

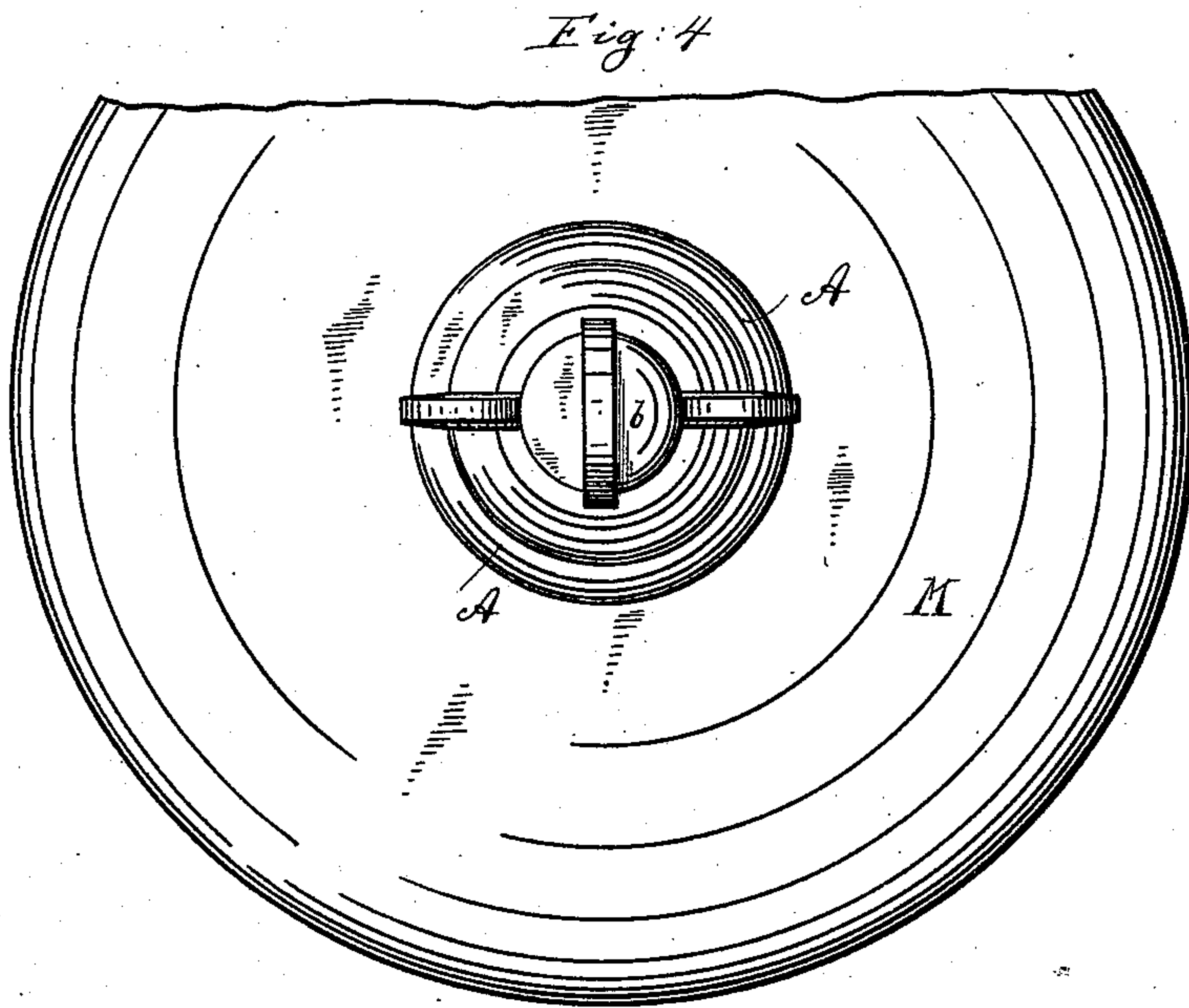
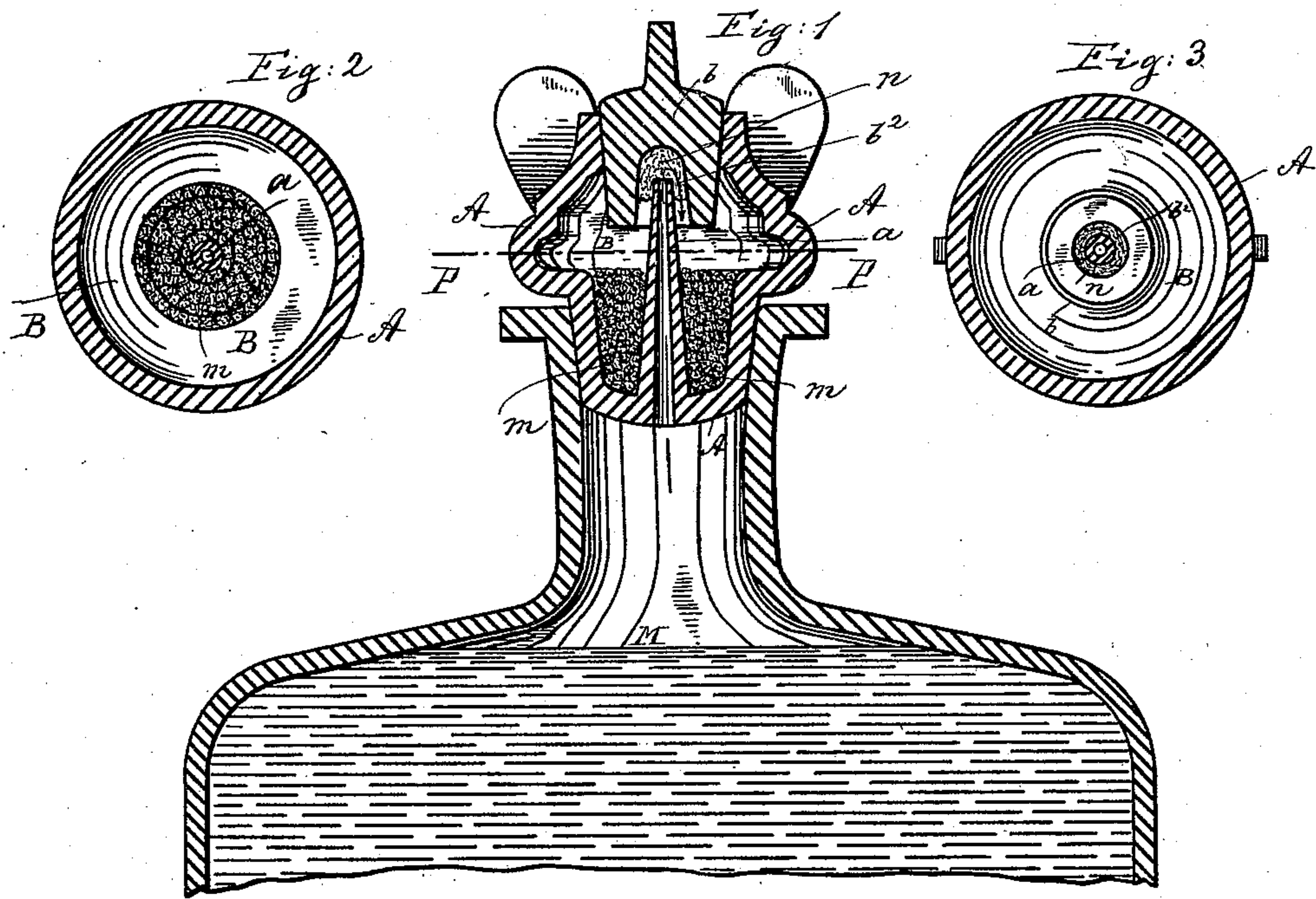
(No Model.)

2 Sheets—Sheet 1.

L. G. A. SCHUBBERT.  
HYGROSCOPIC STOPPER.

No. 532,592.

Patented Jan. 15, 1895.



Witnesses:  
Wm. Schuch.  
A. Jonghman.

Inventor:  
L. G. A. Schubbert  
by his attorneys  
Roeder & Brien



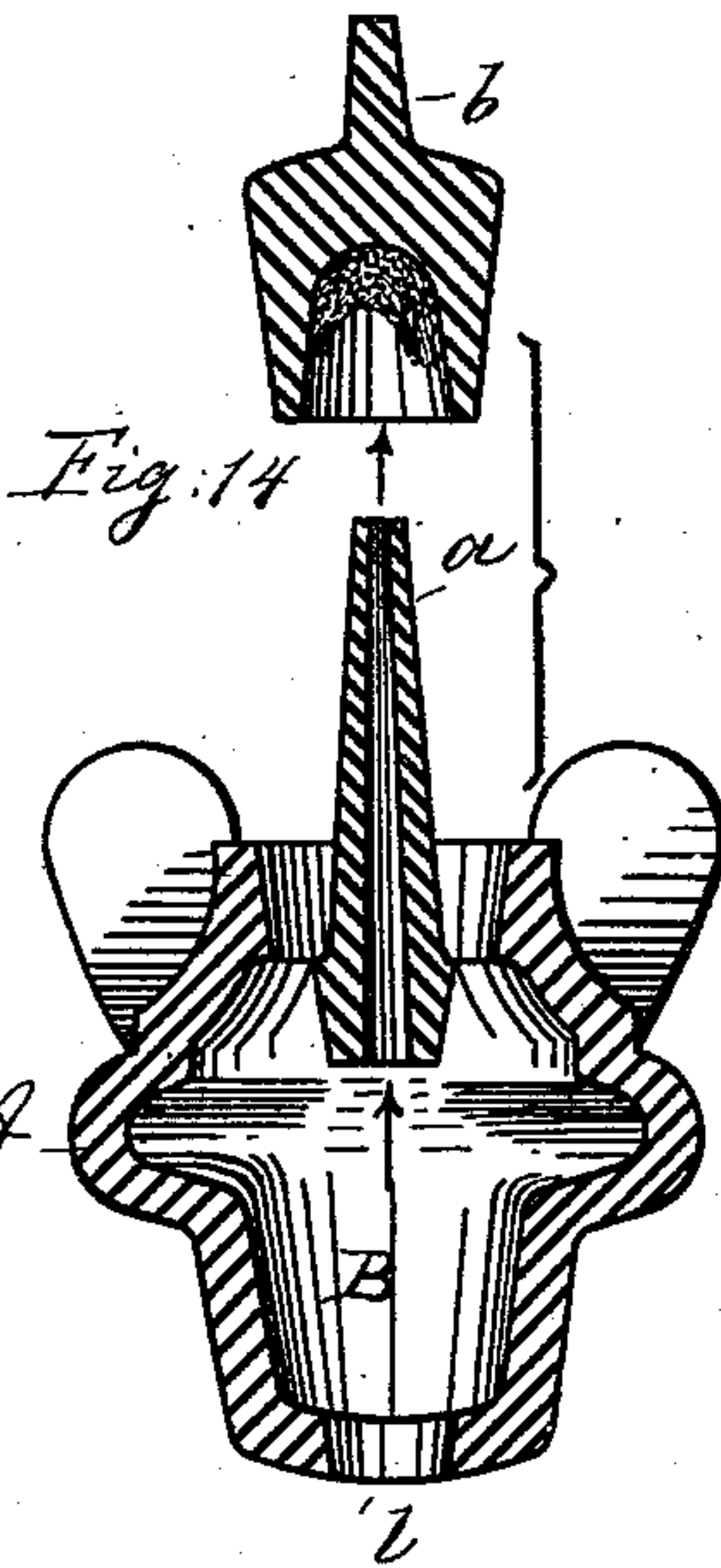
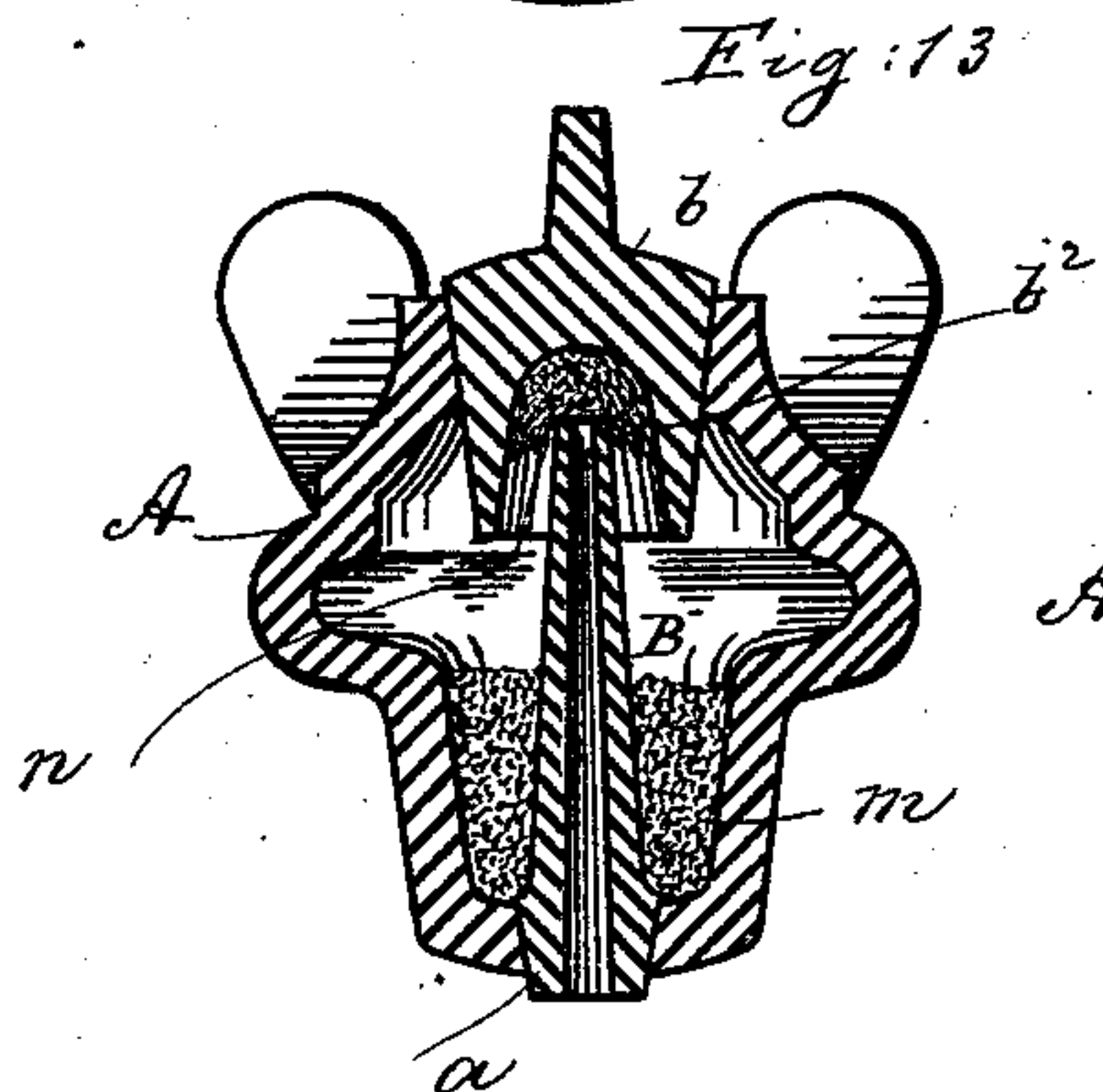
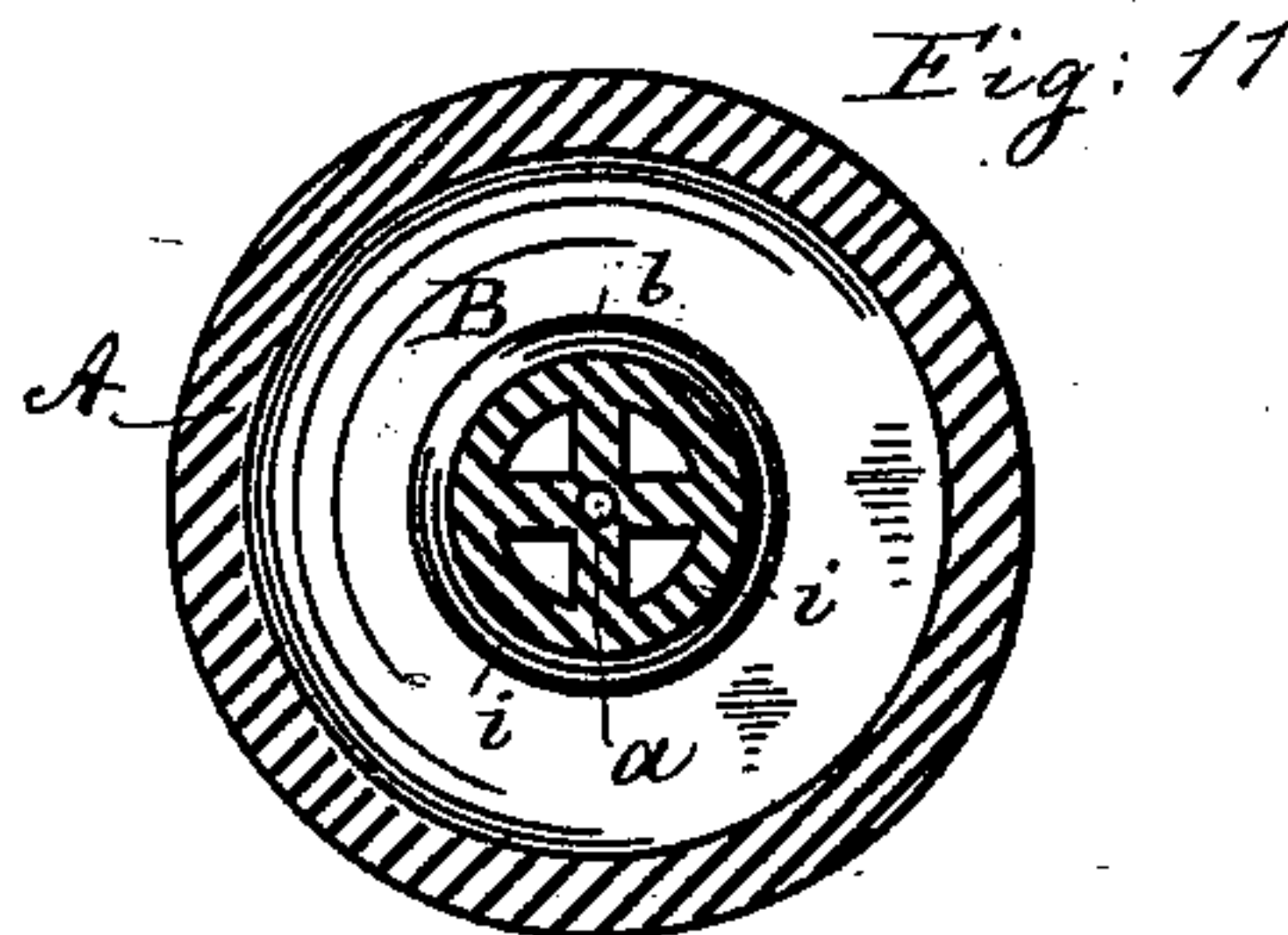
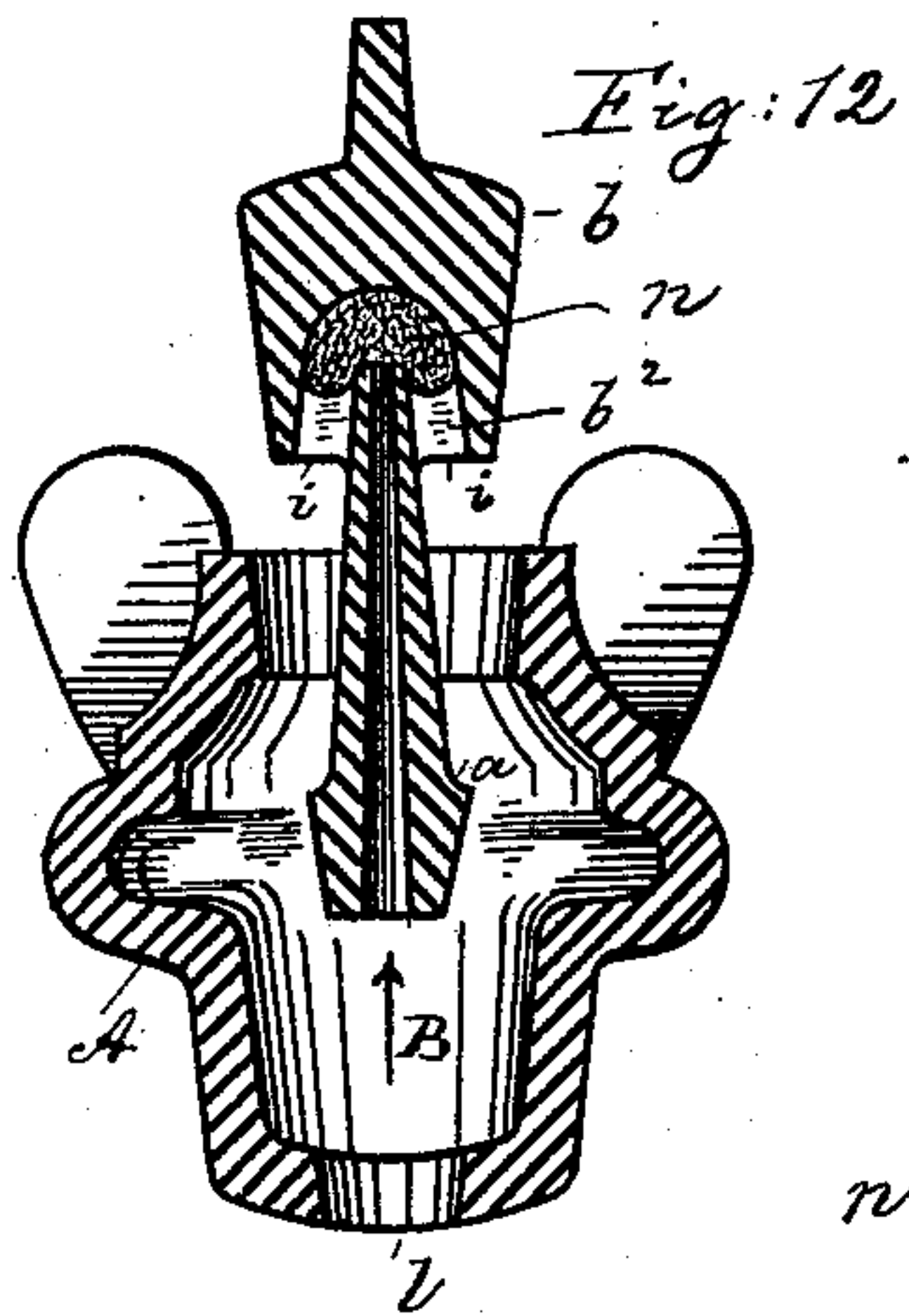
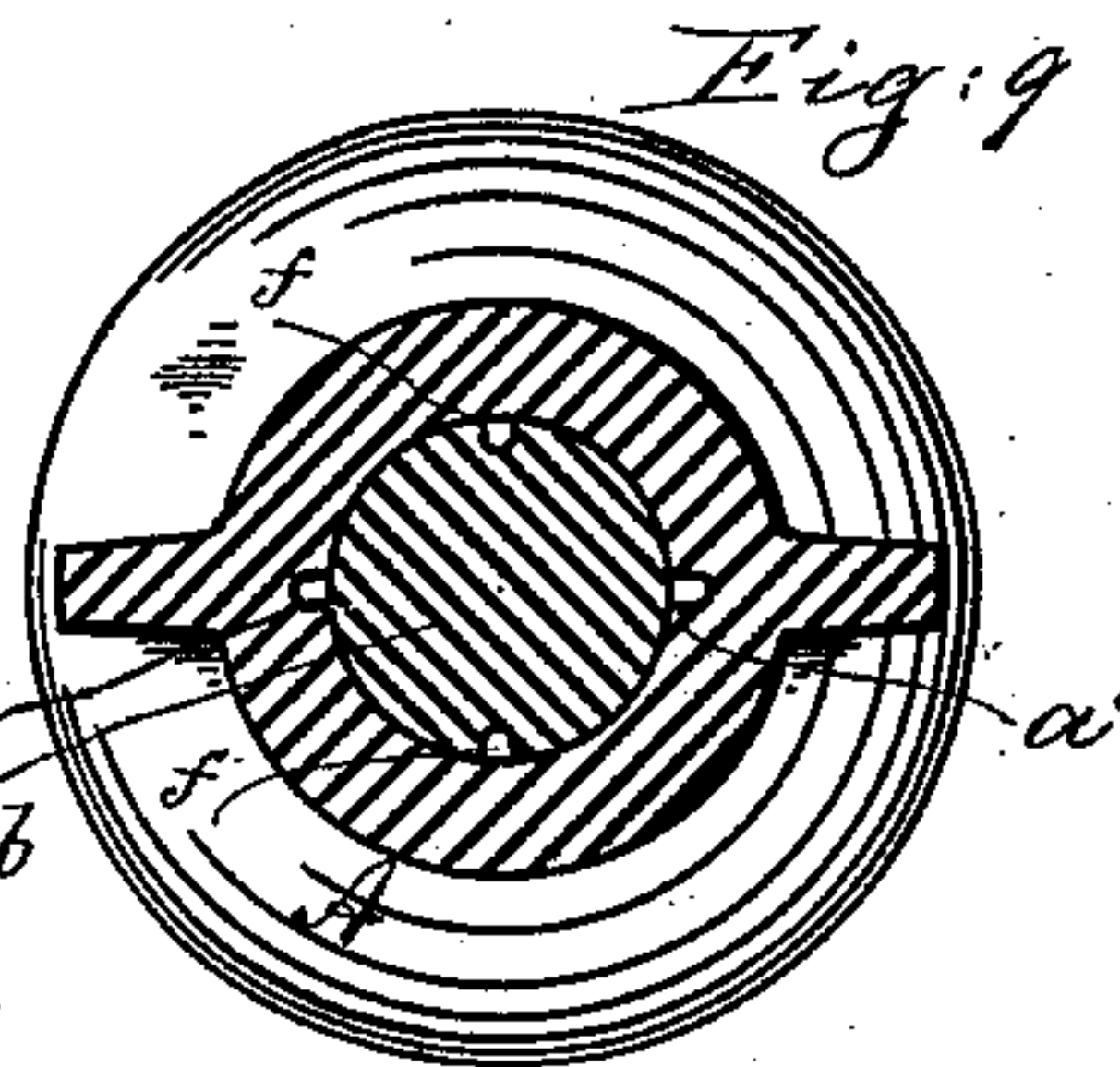
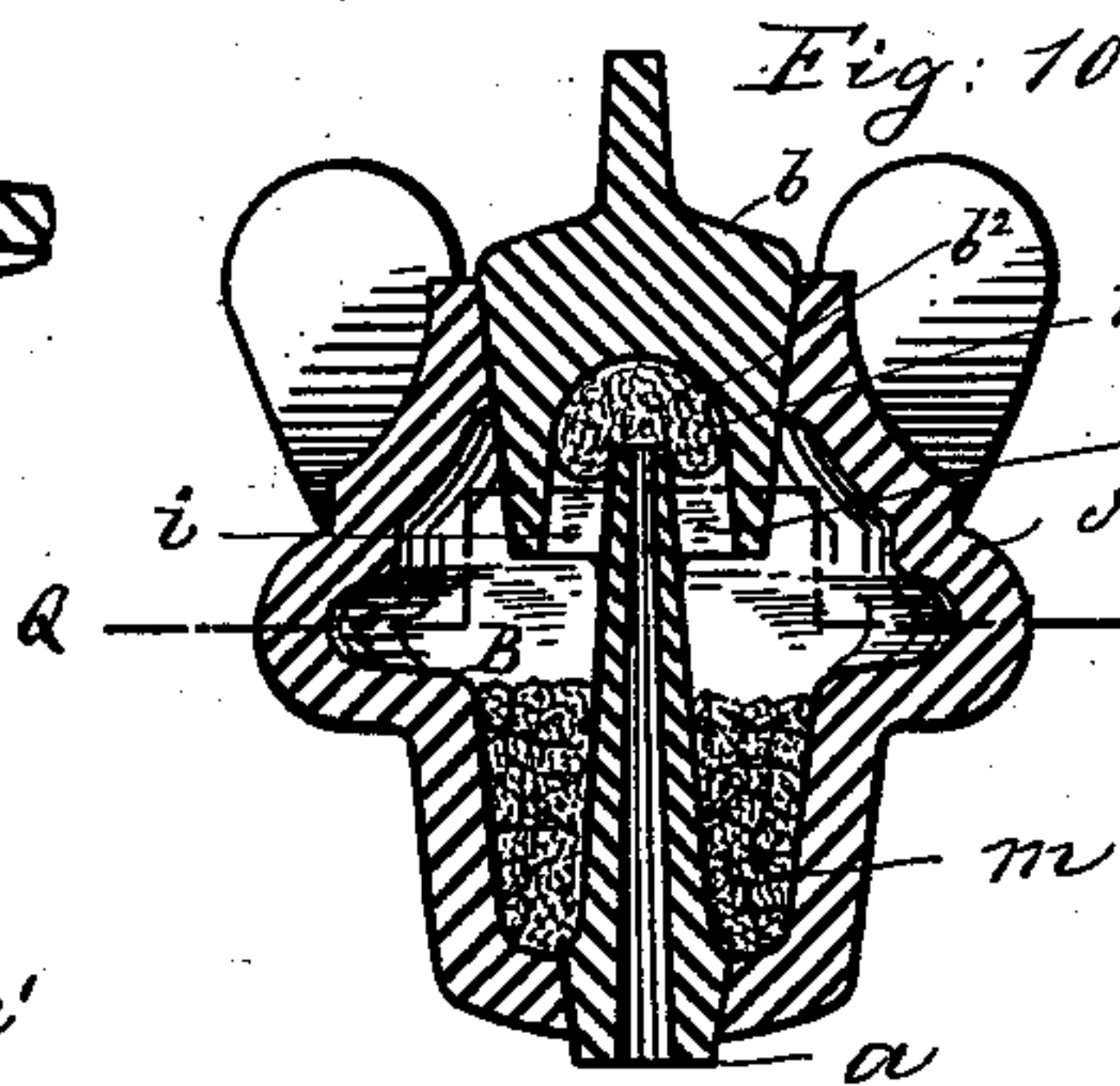
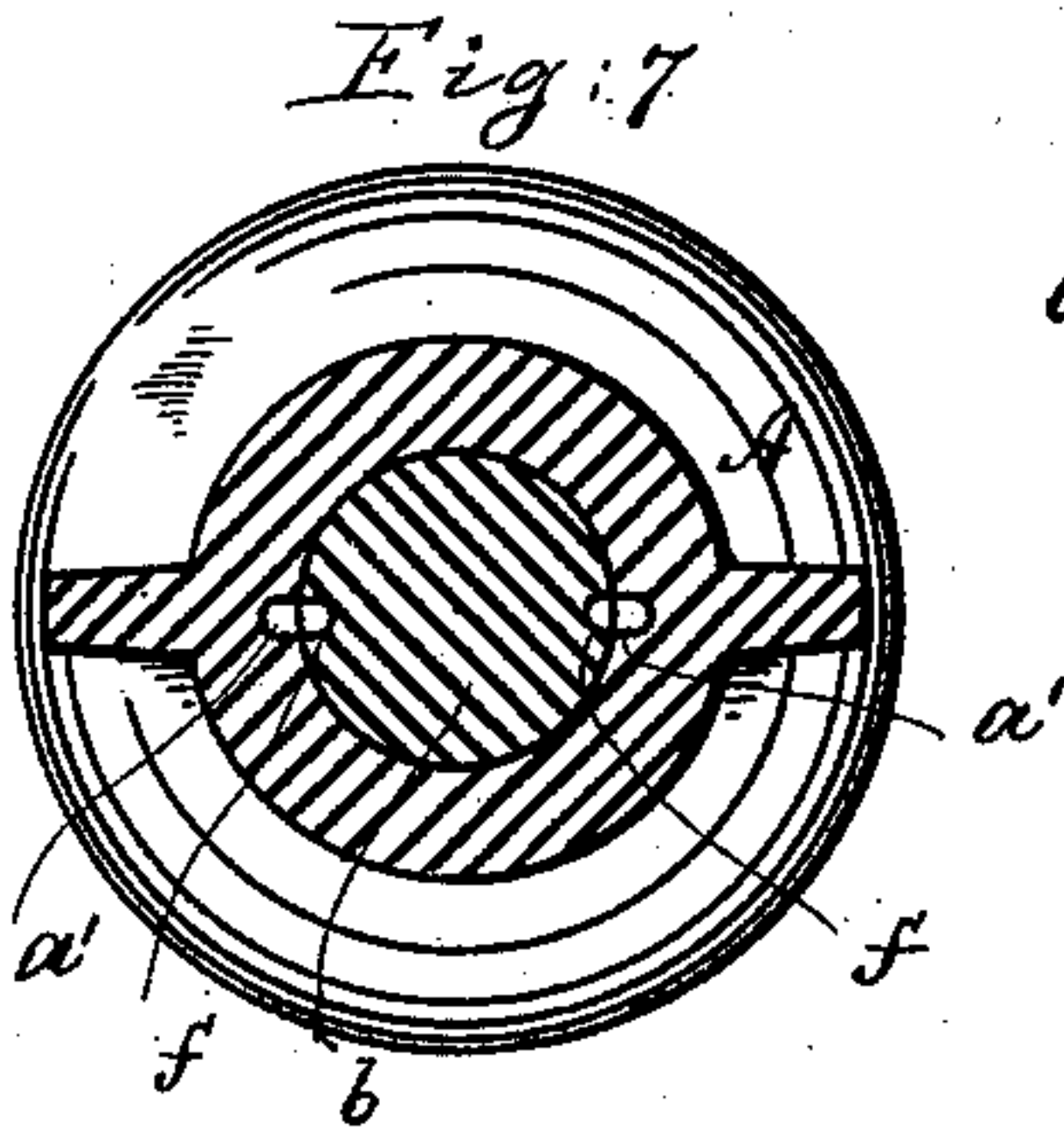
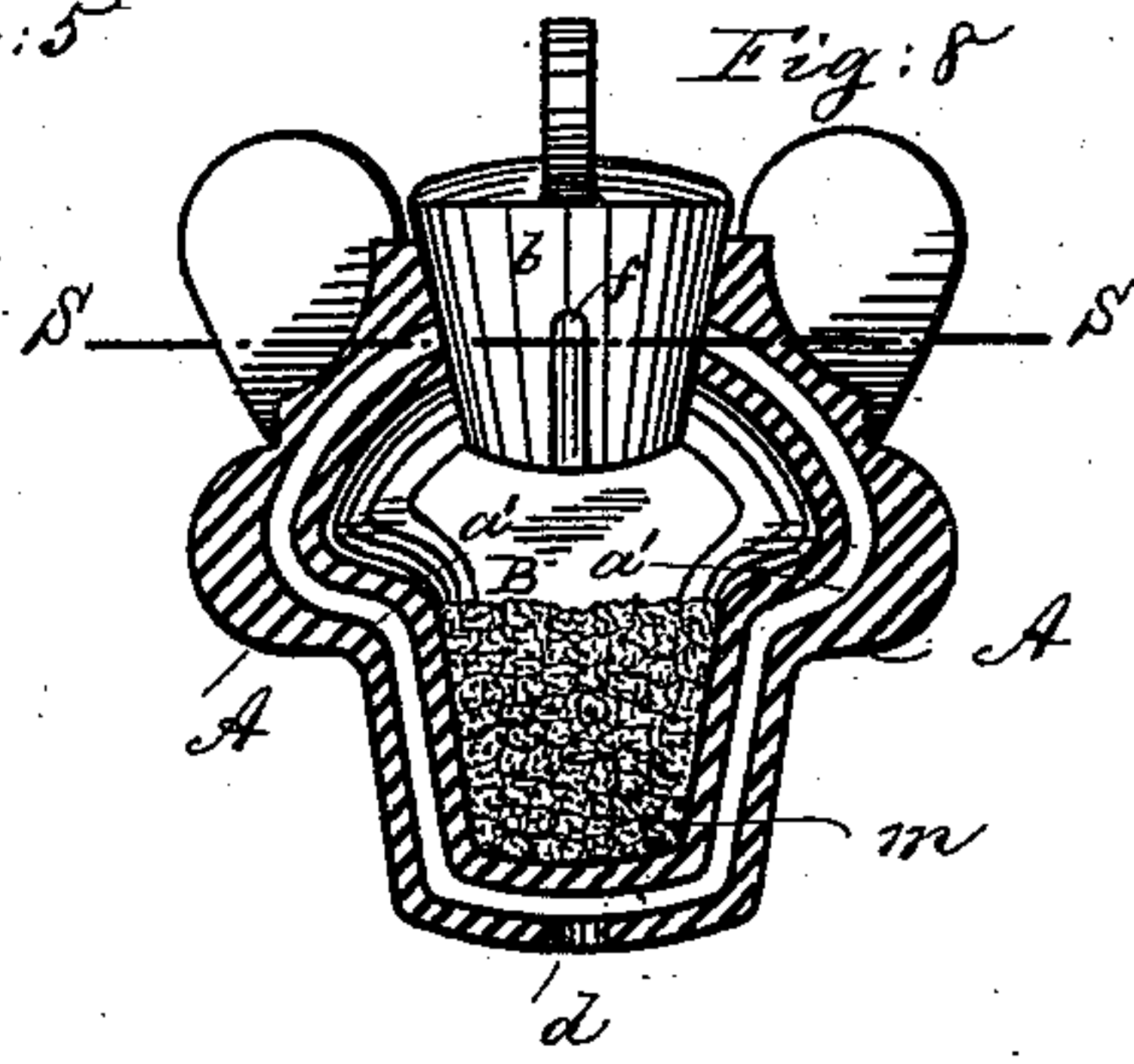
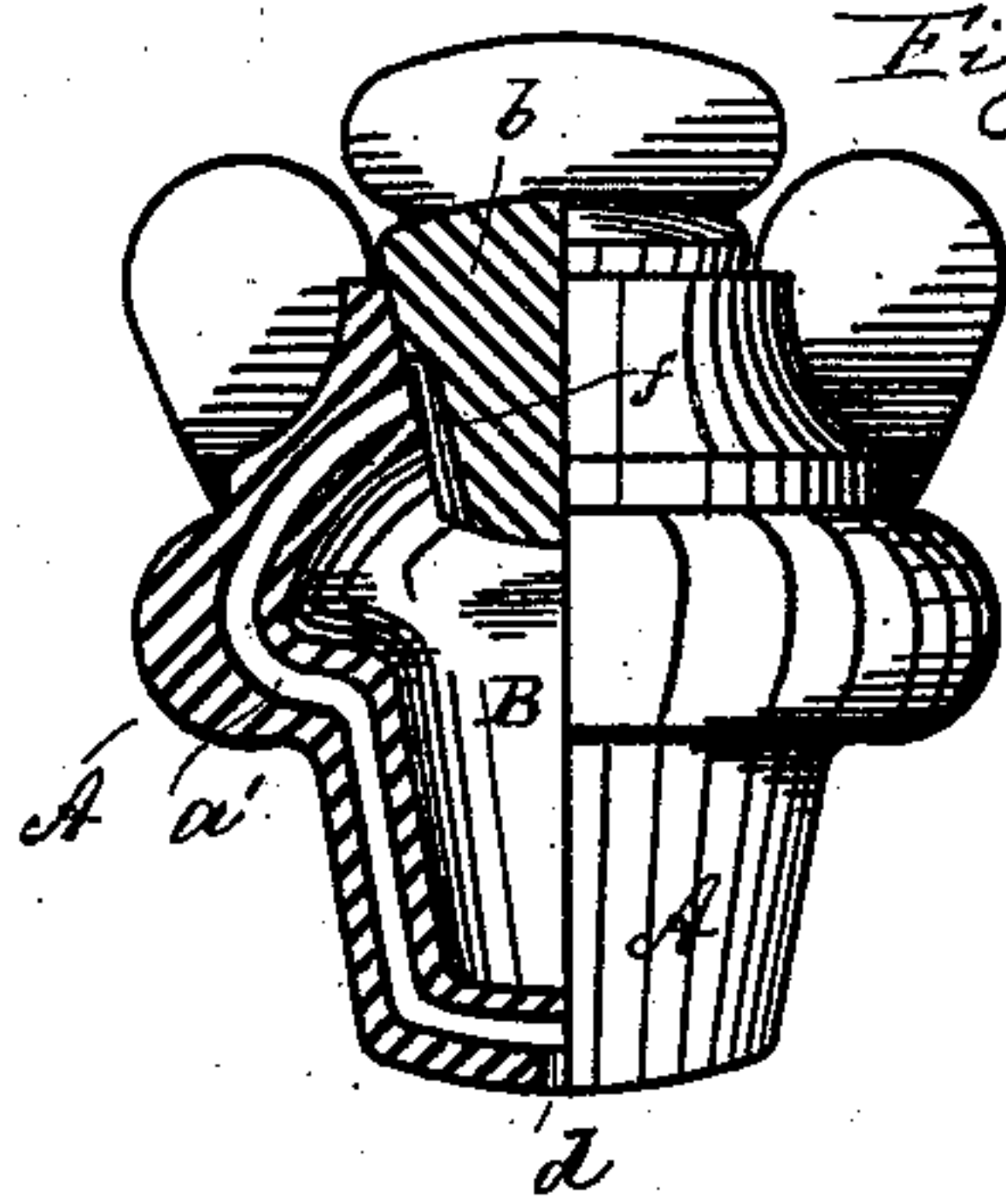
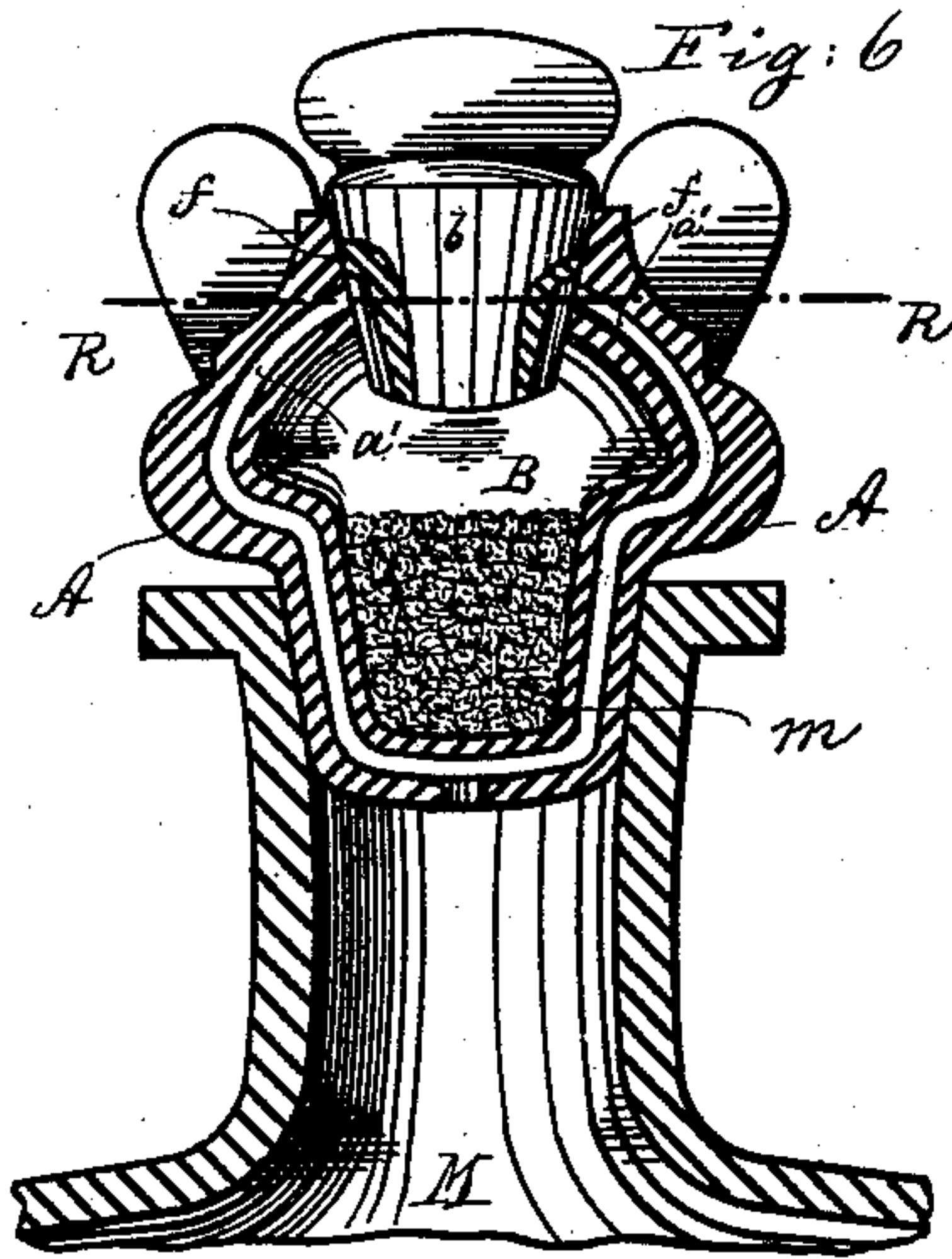
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Roeder & Briesen



# UNITED STATES PATENT OFFICE.

LUDWIG GUSTAV ADOLF SCHUBBERT, OF HOHN, NEAR RENDSBURG,  
GERMANY.

## HYGROSCOPIC STOPPER.

SPECIFICATION forming part of Letters Patent No. 532,592, dated January 15, 1895.

Application filed November 16, 1892. Serial No. 452,133. (No model.)

*To all whom it may concern:*

Be it known that I, LUDWIG GUSTAV ADOLF SCHUBBERT, a subject of the German Emperor, and a resident of Hohn, near Rendsburg, Germany, have invented an Improved Hygroscopic Stopper, of which the following is a specification.

This invention relates to a bottle stopper which will absorb and accumulate objectionable moisture from the contents of the bottle so that the contents will remain dry.

In the accompanying drawings, Figure 1 is a vertical longitudinal section of my improved bottle stopper; Fig. 2, a cross section on line P, P, Fig. 1, looking down; Fig. 3, a similar section looking up; Fig. 4, a top view of the stopper; Fig. 5, a vertical section partly in side view of a modification; Fig. 6, a vertical section thereof showing the ducts open; Fig. 7, a cross section on line R, R, Fig. 6; Fig. 8, a vertical section with the ducts closed; Fig. 9, a cross section on line S, S, Fig. 8; Fig. 10, a vertical section of a further modification; Fig. 11, a cross section on line Q, Q, Fig. 10; Fig. 12, a section similar to Fig. 10, with the plug raised; Fig. 13, a vertical section of a further modification, and Fig. 14 a similar section with the plug raised.

In Figs. 1 to 4 the letter M, represents a bottle or other receptacle into the neck of which is fitted a stopper A. This stopper is hollow to form a chamber B, for the reception of a suitable moisture absorbing material *m*, such as chloride of calcium, but of course, any other absorbent, either liquid or solid may be substituted. The chamber B is closed by a plug *b*, seated within the neck of the stopper A. With the chamber B, there communicates a tube or duct *a*, opening at its lower end into bottle M, and entering with its upper end a cavity *b*<sup>2</sup>, of plug *b*. This cavity may be filled with a packing such as wadding *n*, to prevent a return of moisture. The moist-

ure ascends from bottle M, through tube *a*, and packing *n*, and enters chamber B, to be absorbed by the absorbent *m*, as will be readily understood.

In Figs. 5 to 9 the central channel *a*, is replaced by a pair of circumferential channels or ducts *a'*, communicating at their lower end by a perforation *d*, with bottle M. The plug *b*, is provided with two grooves *f*, placed diametrically opposite each other. When the plug *b*, is so inserted that the channels *a'*, register with the grooves *f*, (Fig. 6,) the contents of the bottle communicate with the interior of the stopper; but if the grooves *f*, are out of line with the channels *a'*, the communication between bottle and interior of stopper is interrupted, so that no absorption takes place.

In Figs. 10 to 12, the tube *a*, is secured to the plug *b*, in lieu of being secured to the stopper A. Here the cavity *b*<sup>2</sup>, is partially closed by a perforated diaphragm *i*, and the tube *a*, is attached to this diaphragm and projects through a perforation *l*, of stopper A.

In Figs. 13 and 14 the perforated diaphragm *i*, is omitted and the tube *a*, is detached from the plug and also from the stopper, so that all three pieces are separable from each other.

What I claim is—

A bottle stopper having a chamber, an absorbent within the chamber, a tube that communicates with the bottle and opens into the interior of the stopper, and with a plug that engages the stopper above the mouth of the tube, substantially as specified.

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

LUDWIG GUSTAV ADOLF SCHUBBERT.

Witnesses:

CHRISTIAN LUDWIG HEIT,  
HENNING VOLLERT.