Feb. 2, 1937. E. CLAWSON 2,069,667

NOZZLE TAKE-OFF ATTACHMENT

Filed July 1, 1935

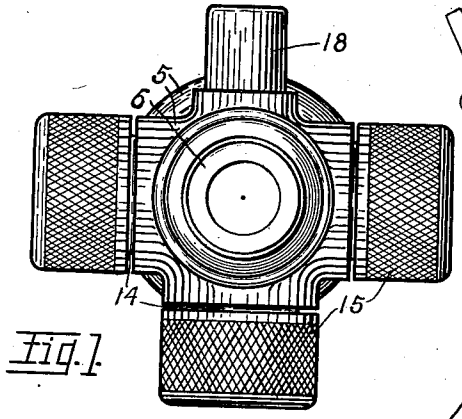


Fig. 1.

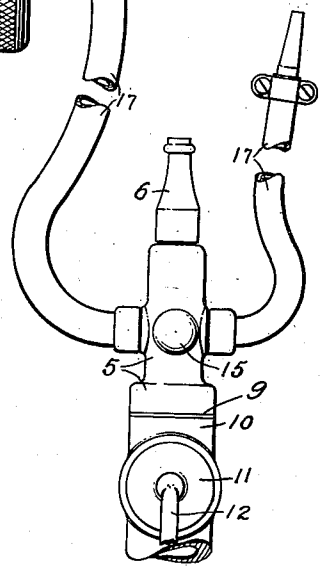


Fig. 3.

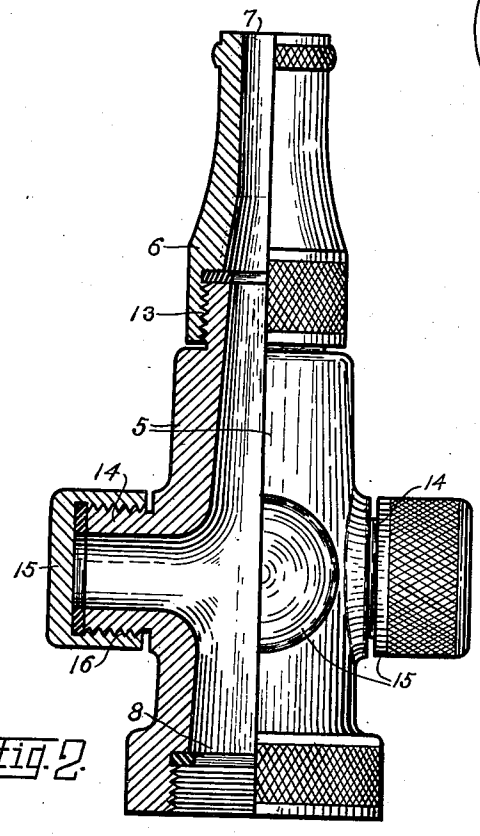


Fig. 2.

Edward Clawson, INVENTOR.

BY Sterling P. Buck,
ATTORNEY.

Patented Feb. 2, 1937 2,069,667

UNITED STATES PATENT OFFICE

2,069,667

NOZZLE TAKE-OFF ATTACHMENT

Edward Clawson, New Kensington, Pa., assignor to Continental Engineering Service, New Kensington, Pa., a firm

Application July 1, 1935, Serial No. 29,255

6 Claims. (Cl. 299—107)

This invention relates to the official class of water distribution, and specifically to couplings and nozzles, and is what the inventor chooses to call a nozzle take-off attachment, being an attachment for dividing a water-stream in a hose or the like into a number of smaller streams.

One object of this invention is to enable a fireman to very quickly and easily change a large stream of water to one or more smaller streams, thereby to reduce water-damage to the minimum, to permit the fireman to direct the divided stream at several points of attack at the same time and with a minimum of strain and effort, or to permit several firemen to manipulate the several small streams by small hose-sections attached to the outlets of the stream-dividing unit, thereby to extinguish the maximum fire in the minimum time with the minimum work and effort.

Other objects and important features are pointed out or implied in the following details of description, in connection with the accompanying drawing in which:

Fig. 1 is a front end view of a device which comprises the present invention;

Fig. 2 is a longitudinal quarter-sectional view showing one-half of the attachment in full elevation, and the other having a part removed for showing the tapering interior; and

Fig. 3 is a reduced side elevation showing the attachment in place, viz., removably secured to a tubular member or nozzle-connection having a cut-off valve therein.

Referring to this drawing in detail, wherein similar reference numerals refer to similar parts in the several views, the invention is now described as follows:

In one aspect of the invention, the tubular body 5 and the reducing nozzle-tip 6 may be considered unitedly as a tubular device whose outlet end 7 has only about one-fourth the speed-volume flow-capacity of the inlet end 8, inasmuch as the interior of this device is tapered substantially from said inlet end to said outlet end to such extent that the diameter of the outlet-port is only about one-half that of the inlet-port. It may here be explained that the speed-volume means the volume of liquid of a given kind that will pass through an opening or port in a given time at a given speed; and that the flow-capacity refers to the size of the opening or port which determines such speed-volume.

In another aspect of the invention, the reducing tip 6 may be considered as a separate or separable element, while the tubular member 5 may be considered as a stream-dividing unit having screw-threads or other appropriate means 9 for removably securing it to a conduit 10 or other liquid container wherein the liquid is under pressure and may be held against flowing by means of a cut-off valve 11 that has a handle 12 whereby it may be manually turned for opening or closing the conduit at will of the operator. The inter-engaged screw-threads 13 illustrate one means for removably securing the nozzle-tip 6 on the stream-dividing unit 5.

Laterally extending screw-threaded nipples or tubular hose-connections 14 are united with the tubular body 5 and may form integral parts thereof as illustrated, the same comprising laterally extending tubular outlet elements whose interiors communicate with the outwardly tapering interior of the body 5. Each of these elements 14 is provided with a closure or closing cap 15, and the inter-engaged threads 16 comprise a simple and effective and convenient means for removably securing any or all of these caps or closures in place so as to confine the flow to the tapering interior, or to divide such flow into two or more streams.

In fighting flames from a distance, as from the exterior of a burning building, it is necessary to have a large hose with a large nozzle-outlet to carry a large stream of water a long distance; but where the flames are incipient or have been baffled so that the firemen can enter the building and fight the flames at close range, the force of such large streams is so great as to break through walls or partitions and windows, destroy furniture, and endanger the firemen and others by knocking timbers and other materials through the air. Moreover, when a fireman is wearing a gas-mask or is restricting his breathing to avoid suffocation by the smoke, the large fire-hose with its heavy nozzle and load of water is very burdensome to a single fireman having charge thereof, whereas if two firemen are manipulating the same large nozzle with an undivided stream, they are likely to work against one another, thereby rendering it burdensome for both, while restricting the efficiency of their operations; whereas, by use of the present stream dividing device, one fireman can hold the nozzle-attaching part 10, and direct the nozzle-tip on a central part of the blaze, while several other firemen can hold and manipulate the several small hose-sections such as indicated at 17, each fireman bearing his share of the load and strain, yet each operating independently of the others and fighting separate parts of the flames or live coals.

A lateral extension or keeper 18 extends out

from the body 5 and serves to hold the outlet end off the floor, street or ground when the hose is prostrate; and a more important use for this lateral projection is to rest upon the rung of a ladder or upon a window sill to aid a fireman in holding the device steady while the small hose sections are being manipulated within a building by other firemen. It should be understood that a closing cap may be provided to fit on the unit 5, at 13, in lieu of or interchangeable with the nozzle-tip 6, or a small hose-section may be interchangeable therewith and with the ones shown at 17, so that as many as four small hose-sections may be simultaneously in use on the form of the invention as here illustrated.

Inasmuch as the cross-area of the inlet 8 is approximately or substantially as great as the aggregate cross-areas of the nozzle-tip 6 and the lateral nipples 14, all four of these outlets can be operated simultaneously with maximum efficiency.

It is not my intention to limit my patent protection to the precise details of construction and arrangement here disclosed, for the invention is susceptible of numerous changes within the scope of the inventive ideas as implied and claimed.

What I claim as my invention is:

1. A nozzle attachment or take-off connection comprising a tubular device having an inlet end and an outlet end and being internally tapered from the inlet end to the outlet end and having means at its inlet end for attaching it to a container of liquid under pressure and also having laterally extending outlet elements that are provided with hose-connecting means, and closures that are normally secured on and removable from said laterally extending outlet elements to permit sections of hose to be connected in open communication with said tubular device, the aggregate speed-volume flow-capacity of said outlet end and the outlets of said laterally extending outlet elements being substantially equal to the speed-volume flow-capacity of said inlet end.

2. A nozzle-attachment which constitutes a stream-dividing device and comprises a tubular unit having an inlet end provided with means for removably securing it to a container of liquid under pressure, said device having an outlet end provided with means to removably attach a reducing nozzle tip, and also having laterally extending outlet elements each provided with means to removably attach a section of hose, in combination with a reducing nozzle-tip removably securable on said outlet end, and closures normally secured on said laterally extending outlet elements and removable from the latter to permit said sections of hose to be attached.

3. The combination defined by claim 2, the aggregate speed-volume flow-capacity of said reducing nozzle tip and said laterally extending outlet elements being substantially equal to the speed-volume flow-capacity of said inlet end.

4. The combination defined by claim 1, and a conduit to which said inlet end is normally attached in open communication, said conduit being provided with a manually operable cut-off valve for enabling the user to stop the flow of liquid while the closures are being removed and the hose sections attached on the laterally extending elements.

5. The combination defined by claim 2, and a conduit to which said inlet end is normally attached in open communication, said conduit being provided with a manually operable cut-off valve for enabling the user to stop the flow of liquid while the closures are being removed and the hose sections attached on the laterally extending elements.

6. The combination defined by claim 2, and laterally extending means on said tubular unit for engagement with a ladder-rung or other object for assisting a user in holding the tubular unit in a supported position while the said hose sections are attached and being used for conducting and directing streams of liquid.

EDWARD CLAWSON.