Feb. 3, 1931. C. K. FITTS 1,790,908

NOZZLE TIP

Filed Oct. 29, 1928

Fig. 1.

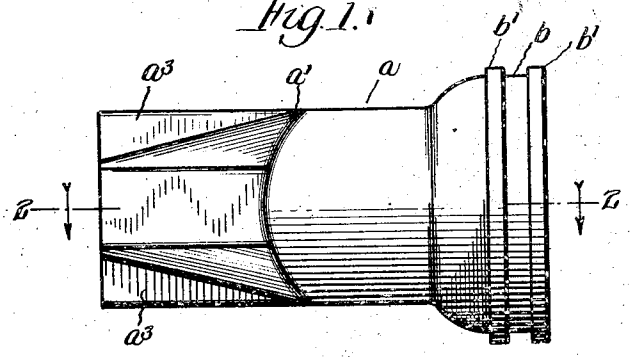


Fig. 2.

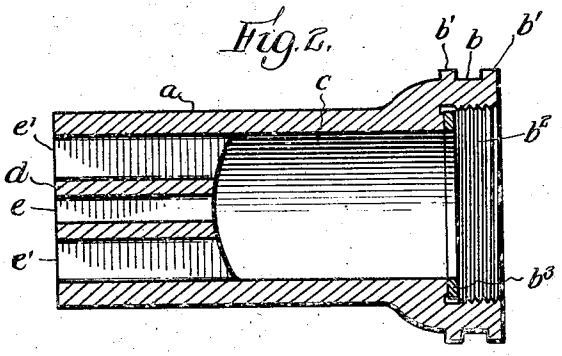
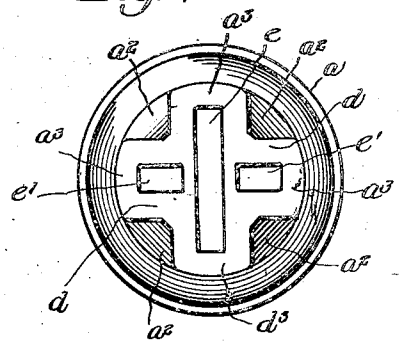


Fig. 3.



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Patented Feb. 3, 1931

1,790,908

UNITED STATES PATENT OFFICE

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NOZZLE TIP

Application filed October 29, 1928. Serial No. 315,688.

My invention relates to nozzle tips and more particularly to tips designed for fire department use, and has for its object to provide a simple, rugged and efficient tip for certain uses in extinguishing fires, as hereinafter more fully described.

As is well known, greater damage is frequently caused in fires, especially in apartments and private dwellings, by water than by the fire itself, and in many localities aggressive steps to deal constructively with this problem are being taken in an endeavor to reduce to a minimum the losses caused by water damage, and an attempt is made to cut down the water used to the smallest possible volume.

As is also well known, in large fires there is frequently a necessity for protecting adjacent buildings against the spread of the fire by the use of a curtain of water. With nozzles now in use, it is sometimes impossible to provide adequate protection of this character owing to the decrease in pressure caused by the large amount of water needed for extinguishing the main conflagration.

In carrying out my invention, therefore, I have provided a nozzle tip which furnishes an adequate supply of water in a concentrated stream in a form adapted to extinguish small fires with the minimum amount of water and which, owing to its construction, will also provide a curtain stream at sufficient pressure for the protection of neighboring buildings.

Referring to the drawings, Fig. 1 is a side elevation of my improved nozzle tip. Fig. 2 is a longitudinal section on the line 2—2 of Fig. 1. Fig. 3 is an end elevation looking toward the discharge end of the tip.

In the drawings, *a* indicates the main body portion of my nozzle tip, which comprises a metal cylinder having at its receiving end an enlargement *b* surrounded by parallel flanges *b'*, these latter being for the ready attachment of the tip to the usual cutoff. Interiorly this portion is screw threaded at *b*—2 for attachment to the cutoff and is provided with a suitable washer *b*—3. The interior of the tip is formed with a water chamber extending from the receiving end toward the discharge end, this chamber being designated by the leter *c*. At the discharge end this chamber is partially closed by a block of metal *d* cast integral with the wall of the tip. Through this block of metal extend narrow, substantially rectangular, straight passage ways *e*, *e'*. These passage ways are of uniform cross section substantially throughout their length. The passage way *e* extends across substantially one diameter of the tip, while the passage ways *e'* are shorter and are located on each side of and substantially at right angles to the longer passage way *e* on another diameter thereof. These passage ways are parallel with the outer wall of the tip and form in connection with the receiving chamber *c* a straight course for the water, thus avoiding any swirling action thereof. It will be noted that the passage ways form a substantially +-shaped exit for the water. From the point *a'* of the body portion parts *a*—2 of the exterior wall slope downwardly toward the exit end of the tip, while the remaining portions of the wall continue in a straight line to the exit end. This leaves reinforcing portions *a*—3 between the sloping portions, through which reinforcing portions the passage ways, hereinbefore described, pass. It will be noted that in my improved tip, which as before stated, is intended for use with the usual cut-off now employed by modern fire departments, I have provided a partially closed receiving chamber for the stream of water, from which the rectangular exit openings furnish a passageway for the stream. It will be further noted that the elongated passageway extends substantially across one diameter of the tip thus furnishing an exit for a flat stream of water of the same width as that of the standard tip having a circular opening, and that the smaller passageway at right angles to this elongated passageway furnish in connection with the stream emerging from this elongated passageway another stream of substantially the same width as that emerging from the standard circular tip while the partially closed receiving chamber functions as a compression chamber increasing the pressure of these streams. Owing to the reduced area of the exits as compared to the circular opening of

the standard tips now in use, I am able to throw upon a fire a stream of water covering the same area as that of the standard tip with a less amount of water and at high pressure. This is important in the extinguishing of small fires to prevent to as great a degree as possible, water damage. The receiving chamber, with the restricted exits, provides adequate pressure where the pressure from the source of supply is low. Where the pressure of the source of supply is high, the stream from my tip, owing to its increased pressure, will carry to a greater distance and, because of the flat streams issuing from the exits, will have a greater blanketing effect and produce the desirable water curtain.

It will be noted that I have provided a nozzle tip which, owing to the restricted passage ways and to the shape and location thereof, will throw a smaller amount of water at a higher pressure than the ordinary tip and will so spread the water as to make it most effective in the extinguishing of small fires.

It will also be noted that owing to the provision of the larger water chamber and the restricted openings a greater pressure will be obtained when the water pressure is decreased owing to its extensive use in a large fire so that it will be possible to provide a curtain stream for the protection of adjacent buildings.

While I have described one embodiment of my invention, I contemplate such changes and modifications as come within the spirit and scope of the appended claims.

I claim:

1. A nozzle tip having at its receiving end a water receiving chamber partially closed at its discharge end and at its discharge end formed with an elongated, substantially rectangular discharge passage way extending across one diameter and with a similar passage way on another diameter at each side of the elongated passage way.

2. A nozzle tip having at its receiving end a water receiving chamber, said chamber being partially closed at the discharge end of the tip, said discharge end having a substantially +-shaped exit, substantially as described.

CHARLES K. FITTS.