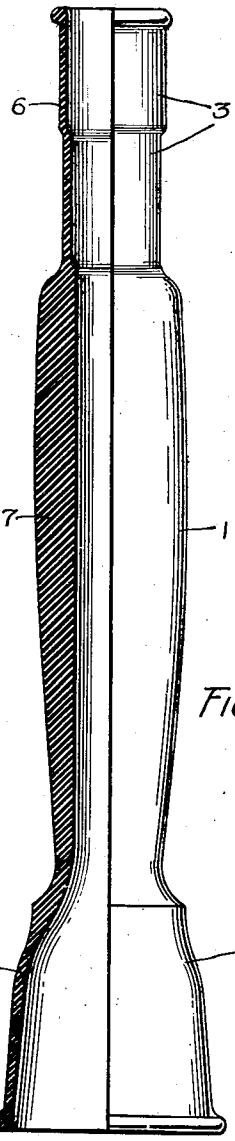


FIG. 2

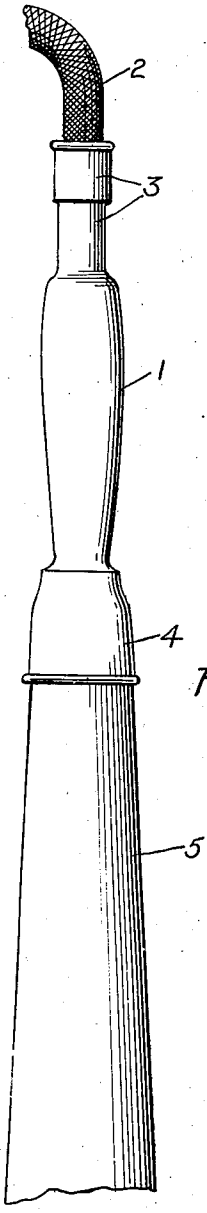


FIG. 1

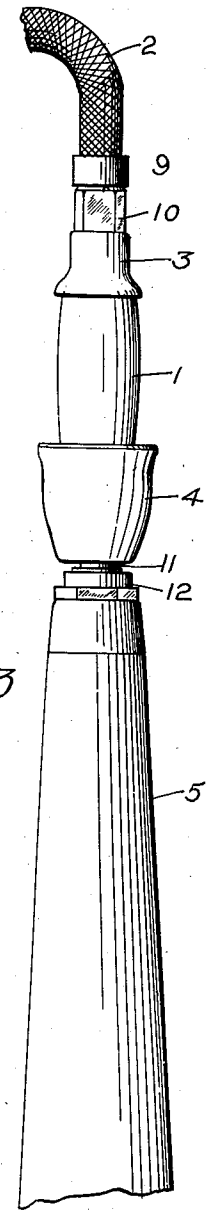


FIG. 3

INVENTOR
VALENTINE J. HILL, JR.
BY Paul G. Anderson
ATTORNEY

Patented Dec. 1, 1936 2,062,713

UNITED STATES PATENT OFFICE

2,062,713

HANDLE FOR FIRE EXTINGUISHING APPARATUS

Valentine J. Hill, Jr., Bloomfield, N. J., assignor to Walter Kidde & Company, Inc., Bloomfield, N. J., a corporation of New York

Application October 27, 1934, Serial No. 750,297

2 Claims. (Cl. 169—31)

The present invention relates to handles for use with fire extinguishing apparatus, particularly of the type employing carbon dioxide which is discharged partly as carbon dioxide gas and partly as carbon dioxide snow, both of which when projected upon a fire act to extinguish it.

One of the objects of this invention is the provision of a handle by means of which the discharge from a fire extinguisher may be so directed that the carbon dioxide will be efficiently and effectively employed in extinguishing a fire.

A further object of this invention contemplates a means which will prevent the extremely low temperatures which prevail when liquid carbon dioxide is converted into carbon dioxide gas and carbon dioxide snow from penetrating to the hand of the operator.

A still further object of the invention contemplates a flexible handle which may be twisted or bent from its normal form during assembly of the extinguisher.

Another object of the invention is the provision of a handle which will serve not only the purpose of covering certain metal parts but will, at the same time, serve to enhance the appearance of the apparatus.

A still further object of this invention contemplates a handle which is so designed that it may be bent or deformed during the assembly of the apparatus and yet return to its original shape without change after assembly.

These and other objects, as will be apparent from the following disclosure, are secured by means of the device of this invention.

This invention resides in the construction, arrangement and relative location of parts, all as will appear more fully hereinafter, and distinctly pointed out in the appended claims.

Referring to the drawing, Figure 1 is a vertical elevation of one form of apparatus employing the handle of this invention.

Figure 2 is partially a vertical cross-sectional view and partially a vertical elevational view of one form of handle embodying this invention; and

Figure 3 is a vertical elevation of the device shown in Figure 1 illustrating the handle as it appears during assembly.

In the present forms of fire extinguishing apparatus employing carbon dioxide, which is converted to snow and gas as the fire extinguishing medium, it is customary to lead the liquid carbon dioxide from a source of supply to a nozzle from which the liquid is discharged to effect transformation into snow and gas. A shield is usually provided which surrounds the discharge from the nozzle and prevents the entrainment of air before the snow and gas have been considerably reduced in velocity. It has been found that the most convenient position from which to direct the discharging carbon dioxide is at the point directly behind the discharge side of the nozzle. Handles have, for a long time, been employed at this point but these handles have not been satisfactory since they have not been easy to assemble and once they were assembled they have been ill-fitting. These handles have been so constructed that they have not gripped the apparatus closely, as a consequence of which the apparatus could slide within the handle resulting in inefficient direction of the discharging carbon dioxide.

It is accordingly a prime object of the present invention to provide a handle which fits tightly on the apparatus and at the same time permits easy assembly thereof in order that the extinguishing discharge may be directed with ease and efficiency.

For a better understanding of the invention reference is now made in detail to the drawing wherein similar reference numerals refer to like parts.

Referring first to Figure 1, a handle is shown at 1 as it appears on the assembled apparatus. The hose or conduit 2 leading from the source of supply of liquid carbon dioxide is shown as entering the handle through an opening in the flexible cup portion 3. At the opposite end of the handle proper is a flexible bell-shaped portion 4 which covers the end of the shield or horn 5 out of which the carbon dioxide is discharged. The dimensions of the handle, of course, are fixed by the design of the apparatus which the handle is to cover.

By referring to Figure 2 it will be seen that the wall 6 of the cup portion 3 is much thinner than the wall 7 of the handle proper. One reason for the difference in wall thickness is that the wall 6 must be flexible, while flexibility is not necessary in the wall 7. The wall 7 must be designed in such manner that it will not readily transmit heat and for this reason it is materially heavier in cross section than the wall 6. The wall 8 of the bell-shaped portion 4 must also be flexible and consequently this wall is much thinner in cross section than the wall 7.

With reference to Figure 3 it should be noted that the cup portion 3 of the handle 1 has been folded back upon the handle proper disclosing the coupling 9 and the nut 10 which serve as

means to fasten the hose 2 to the nipple 11. When the handle is thus folded back it is readily apparent that a wrench or other tool may be employed on the nut 10 without in any way injuring the handle, at the same time the handle will not interfere with the assembly of the apparatus.

The bell-shaped portion 4 is likewise shown folded back on the handle proper thus permitting ready access to the nozzle and horn connections generally indicated at 12 without injury to the handle. It will be noted that once the apparatus has been assembled and is ready for use, the handle may be unfolded so as to cover the apparatus in the manner shown in Figure 1.

The handle may be made of any material which has a high degree of flexibility. Ordinary black rubber will fulfill this qualification and at the same time this material is readily adaptable for molding into shape. The reason for this qualification, as is apparent, is that as the carbon dioxide passes through the nozzle and the liquid is transformed into gas and snow a great deal of heat is required to permit the transformation to take place. The only heat available is that which is in the surrounding air, thus there is a large temperature drop at the points surrounding the place where the change occurs. It can therefore be seen that the requisite of being a poor heat conductor is advantageous in that it will prevent the operator's hand from becoming chilled or frost-bitten.

At this point it should be noted that the invention is not restricted to handles of the particular cross-sectional or longitudinal configuration illustrated in the drawing since it is clearly within the scope of this invention to employ handles of any suitable and desirable geometric form, both in cross section and longitudinally. The apparatus on which it is to be employed will of necessity control the design.

From the foregoing disclosure it will be apparent that this invention resides in certain principles of construction which may be employed in other physical forms of apparatus without departure therefrom. It is apparent, therefore, that the form of apparatus illustrated in the drawing for the purpose of disclosure has been given solely in an illustrative sense and not in any limiting sense. The scope of this invention is best defined by the appended claims.

What I seek to secure by United States Letters Patent is:

1. A carbon dioxide hose and snow producing shield assembly comprising a flexible hose provided with a coupling on at least one end thereof, a carbon dioxide snow producing shield provided with a coupling at its inlet end, a rigid conducting tube adapted to connect said hose and shield couplings to provide a continuous carbon dioxide conducting path, and a rubber hand grip comprising a relatively thick walled intermediate portion adapted to encompass said tube and flexible portions at each end thereof having a relatively thin walled section with respect to said intermediate portion adapted to encompass said couplings with a relatively snug fit and to be folded back to uncover said couplings to permit access thereto.

2. A carbon dioxide hose and snow producing shield assembly comprising a flexible hose provided with a coupling on at least one end thereof, a carbon dioxide snow producing shield flaring outwardly from its inlet end to its outlet end and provided with a coupling at its inlet end, a rigid conducting tube adapted to connect said hose and shield couplings to provide a continuous carbon dioxide conducting path, and a rubber hand grip comprising a relatively thick walled intermediate portion adapted to encompass said tube and flexible portions at each end thereof having a relatively thin walled section with respect to said intermediate portion adapted to encompass said couplings with a relatively snug fit and to be folded back to uncover said couplings to permit access thereto, the flexible portion covering the shield coupling being initially flared to substantially conform to the flare of the shield.

VALENTINE J. HILL, JR.