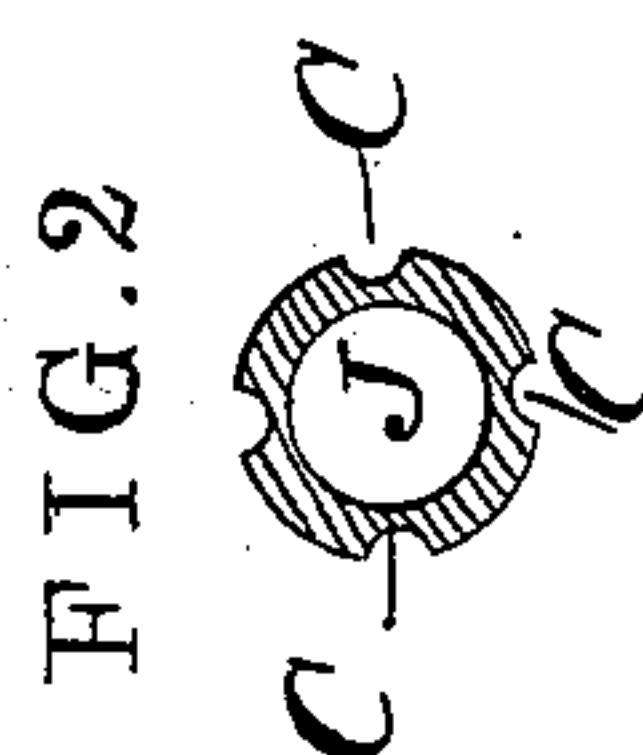
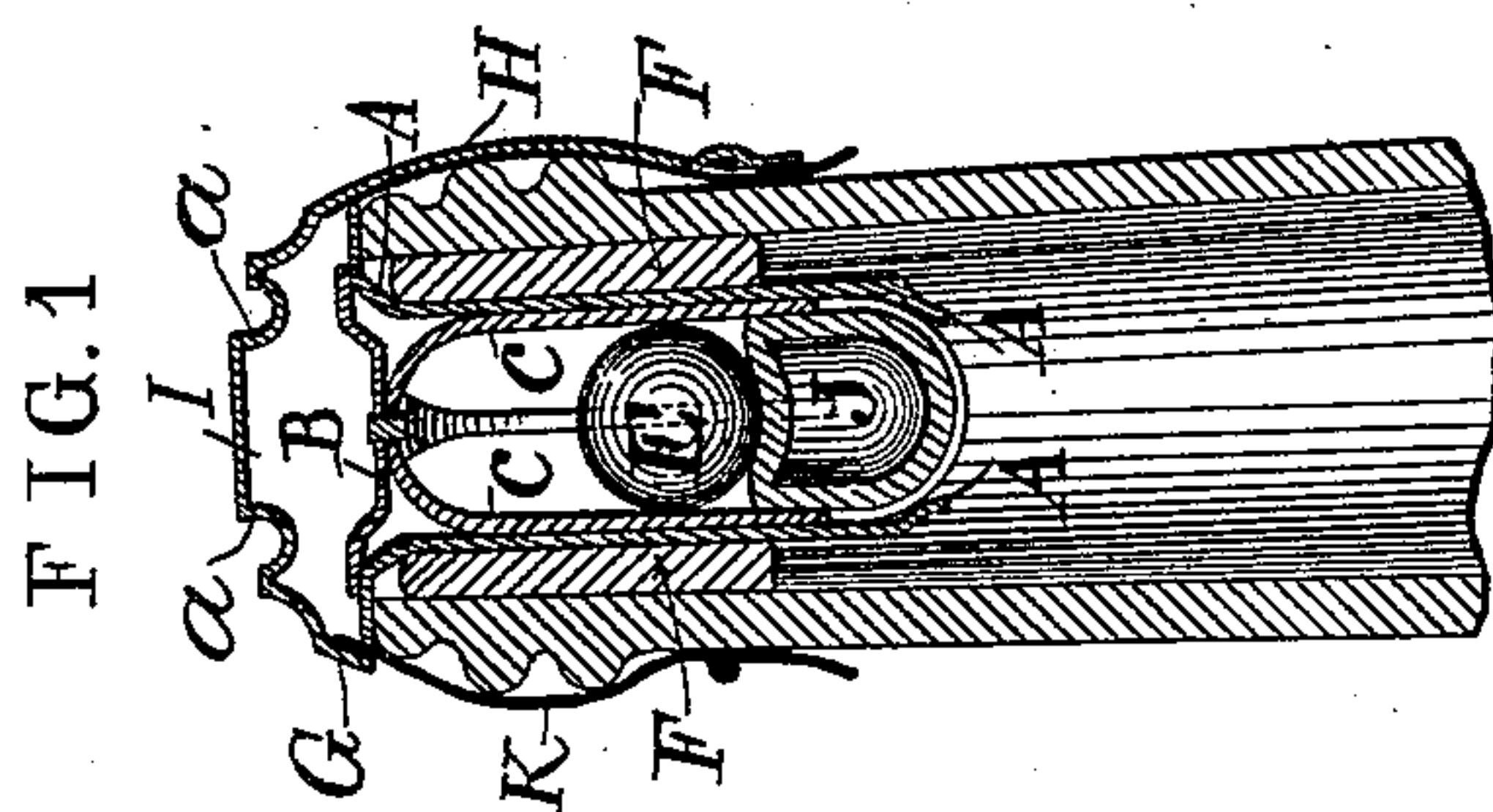
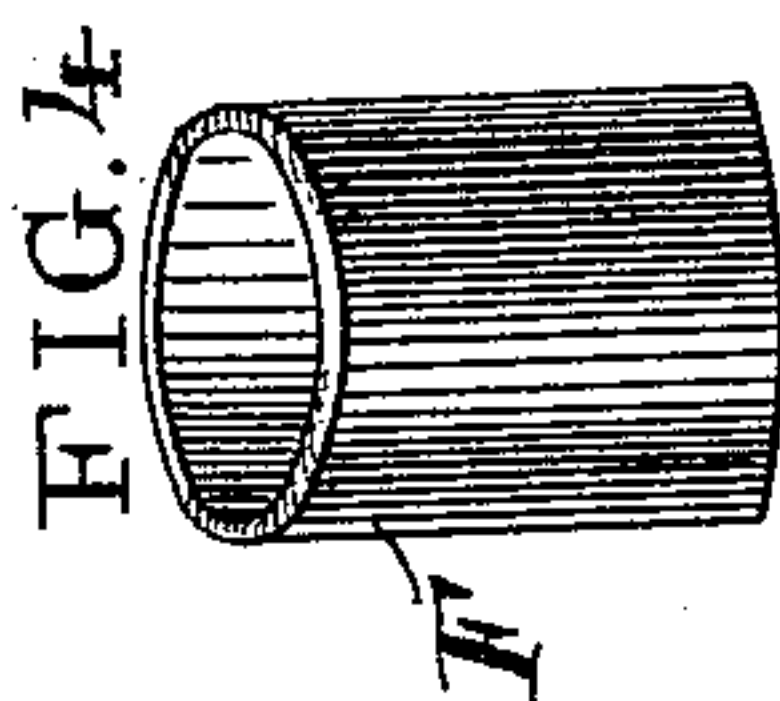
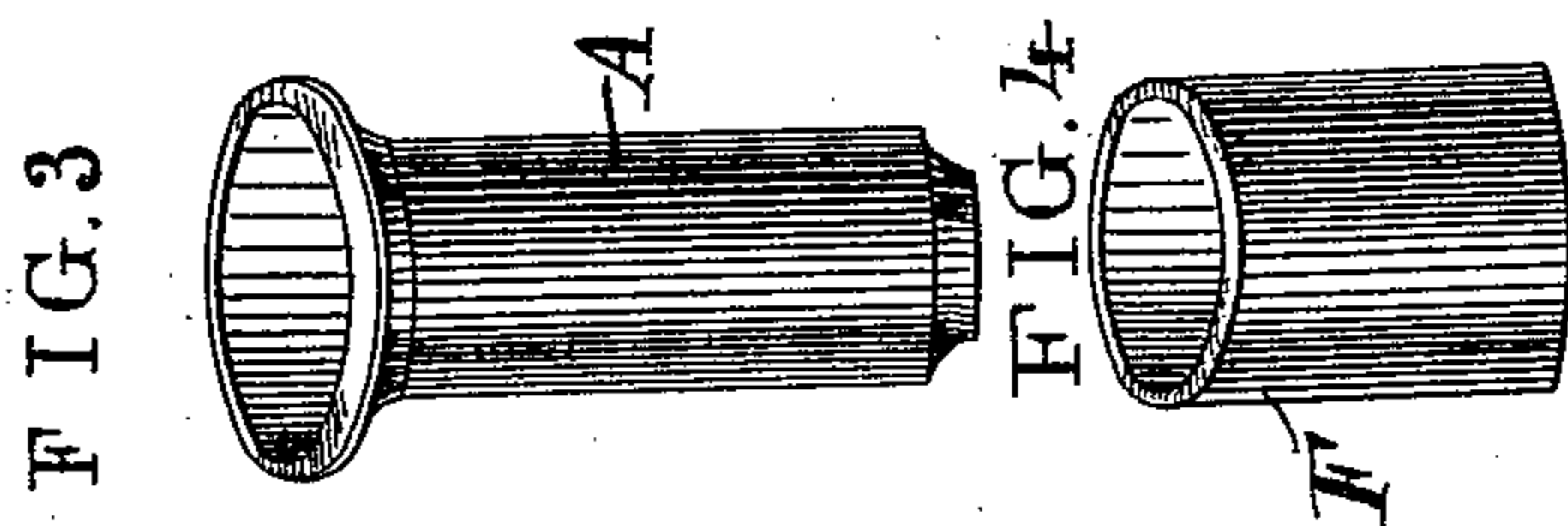
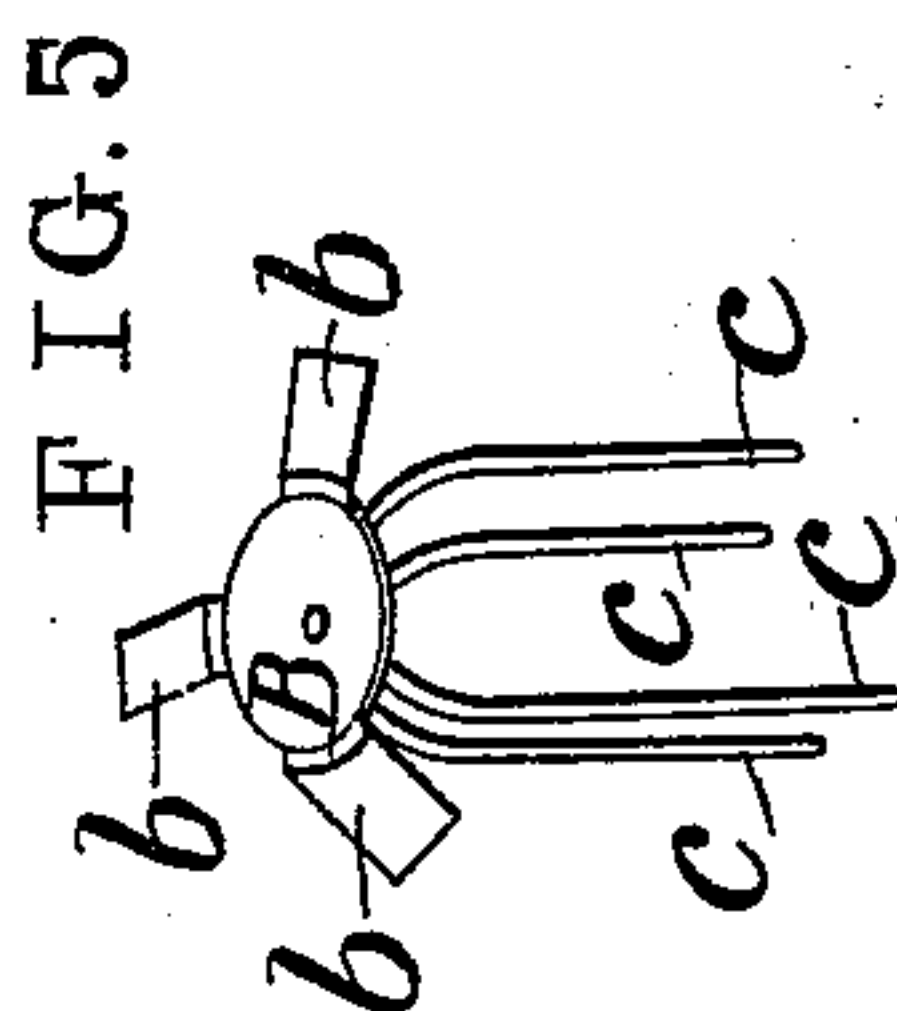
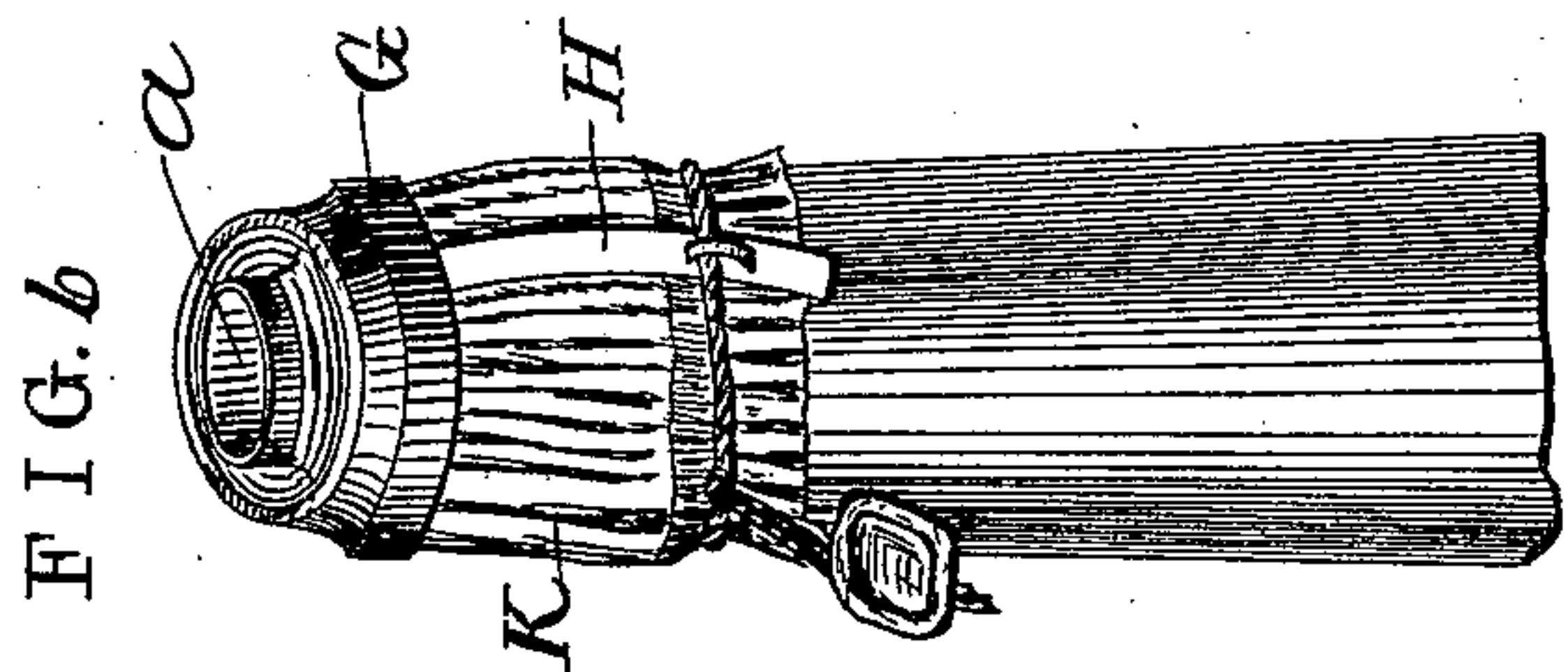


(No Model.)

L. LANDAU.
SAFETY STOPPER FOR BOTTLES.

No. 553,651.

Patented Jan. 28, 1896.



Witnesses
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UNITED STATES PATENT OFFICE.

LÉOPOLD LANDAU, OF PARIS, FRANCE.

SAFETY-STOPPER FOR BOTTLES.

SPECIFICATION forming part of Letters Patent No. 553,651, dated January 28, 1896.

Application filed February 16, 1895. Serial No. 538,643. (No model.)

To all whom it may concern:

Be it known that I, LÉOPOLD LANDAU, a citizen of the Republic of France, residing at 4 Rue Fromentin, Paris, in the Republic of France, have invented certain new and useful Improvements in Safety-Stoppers for Bottles, of which the following is a specification.

This invention relates to improvements in safety-stoppers. It is illustrated in the annexed drawings.

Figure 1 is a vertical section of my safety-stopper placed upon a bottle. Fig. 2 is a transverse section of a detail. Fig. 3 shows the stopper-tube separately. Fig. 4 is a perspective view of a detail. Fig. 5 is a perspective view of the head-piece. Fig. 6 is a perspective view of a bottle covered with my stopper, the cap being removed.

My stopper consists of a tube A made of one piece and having the shape indicated in section in Figs. 1 and 6 and in Fig. 3 and having a valve-seat at its lower end. On top of the tube I place a head-piece B, carrying four (or more or less) arms *c* slightly bent, as shown in Fig. 5. The arms *c* extend toward the bottom of the tube A, so as to prevent oscillation of the floater J. By reason of the manner in which the arms are arranged the heavy ball E rolls upon the floater J when in horizontal position, compelling the same to shut off the opening of the tube A. Before putting the head-piece B in its place I introduce the tube A, the cylinder-floater J ending below in a semisphere. Said cylinder is hollow and made of aluminum or some other very light material and serves as a floater. On top thereof I place the ball E, of metal or some other heavy material. Then I set a cap G over tube A, which cap can carry one or more appendixes H for fixing the same, as will be explained later on. It is also possible to set with the tube A and the cap G a piece of parchment or other tissue K, as indicated by Fig. 1. In that case I can either use the appendixes H or leave them out, as desired, as the tissue or parchment is sufficient to fix the stoppers. The tube A is further surrounded by a casing F, of cork or some other flexible material.

When the bottle is full of liquid, I close it with my stopper just as with an ordinary cork, and in order that it cannot be removed

I fix the same upon the neck by means of a binding of metal or hemp ending with a lead or seal, as in Fig. 6, upon which I have shown the tissue or parchment K and the appendixes H, although, as I have explained before, the tissue or parchment K can be omitted and the stopper can be fixed simply by means of the appendix or the appendixes H. These fasteners or appendixes H can be made of one piece with the cap G, or they can be mounted separately as the parchment. They can be made of metal or other material, and as the tissue or parchment K is set with tube A and the cap G it is easy when the same is used to omit these appendixes and to fix the stopper by a simple binding around the parchment. This binding is made immediately under the ring or shoulder which all bottles carry. When the bottle is filled and closed, as indicated in Fig. 1, it is impossible to extract the contained liquid.

When it is desired to empty the bottle, it will be sufficient to remove the cap I of the cover G, which is very easy, as there has previously been made a small indent *a* all around. If the bottle is inclined, then the floater J and the ball E will roll toward the head-piece B, the liquid can penetrate the tube A and flow out through the opening *a* while passing between the appendixes of the head-piece B. If the bottle is then put again in a vertical position, the weight of the ball E is sufficient to depress the cylinder J, which will completely shut off the opening of the tube A. It must be remarked that the parts of my safety-stopper are such that it is impossible to keep the same open in order to fill the bottle anew after having emptied the same. First, the floater J obstructs the opening of the tube A when the bottle is plunged in whatsoever kind of liquid. Further, it is impossible to introduce a thin rod in the interior of the neck, owing to the grooves of the cap G, and as the stopper is sealed upon the bottle it is impossible to remove the same. Thus it will not be possible to ever fill up a bottle again when empty without breaking the seal.

The system of closure I have just described prevents in an absolute manner the fraudulent filling of a bottle or other vessel after the contents have been extracted.

It can be applied not only for the shutting off of bottles, but also for the closing of all kinds of vessels, the mouth of which has restricted dimensions. I have cited the bottles
5 only as an example, because the invention is more especially designed for them than for other vessels.

As a rule, the tube A will be of aluminum, but I can use all other metals.

10 The floater J must be very light. I generally make it of aluminum. On its walls it carries four little grooves C in which the arms c of the head-piece are located.

I claim—

15 In combination in a bottle stopper, the tube A, the cap G, the head piece B having radial

supporting arms, the depending arms c forming a cylindrical open frame fitting the interior of the tube A and of the same diameter throughout, the float J of cylindrical form 20 having grooves fitted to the depending arms of the open frame and the ball E resting on the float and the full diameter of the open frame, substantially as described.

In testimony whereof I have signed my 25 name to this specification in the presence of two subscribing witnesses.

LÉOPOLD LANDAU.

Witnesses:

GARDET,

A. S. LOUIS.