

Nov. 9, 1926.

1,606,377

C. R. MURRAY

BASEMENT CIRCULATOR

Filed Sept. 5, 1923

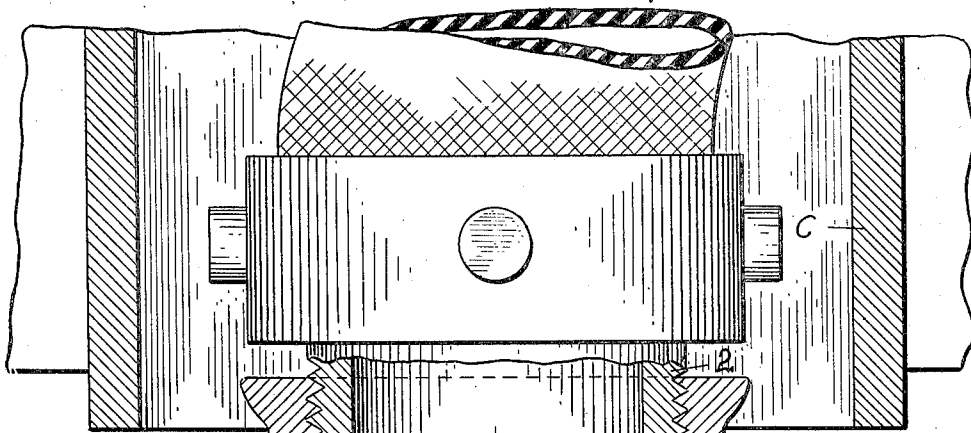


Fig. 1.

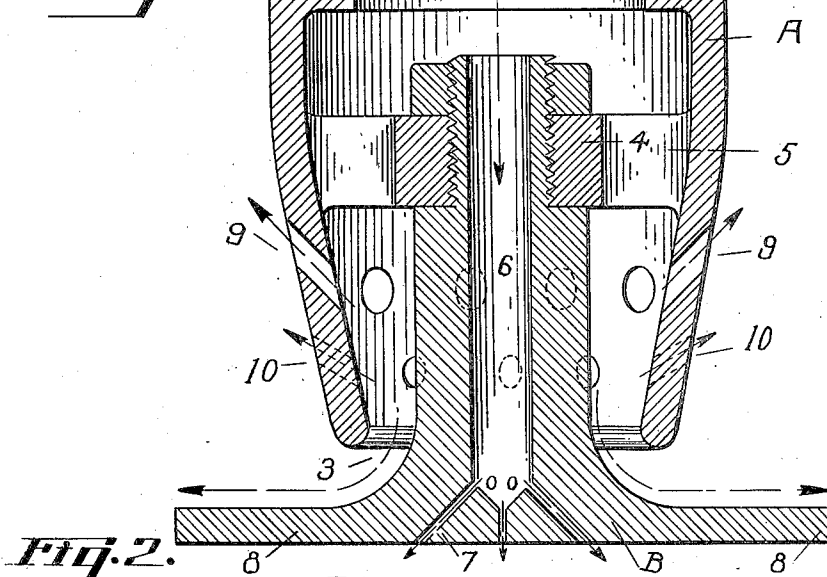
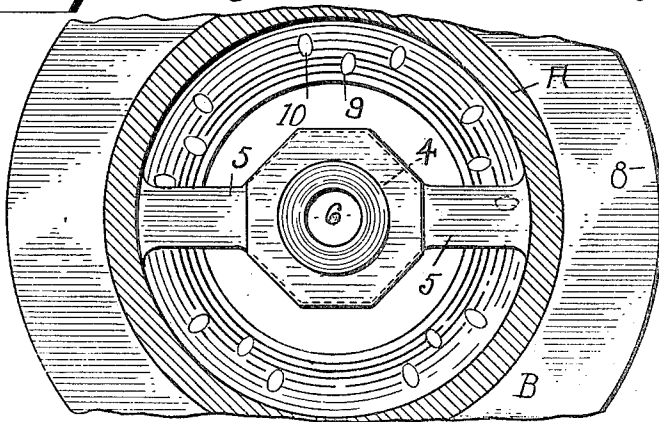


Fig. 2.



INVENTOR
CHARLES R. MURRAY

BY *Severy, Strong,*
Innocent & Loftis.
ATTORNEYS

Patented Nov. 9, 1926.

1,606,377

UNITED STATES PATENT OFFICE.

CHARLES R. MURRAY, OF SAN FRANCISCO, CALIFORNIA.

BASEMENT CIRCULATOR.

Application filed September 5, 1923. Serial No. 660,980.

This invention relates to a basement circulator or so-called cellar nozzle.

Basement circulators or cellar nozzles are employed by fire departments for the purpose of extinguishing basement fires. These nozzles are coupled to the fire hose and lowered through the basement casing pipe into the basement where as much as a thousand feet of floor area may be sprayed or drenched with water from a single nozzle, as nozzles of this character are of the rotating type and are provided with a number of discharge outlets, so placed that the nozzle will automatically rotate the moment the water under pressure is turned on. Although nozzles of this character cover a large area, it is found that they are not entirely satisfactory and dependable; that is, basements in certain types of buildings, such as stores, warehouses, etc., are often stacked to the ceiling with goods and material of a varying nature and when the circulator is lowered through the pipe casing it often happens that the nozzle contacts with one obstruction or another, thus preventing free rotation of the nozzle and the formation of a circular spreading spray. In other words, if the nozzle is prevented from rotating, a series of interspaced jets will discharge from the nozzle and the fire will thus have free play in the spaces intermediate the jets.

The object of the present invention is to generally improve and simplify the construction and operation of nozzles of the character described, and particularly to provide a nozzle which does not require any rotating parts and which will efficiently deliver a series of circular spreading sprays regardless of whether obstructions are encountered or not.

One form which my invention may assume is exemplified in the following description and illustrated in the accompanying drawings, in which—

Fig. 1 is a central vertical section of the nozzle.

Fig. 2 is a cross-section on line 2—2, Fig. 1.

Referring to the drawings in detail, and particularly to Fig. 1, A indicates a nozzle casing which may be coupled to the end of a fire hose in any suitable manner or as here indicated at 2. The lower end of the casing is open for the reception of a secondary nozzle generally indicated at B. The casing A is tapered near the lower end and a more or

less contracted annular discharge opening 3 is thus formed between the nozzles. The interior portion of the nozzle A is provided with a centrally disposed bearing member 4 which is rigidly supported by a series of spider arms such as indicated at 5. The center portion of the bearing member 4 is interiorly threaded and the upper end of the secondary nozzle is exteriorly threaded so that it may be screwed into and secured by the bearing member 4, a lock nut being provided on the upper end to secure the secondary nozzle when in place. The center portion of the secondary nozzle is cored out or provided with a central vertical passage such as indicated at 6. The lower end of this passage terminates in a series of radially disposed, downwardly pointing discharge openings 7. The secondary nozzle is otherwise provided with an annular disk like flange 8 which forms a spreader for the discharge opening 3. The nozzle or casing section A is furthermore provided with a series of upwardly pointing, radially disposed discharge openings such as indicated at 9 and 10, a series of separate sprays being in this manner discharged as will hereinafter be described.

It is well known that practically all fire ordinances require a number of basement casing pipes for emergency use in case of fire. The local fire ordinance in San Francisco requires a basement casing pipe such as indicated at C for every nine hundred square feet of exposed basement floor area. In case of fire in a basement it is difficult for the firemen to enter due to smoke and lack of air, and it is for this reason that most local ordinances require basement casing pipes, such as here illustrated. Therefore in case of a basement fire it is only necessary to remove the cover of the casing and to lower the fire hose with the nozzle attached. The hose and nozzle may be lowered to any point desired and when the water is turned on a series of sprays will be discharged which will cover and drench the required area; that is, the water entering the nozzle A from the fire hose will first form an annular upwardly directed spray which discharges through the radially disposed openings 9 and 10, this spray striking the ceiling and wetting the same and thus preventing the fire from destroying the ceiling; secondly, a horizontally directed annular disk of spray will be formed by the water which discharges through the annular opening 3. The water

discharging therefrom is deflected horizontally by the disk or flange 8 and as such forms a second spray. The third spray is downwardly directed and discharges through
5 the radially disposed openings 7, which are supplied with water through the central passage 6; this spray drenching the goods below the nozzle.

By referring to the construction of the
10 nozzle it can readily be seen that no rotating parts are employed or required. This is exceedingly important as the nozzle here shown will be equally efficient whether an obstruction is encountered or not; that is, the circular
15 sprays are formed by the discharge openings 3, 7, 9 and 10, and as these are not carried by rotating parts it makes comparatively little difference whether an obstruction is encountered or not. The nozzle is
20 therefore efficient under all conditions and insures perfect spreading of the water and drenching of the goods or material on fire.

The nozzle as previously stated is preferably coupled to the fire hose, but it may also
25 be attached to play pipes, overhead standpipe equipment, etc., and as such is not limited in its application and use.

Having thus described my invention, what I claim and desire to secure by Letters Patent is—

1. A device of the character described comprising a nozzle casing adapted to be connected at one end with a source of water supply under pressure, said nozzle being
35 open at the opposite end, a secondary nozzle insertible in said open end and spaced with relation thereto to form a continuous annular discharge opening, and means for directing water when discharging through said
40 annular discharge opening at substantially right angles to the longitudinal axis of said nozzles, said first and second named nozzles having respectively upwardly and downwardly directed openings formed therein
45 for discharging separate upwardly and downwardly directed annular streams of water.

2. A device of the character described comprising a nozzle open at its lower end
50 and adapted to be connected at the opposite

end with a source of water supply under pressure, a bearing member interior of said nozzle, a secondary nozzle secured in said bearing member projecting through the open end of the first named nozzle, said secondary nozzle being spaced with relation to the first named nozzle to form a continuous annular discharge opening, said secondary nozzle having a central passage formed therein in communication with the source of
60 water supply, and a plurality of radially disposed, downwardly directed discharge passages formed in the secondary nozzle in communication with said central passage, and said first named nozzle having a plurality of radially disposed, upwardly directed
65 discharge openings formed therein in communication with the source of water supply.

3. A device of the character described comprising a nozzle open at its lower end
70 and adapted to be connected at its upper end with a source of water supply under pressure, spider arms within the nozzle, a bearing member secured by said spider arms, a secondary nozzle secured in said bearing
75 member, said secondary nozzle being cylindrical in cross-section and elongated to project through the lower open end of the first-named nozzle, said secondary nozzle being spaced with relation to the first-named nozzle to form a continuous annular restricted
80 discharge opening at the lower end of the first-named nozzle, a disk formed on the lower end of the secondary nozzle and disposed at right angles to the longitudinal axes of both nozzles and adapted to receive and deflect water discharging through the annular opening so as to form a continuous unbroken sheet of discharging water, said secondary nozzle
85 also having a central passage formed therein in communication with the interior of the first-named nozzle, a plurality of radially disposed downwardly directed discharge passages formed in the secondary nozzle in communication with said central passage and
90 said first-named nozzle having a plurality of radially disposed upwardly directed discharge openings formed therein in communication with the source of water supply.

CHARLES R. MURRAY.