

No. 717,200.

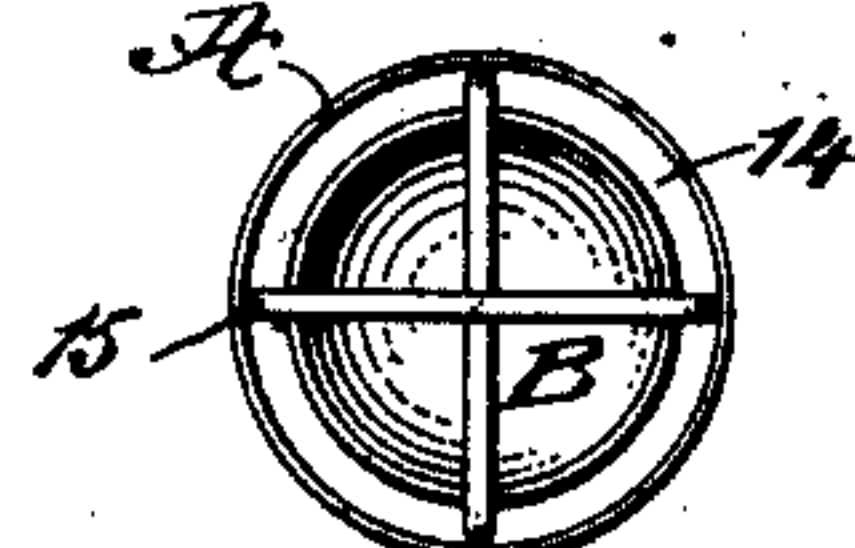
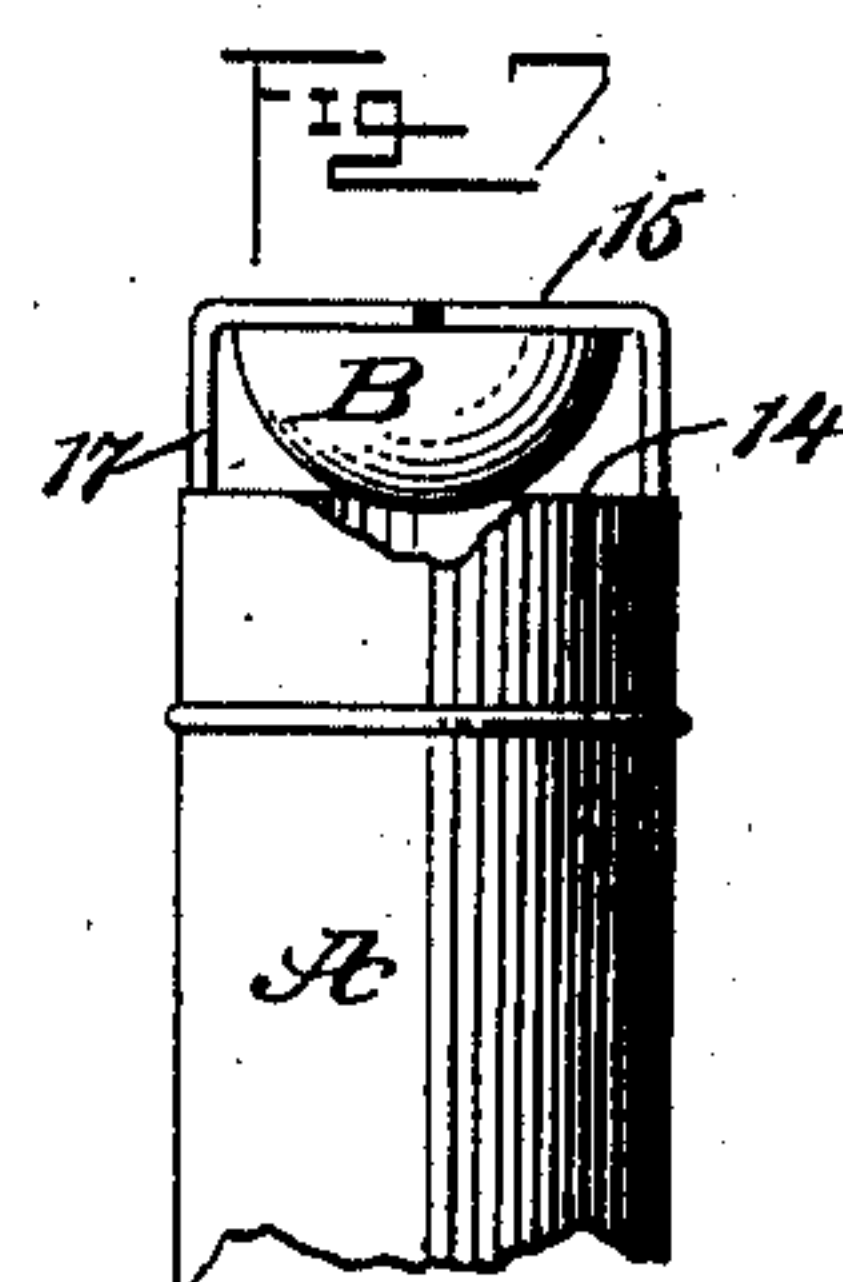
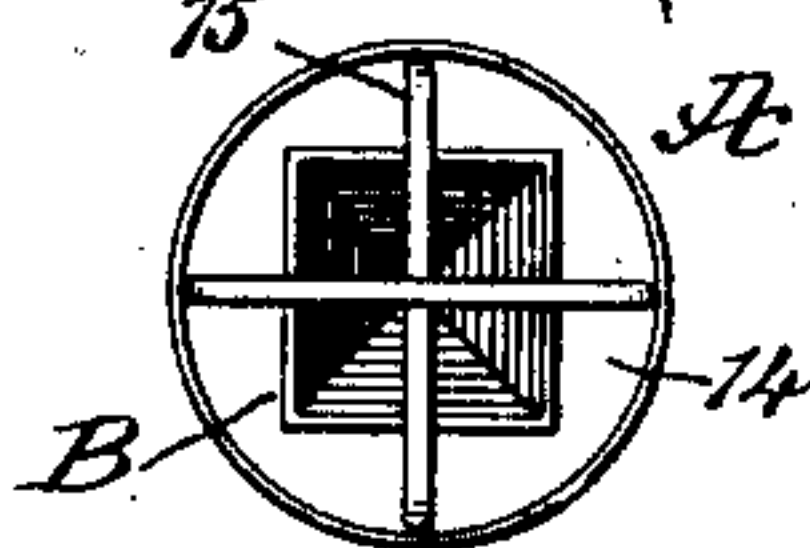
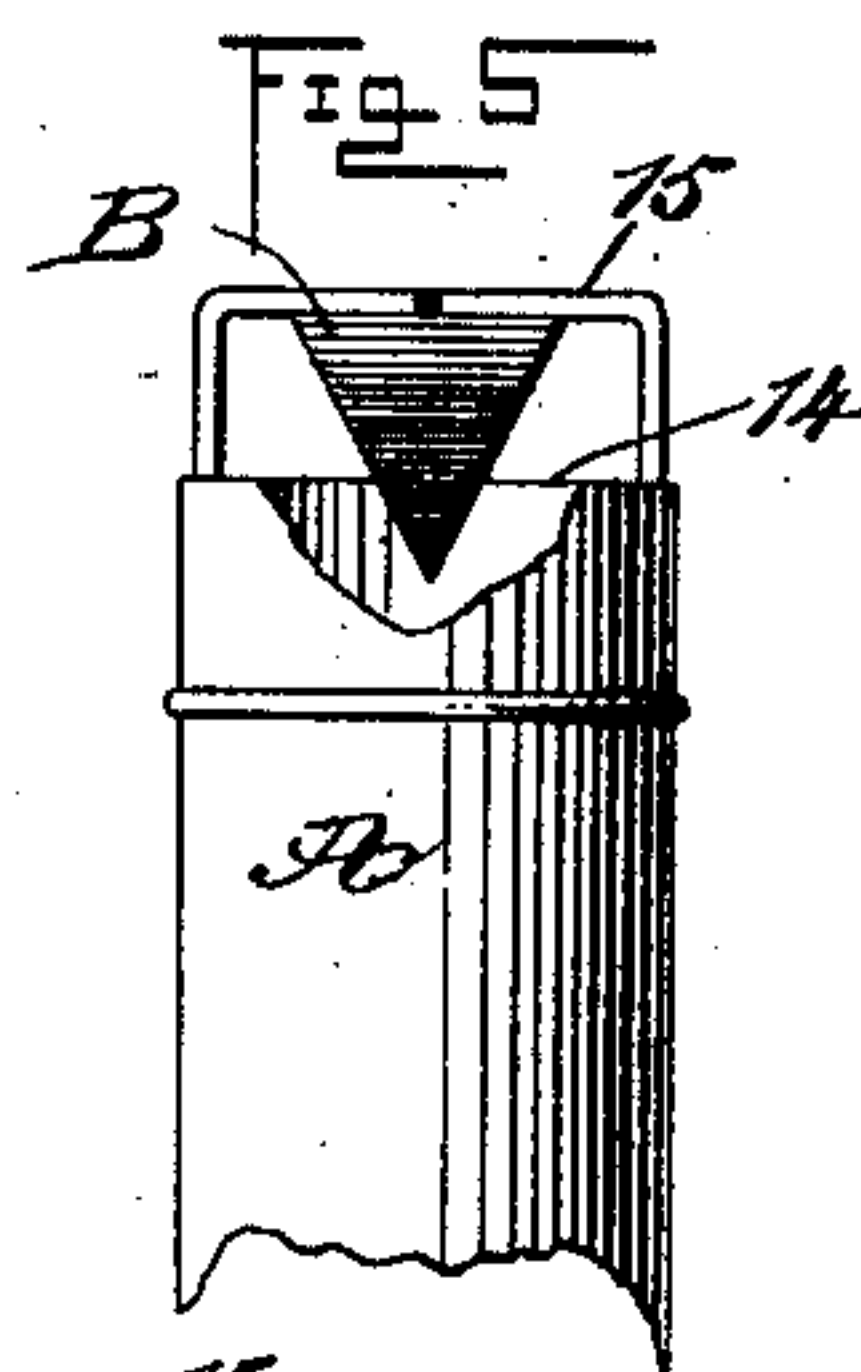
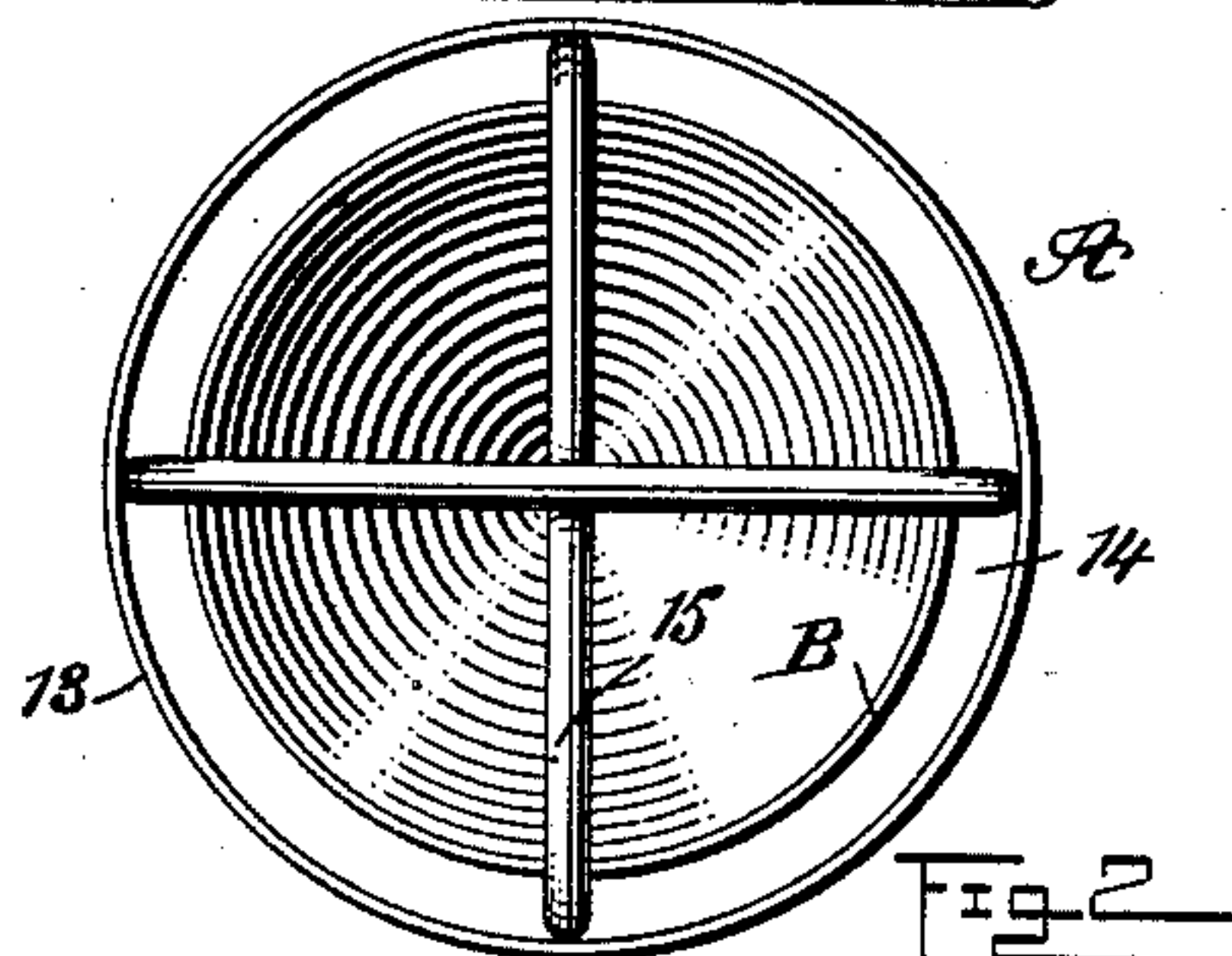
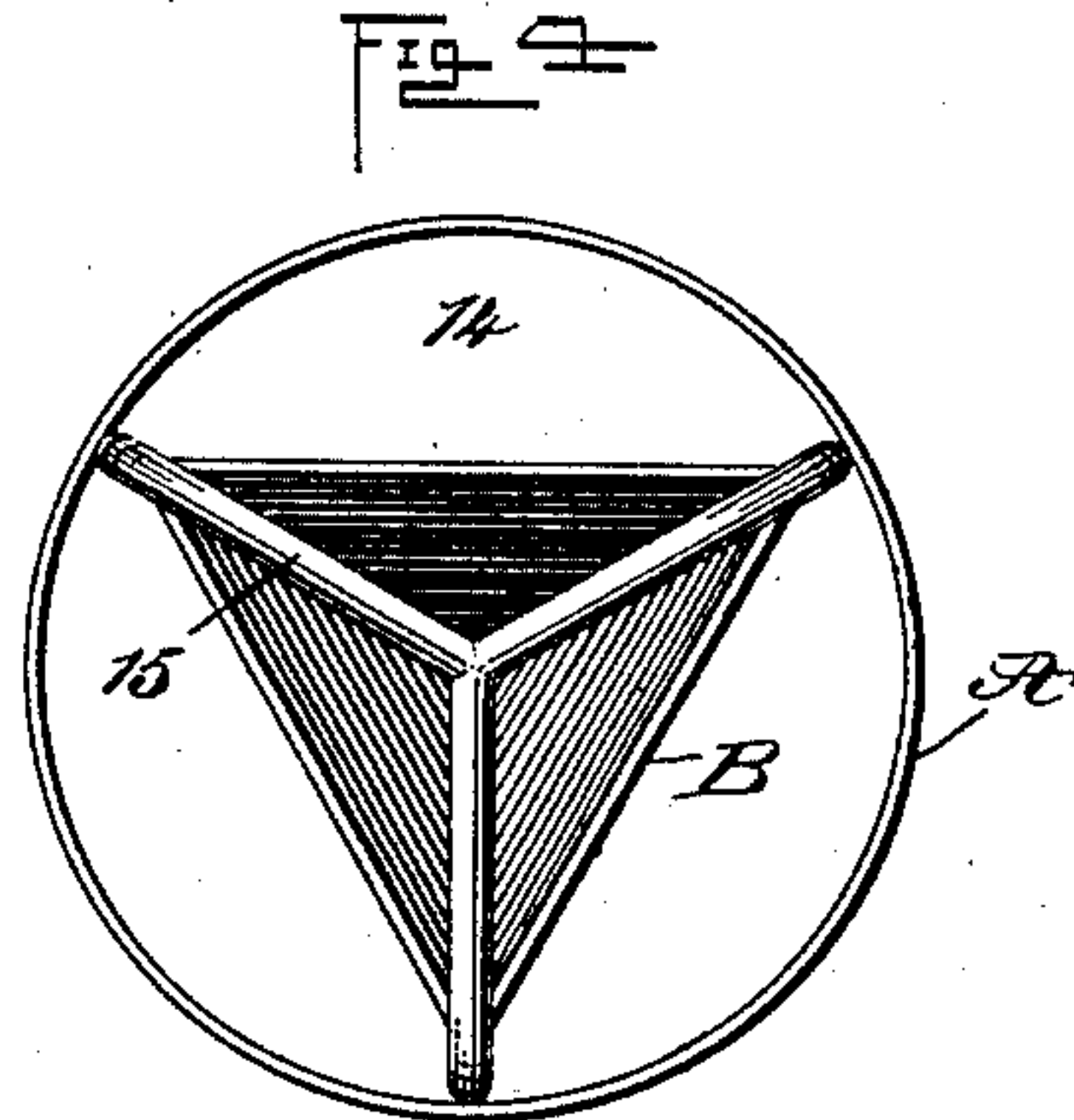
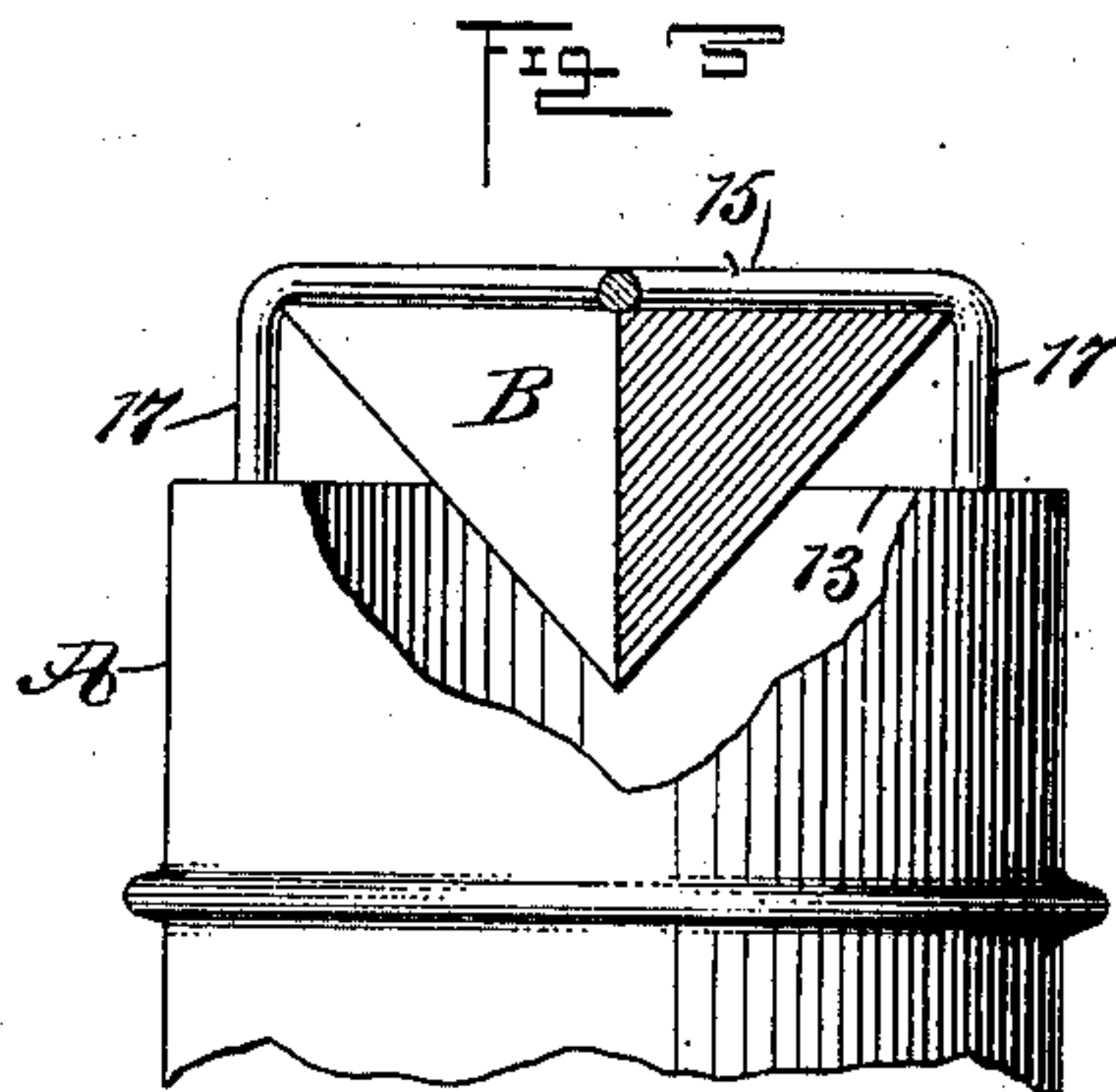
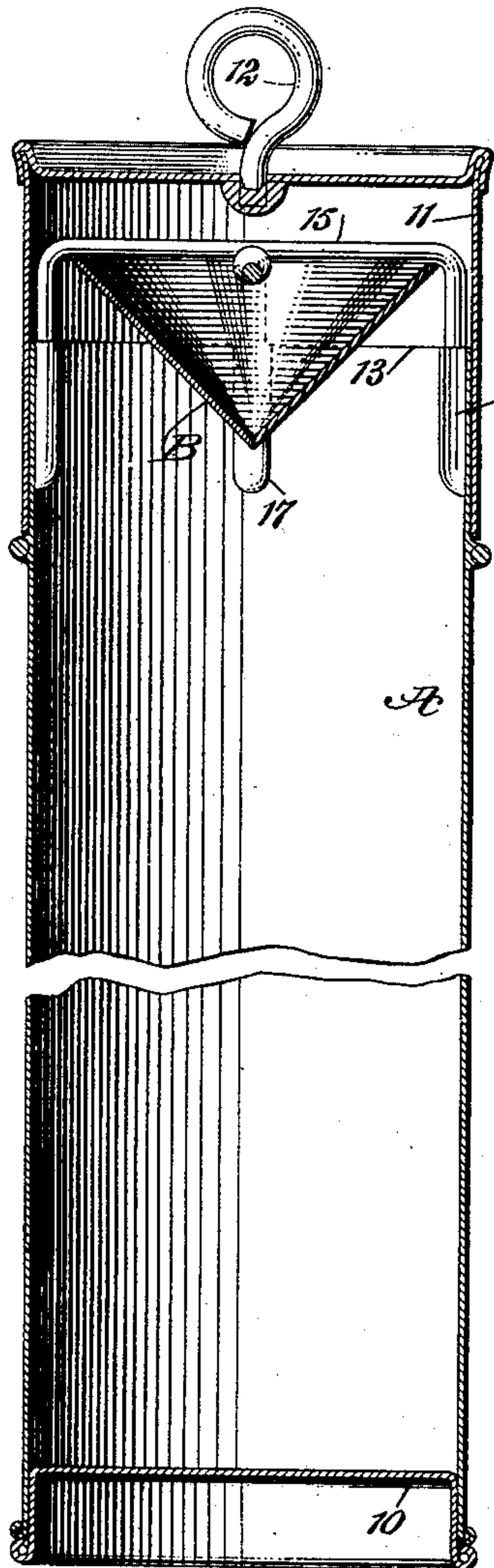
Patented Dec. 30, 1902.

A. & T. R. HOPPER.

DRY COMPOUND FIRE EXTINGUISHING TUBE.

(Application filed May 21, 1902.)

(No Model.)



WITNESSES:

John C. Cheney
J. H. Hopper

INVENTORS

Alfred Hopper
Thomas R. Hopper

BY

Mumford
ATTORNEYS.

UNITED STATES PATENT OFFICE.

ALFRED HOPPER AND THOMAS R. HOPPER, OF HIGHLAND, NEW YORK,
ASSIGNORS TO THE HOPPER POWDER GUN COMPANY, OF HIGHLAND,
NEW YORK, A CORPORATION OF NEW JERSEY.

DRY-COMPOUND FIRE-EXTINGUISHING TUBE.

SPECIFICATION forming part of Letters Patent No. 717,200, dated December 30, 1902.

Application filed May 21, 1902. Serial No. 108,362. (No model.)

To all whom it may concern:

Be it known that we, ALFRED HOPPER and THOMAS R. HOPPER, citizens of the United States, and residents of Highland, in the county of Ulster and State of New York, have invented a new and Improved Dry-Compound Fire-Extinguishing Tube, of which the following is a full, clear, and exact description.

Our invention relates to improvements in devices for throwing dry powdered compounds for the purpose of extinguishing fires.

The purpose of the invention is to provide a tube or like receptacle so constructed that it will not allow the compound to fall in large masses, and thus exert but little influence on the fire, but which, through the action of the hand in throwing the material from the tube, in conjunction with a diffusing device at the mouth of the tube, will produce a large quantity of well-diffused powder, resulting in a greater generation of fire-extinguishing gas, and consequently producing a greater effect upon the fire, together with a greater economy in powder, which latter is of material benefit to a person using the extinguisher, enabling him to extinguish a much greater surface on fire.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal central section through the improved tube with the cover in position thereon. Fig. 2 is an end view of the tube shown in Fig. 1, the cover being removed. Fig. 3 is a sectional side elevation of the delivery end of a tube, illustrating a slight difference in the form of the diffusing device. Fig. 4 is an end view of the device constructed as shown in Fig. 3. Fig. 5 is a sectional side elevation of the delivery end of the tube, drawn on a smaller scale and illustrating another form of the diffusing device. Fig. 6 is an end view of the device as constructed in Fig. 5. Fig. 7 is also a sectional

side elevation of the delivery end of the tube drawn upon a small scale and illustrating a further modification in the construction of the diffusing device, and Fig. 8 is an end view of the tube constructed as shown in Fig. 7.

The tube A may be of any desired dimensions and may be made of any suitable material. It is provided with a removable bottom 10, preferably fitted within the tube, as is shown in Fig. 1, enabling the tube to be readily filled with powder when said bottom 10 is removed. At the open outlet end of the tube a cap or cover 11 is preferably made to slide exteriorly thereon, which cap or cover is provided with a ring or eye 12, so that the device may be suspended from a hook or nail or its equivalent, and whereby at such time when the device is needed the body may be speedily separated from the cover by subjecting the former to a quick downward movement.

At the delivery end 13 of the tube A a diffusing device B is located, stationary or removable, as desired. The diffusing device B may be of any suitable form. For example, the device is shown in Figs. 1 and 2 in the form of an inverted cone, in Figs. 3 and 4 as an inverted pyramid having a triangular base, in Figs. 5 and 6 as an inverted pyramid having a rectangular base, and in Figs. 7 and 8 as a half-sphere with its convex surface facing the mouth of the tube.

The diffusing device B may be hollow, as is shown, or it may be solid, and its tapering or reduced lower portion only may be made to enter the tube to a greater or less extent, as illustrated, or the said device may be placed wholly within the tube; but under all conditions of usage the dimensions of the upper or outer portion of the diffusing device shall be such as to leave a space 14 between the sides of the diffusing device and the inner wall of the tube A at its outlet end 13.

Under the preferred construction shown in the drawings the diffusing device is supported partially without and partially within the tube B by a spider-frame 15, made, preferably, of a wire of suitable gage, the body or horizontal portion of which spider-frame is

secured in any approved manner to the upper portion of the diffusing device, and said frame is provided with legs 17 at the terminals of its members, secured by soldering or
5 otherwise to the inner surface of the tube A at its outlet end, as is best shown in Fig. 1.

In operation, the cover 11 having been removed, the tube is grasped in the hand and is given a quick jerking or throwing movement in direction of the fire to be extinguished, whereupon the powder in the tube will be expelled well diffused, owing to the flaring shape of the device B, and will leave the tube in a cloud or mass of separated
15 small particles, the result being, as stated, a quick generation of fire-extinguishing gas of greater volume and speedier action than is obtainable by any other form of similar tube of which we have knowledge, since in all the
20 tubes of which we are aware the powder leaves the tube to a great extent in large more or less compact masses, which is a waste of material, as the powder so distributed has comparatively little influence on the fire.

25 Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. A dry-compound fire-extinguishing tube having an open or delivery end; a spider secured to and projecting beyond the delivery
30 end of the tube; a tapered deflector secured at its base to the said spider; and a telescoping cap for closing the end of the tube, and housing the spider and deflector, as specified
35 and shown.

2. A dry-compound fire-extinguishing tube having an open or delivery end; a spider mounted at said end and projecting beyond the same; a tapered deflector carried by said

spider, having its base secured thereto and
40 its apex extending within the mouth of the tube, and a cap for closing the end of the tube, said cap being held on the tube by friction, and provided with a ring, or eye, for suspending the tube, as set forth.

45 3. A dry-compound fire-extinguishing tube having open ends, a spider secured at the delivery end of the tube and projecting beyond the same, said spider being formed of two rods crossing each other at right angles at
50 their centers, and having their ends bent inwardly at right angles to their main or body portions, said bent ends having their lower portions extending into the open end of the tube in contact with the inner walls thereof,
55 parallel to said walls and secured thereto, a tapered deflector having its apex end within the tube, and its enlarged end projecting beyond the mouth of the tube and secured to the body portion of the spider, a cover for
60 the delivery end of the tube, said cover telescoping over the end of the tube and forming a housing for the projecting portion of the spider and deflector, and a closure for the receiving end of the tube, as set forth.

65 In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

ALFRED HOPPER.

THOMAS R. HOPPER.

Witnesses as to the signature of Alfred Hopper:

FRANK F. SIMPSEN,
JOSEPHINE FREER.

Witnesses as to the signature of Thomas R. Hopper:

JOHN G. LUCAS,
JOSEPHINE FREER.