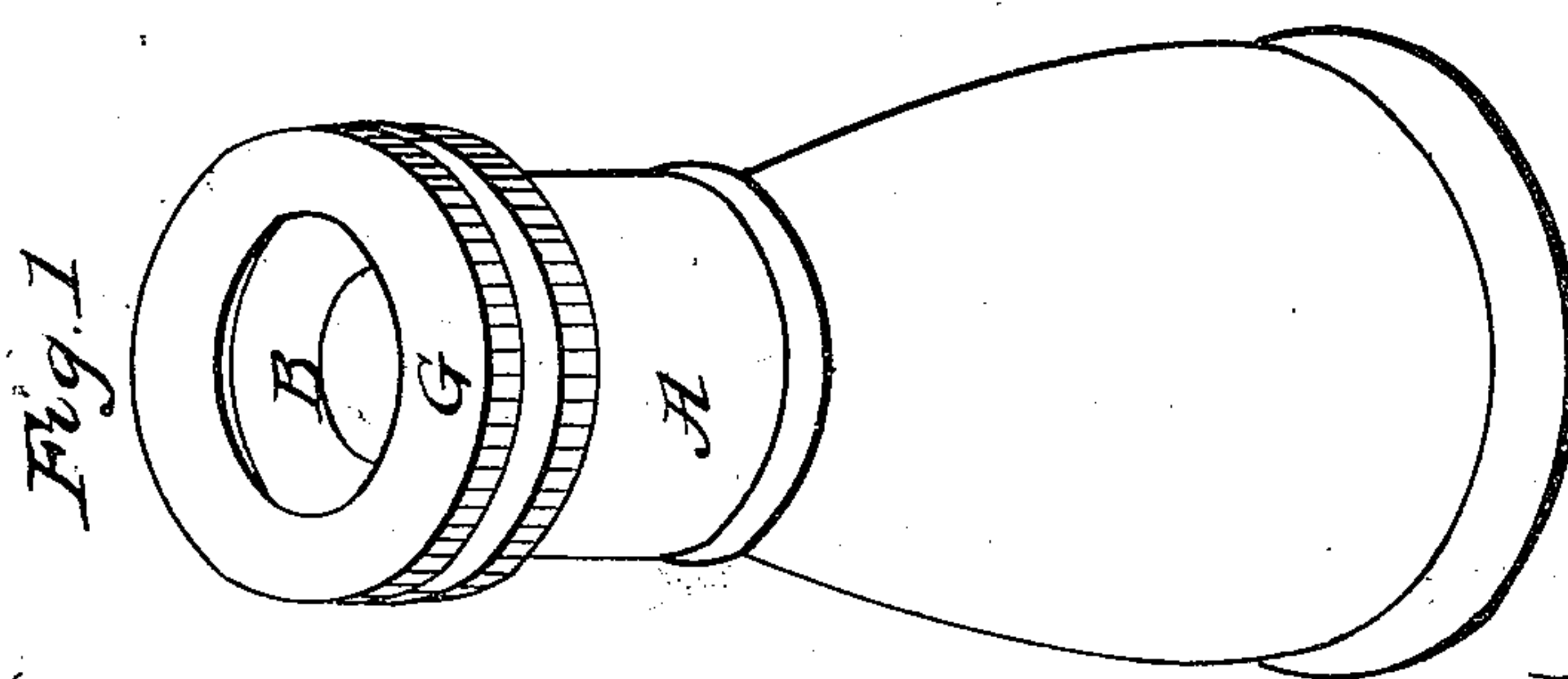
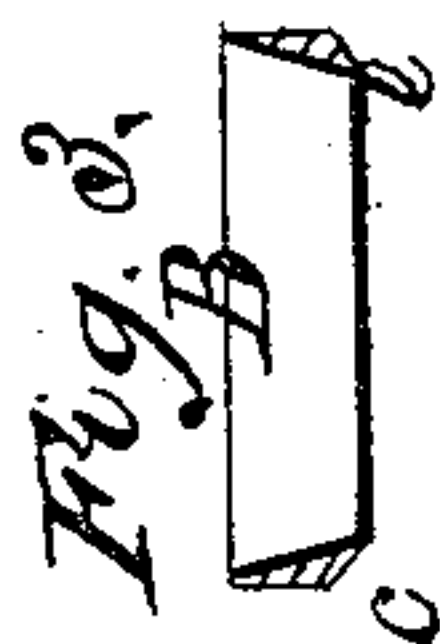
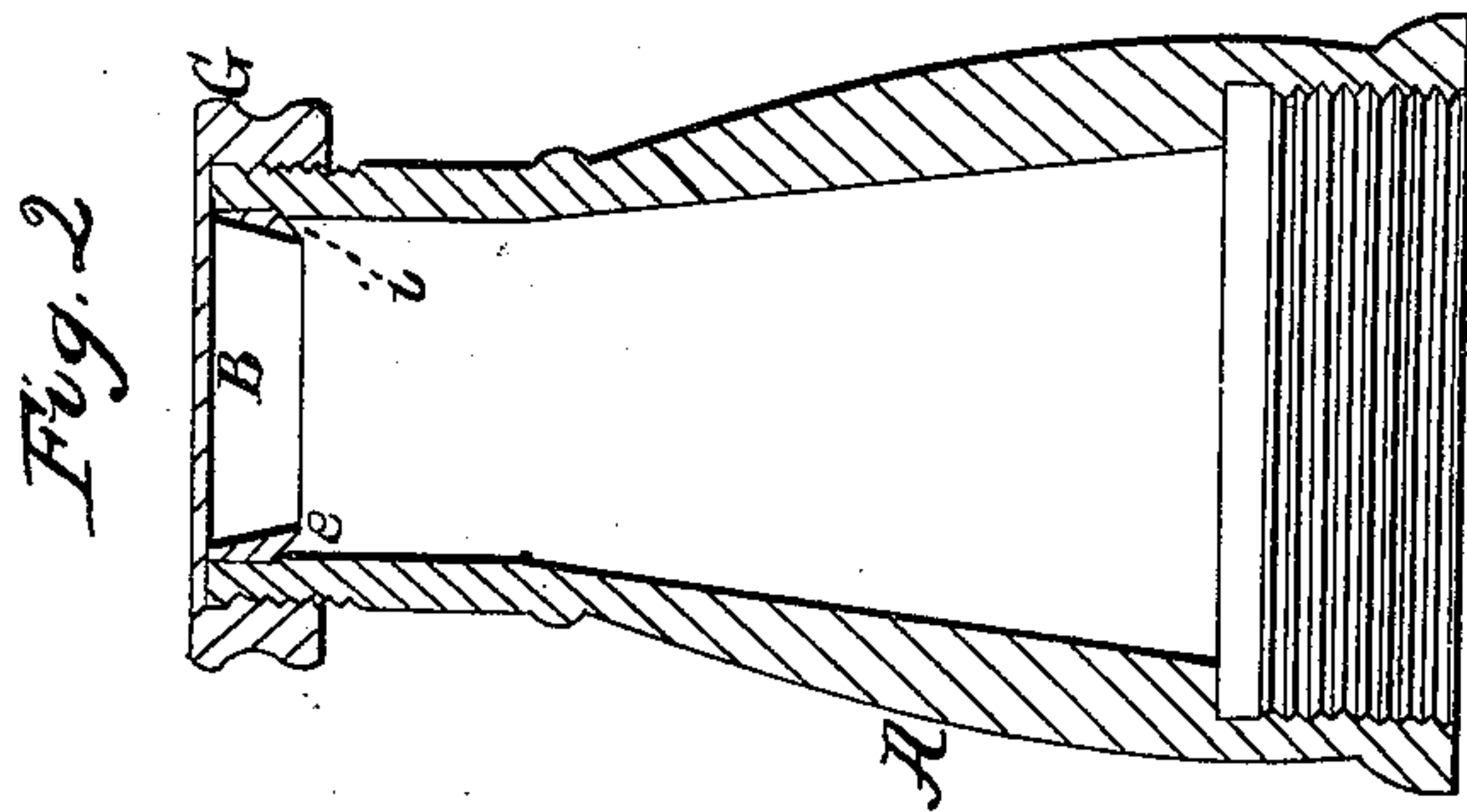


Button & Blake,

Nozzle,

Nº 26,088.

Patented Nov. 15, 1859.



Witnesses:

O. Button
J. E. Button

Inventor:

Lysander Button
Robert Blake

UNITED STATES PATENT OFFICE.

LYSANDER BUTTON AND R. BLAKE, OF WATERFORD, NEW YORK.

NOZZLE FOR FIRE-ENGINES, &c.

Specification of Letters Patent No. 26,088, dated November 15, 1859.

To all whom it may concern:

Be it known that we, LYSANDER BUTTON and ROBERT BLAKE, of Waterford, in the county of Saratoga and State of New York, have invented an Improvement in Nozzles or Ajutages for Fire-Engines and Hydraulic Machines, and that the following is a full, clear, and exact description of the principle or character which distinguishes it from all other things before known and of the usual manner of making, modifying, and using the same, reference being had to the accompanying drawings, of which—

Figure 1 is a perspective view of the nozzle of a fire engine pipe; Fig. 2, a middle longitudinal section of the same with the ring in place; Fig. 3, a sectional view of the ring removed from the nozzle.

Our invention consists in a certain improvement in the nozzle or ajutages of fire engines and other hydraulic machines described as follows:

Just within the extremity of the nozzle A we insert a ring B of the form shown in section in Fig. 3 and secure the same in place by means of the screw cap C. The inner part *e* of the ring comes to a sharp edge and between this sharp edge and the inner wall of the nozzle A there is an angular space *i*.

The inner surface of the ring is conical as clearly shown in Figs. 2 and 3. The sharp edge of the ring cuts the stream of water in such manner as to prevent the whirling and foaming so common to plain nozzles and delivers the water in a smooth stream. The retention of water in the angular recess serves to diminish friction incident to the abrupt change in the size of the stream and the effect of the whole is to give a farther projection of the stream than by the plain nozzle. The ring may be made a part of the nozzle, but the objection is a serious one for whenever the sharp edge gets bruised the whole nozzle must be renewed, and by making the ring removable as above set forth it is easily replaced when injured.

What we claim as our invention and improvement in nozzles for fire engines and other ajutages is—

The removable ring B constructed and combined with the ajutage substantially as herein set forth.

LYSANDER BUTTON.
ROBERT BLAKE.

Witnesses:

E. BUTTON,
T. E. BUTTON.