

(No Model.)

W. F. CUNNINGHAM.  
SHIELD NOZZLE.

No. 548,775.

Patented Oct. 29, 1895.

Fig. 2.

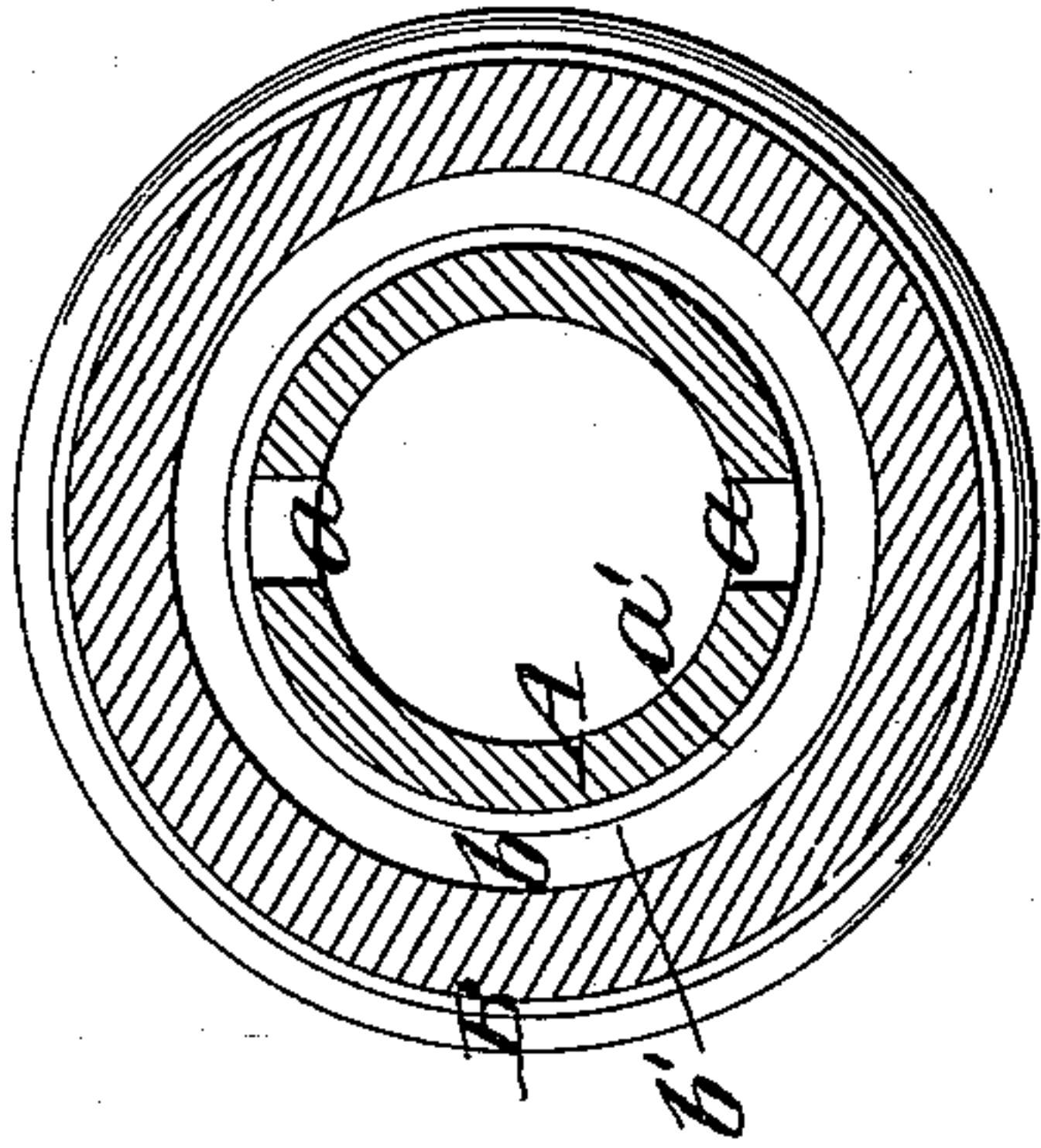


Fig. 1.

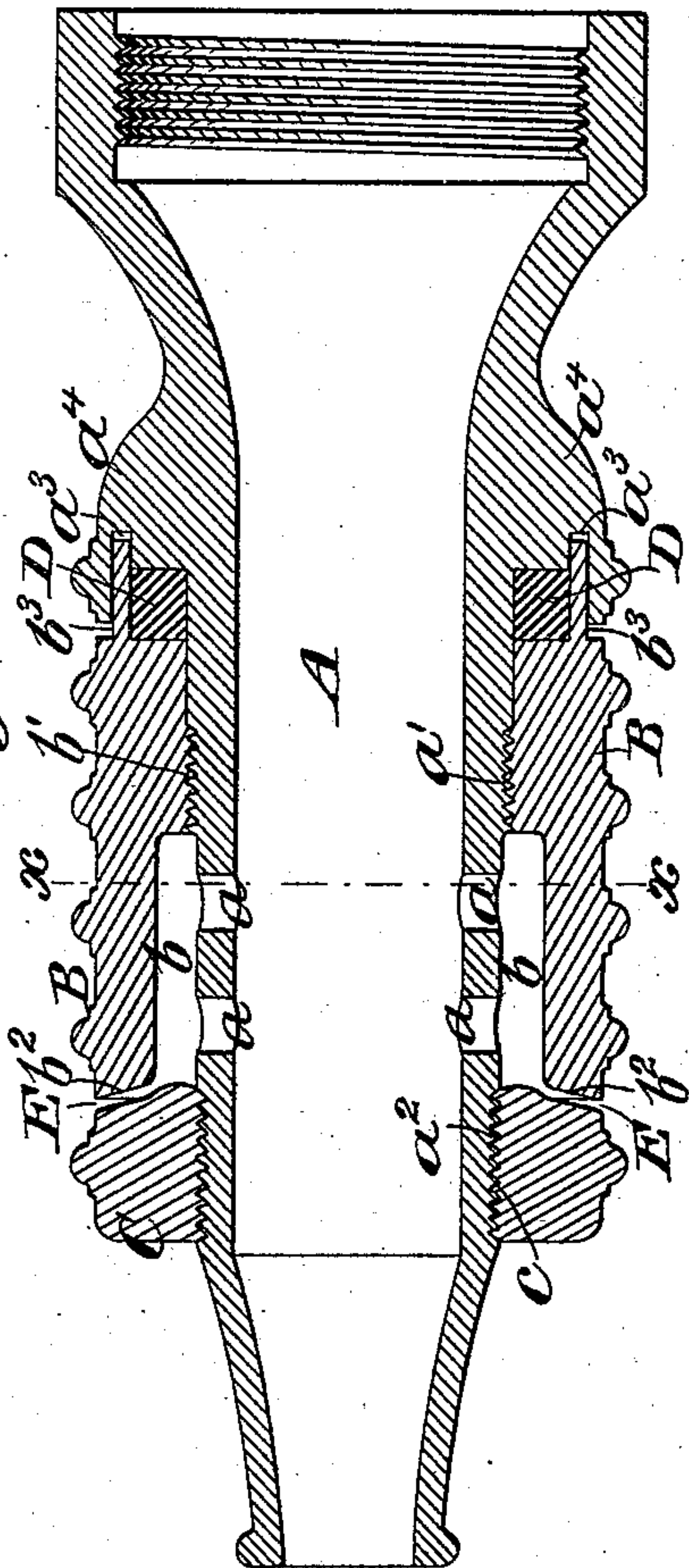
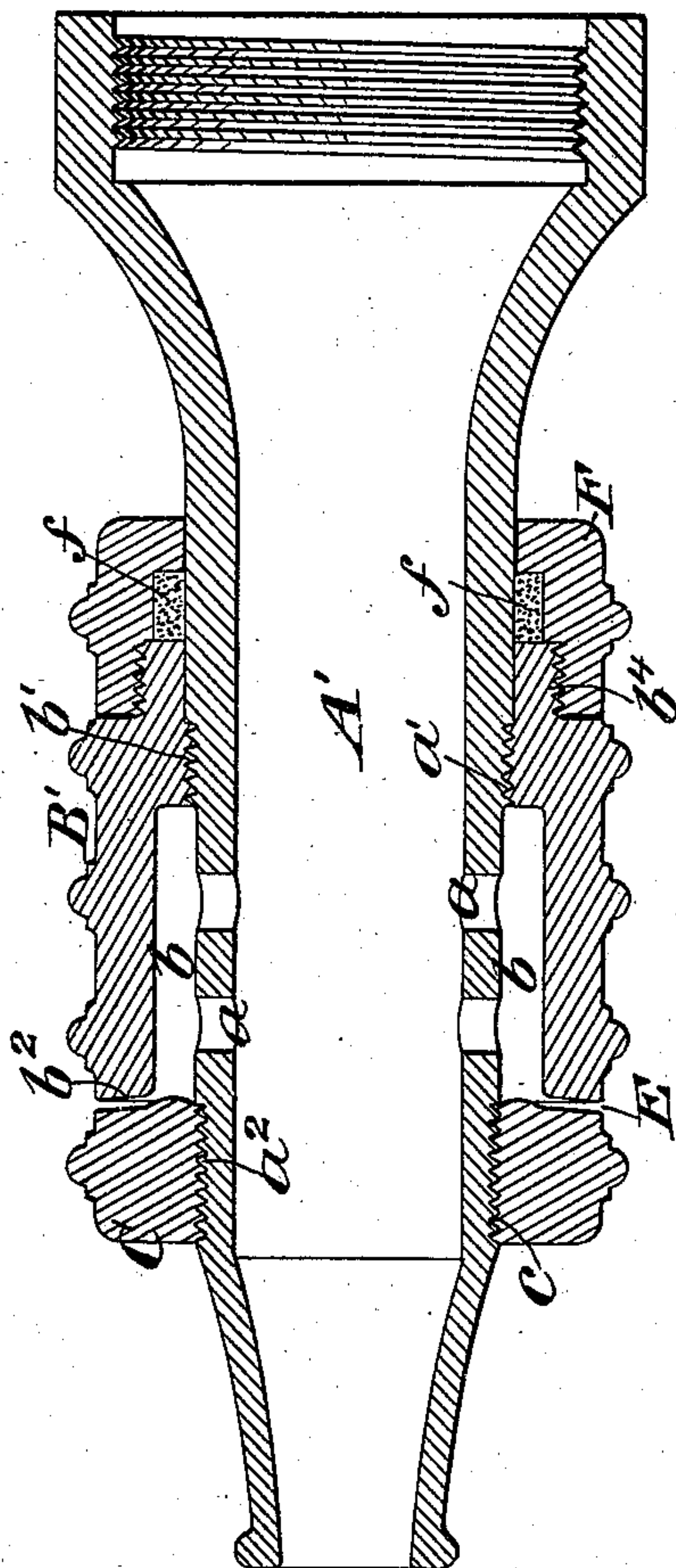


Fig. 3.



Witnesses:

O. Sundgren

George Barry,

Inventor:  
William F. Cunningham  
by attorneys  
Brown & Dewar



# UNITED STATES PATENT OFFICE.

WILLIAM F. CUNNINGHAM, OF BROOKLYN, NEW YORK.

## SHIELD-NOZZLE.

SPECIFICATION forming part of Letters Patent No. 548,775, dated October 29, 1895.

Application filed January 16, 1895. Serial No. 535,080. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM F. CUNNINGHAM, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Shield-Nozzles, of which the following is a specification.

My invention relates to an improvement in shield-nozzles particularly adapted for use in connection with fire-extinguishing hose to form a shield of water in front of the fireman carrying the discharge end of the hose into proximity to or through smoke and flame.

The invention consists in providing a nozzle with an annular discharge-opening at an angle to its longitudinal axis, which may be opened or closed at pleasure by the party manipulating the discharge end of the hose.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

Figure 1 represents a longitudinal section of the nozzle; Fig. 2, a transverse section through line  $x x$  of Fig. 1, and Fig. 3 a longitudinal section through a nozzle provided with a different structure of stuffing-box.

It is intended that the nozzle here shown shall be adapted at its base for attachment to the discharge end of hose such as is in common use.

The body of the nozzle is denoted by A and is provided intermediate of its ends, preferably near the discharge end, with one or more openings  $a$  through its wall. In practice I prefer to make four of these openings, two on one side and two more diametrically opposite.

The sleeve B, provided with an annular recess  $b$  around the interior of its end toward the nozzle, has a screw-threaded portion  $b'$  along its interior, adapted to engage a screw-threaded portion  $a'$  on the exterior of the body of the nozzle. The end of the sleeve B, toward the discharge end of the nozzle, is slightly beveled, as shown at  $b^2$ , and forms one wall of the annular lateral discharge-opening. The bevel  $b^2$  is intended to give the wall of water which is discharged laterally from the nozzle to form a shield a slight forward inclination, and this inclination may be made more or less, as may be found most expedient by experience. The inclination herein shown has proved eminently satisfactory

in the trials thus far made. The opposite wall of the annular discharge-opening is formed by a nut C, provided with a screw-threaded portion  $c$ , adapted to engage a screw-threaded portion  $a^2$  on the exterior of the body of the nozzle.

The sleeve B, at its end toward the base of the nozzle, is provided with an annular tongue  $b^3$ , adapted to slide within an annular recess  $a^3$ , formed in the face of a thickened or bulged portion  $a^4$  of the nozzle A. Intermediate of the tongue  $b^3$  and the exterior of the body A of the nozzle, between the end of the sleeve B and the face of the bulge  $a^4$ , I locate an elastic packing D, which may be, for all practical purposes, an annular ring of gutta-percha.

As represented in Fig. 1, the nut C is screwed home and the sleeve B is withdrawn from the nut C to open the annular discharge-opening E. When so adjusted, the pressure of the water within the annular chamber formed by the recess  $b$ , which communicates with the interior of the nozzle A through the openings  $a$ , will force the water through the opening E, forming a sheet or wall of water in advance of the operator carrying forward the nozzle, which wall of water will drive back the smoke and flame from his face and body, permitting him thereby to safely travel through smoke and flame to adjust the hose where it can be most effective. When, for any reason, it is not desired to employ the water-shield, or when it has fulfilled its purpose for the time being, it may be cut off by a slight rotary movement of the sleeve B in a direction to force its end  $b^2$  toward the nut C to close the discharge-opening E.

In the form shown in Fig. 3, instead of thickening the body of the nozzle, I have provided the end of the sleeve B toward the base of the nozzle with an exteriorly-screw-threaded projection  $b^4$  for the reception of the interiorly-screw-threaded end of the stuffing-box ring F, adapted to compress a ring of elastic material  $f$  between it and the end of the sleeve B and thereby close the joint tightly between the sleeve and the exterior of the nozzle A'.

It is obvious that slight changes might be resorted to in the form and arrangement of the several parts described without depart-

ing from the spirit and scope of my invention. Hence I do not wish to limit myself strictly to the structure herein set forth; but

What I claim is—

5 The combination with the discharge nozzle provided with a thickened portion having an annular recess in its face and having openings through the body of the discharge nozzle, of an interiorly recessed sleeve having a  
10 screw threaded engagement with the exterior of the body of the nozzle and provided with an annular tongue adapted to enter the said

annular recess in the thickened portion of the body of the nozzle and a nut having a screw threaded engagement with the exterior 15 of the body of the nozzle and forming an abutment for one end of the said recessed sleeve to close a discharge passage between said nut and sleeve, substantially as set forth.

WILLIAM F. CUNNINGHAM.

Witnesses:

FREDK. HAYNES,  
GEORGE BARRY.