(No Model.)

A. LUEDEMANN.

BOTTLE STOPPER.

No. 337,003. Patented Mar. 2, 1886.

Fig: 1.

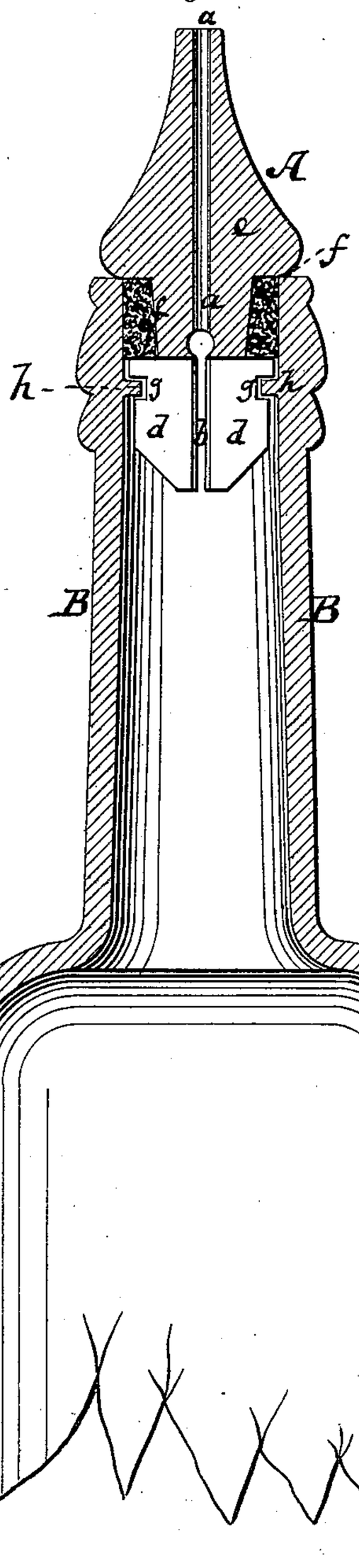


Fig: 3.

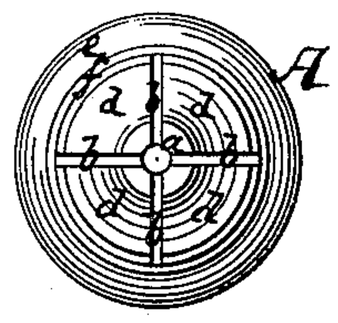
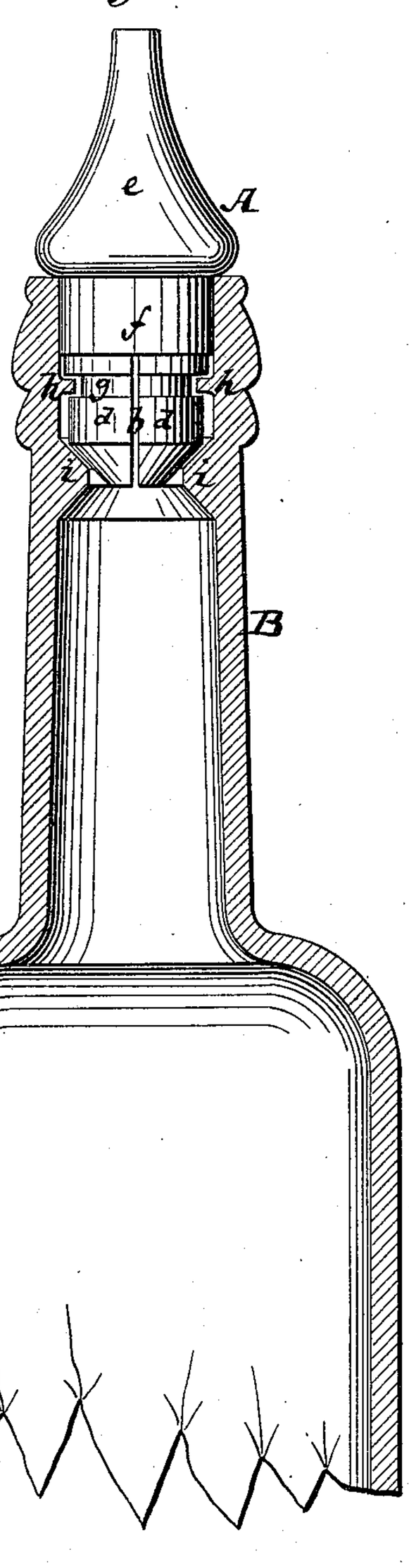


Fig: 2.



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ALBERT LUEDEMANN, OF NEW YORK, N. Y.

BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 337,003, dated March 2, 1886.

Application filed December 7, 1885 Serial No. 184,955. (No model.)

To all whom it may concern:

Be it known that I, ALBERT LUEDEMANN, of the city, county, and State of New York, have invented an Improvement in Bottle-Stoppers, of which the following is a complete specification, reference being had to the accompanying drawings, in which—

Figure 1 is a central section of my improved bottle-stopper. Fig. 2 is a side view of the same, and Fig. 3 a bottom view of the same.

This invention has for its object to produce a stopper that cannot be removed from its place in the mouth of a bottle. The object is to prevent the refilling of bottles containing proprietary mixtures—such as sauces, perfumes, medicinal preparations, and the like—by unauthorized persons for fraudulent or other purposes. The manufacturers of such articles are in the habit of putting their names or the names of their products on the bottles, and the public is therefore liable to be deceived into a belief that the contents of such bottles are genuine, when, in fact, they may be and often are counterfeited.

My invention consists in the main in making a tubular stopper elastic at the lower part and grooved around the circumference of its flexible portion, so that it will be easy to force it into a bottle having an inner shoulder, which enters said groove, but impossible to remove it therefrom.

In the drawings the letter A represents a tubular bottle-stopper—that is, one having a central longitudinal passage, *a*, through which the liquid contents of the bottle B may be ejected. This stopper is made of wood or equivalent substance. The lower portion of this stopper is by upright incisions *b b* cut into four (more or less) sections, *d d*, which are integral at their upper ends with the uncut upper part, *e*, of the stopper. By the incisions *b b* the lower part of the stopper is made elastic, so that the sections *d d* can be crowded somewhat nearer together or forced a little farther apart than is their normal condition. The width of the incisions *b b* will determine the extent to which the sections *d d* can be crowded toward one another. The stopper A, above the sections *d d*, is, by preference, embraced by an annulus, *f*, of cork or the like; but this is not an essential feature of my invention. The lower elastic portion of the stopper—namely, the part consisting of the movable sections *d d*—is made with a peripheral groove, *g*. The lower ends of the sections are preferably made tapering, as shown.

The bottle B, in which the stopper is to be used, has an inwardly-projecting shoulder or rib, *h*, which is adapted and intended to fit the groove *g* of the stopper. There may be in the bottle another shoulder, *i*, to come under the stopper, as in Fig. 2, but this is not essential.

I have stated that the lower part of the stopper is elastic. By this I mean that it should be elastic in a transverse direction only, but not in a longitudinal direction. On the contrary, in the direction of its length, the stopper should be substantially rigid or inflexible, so that it may not, by tilting and partial elongation on one side and partial contraction on the other, be taken out of a bottle.

The upper part, *e*, of the stopper can be of suitable construction. It may or may not be made in accordance with Letters Patent No. 329,920. It may or may not contain an inwardly-closing valve, such as is used on many tubular stoppers.

The stopper, after the bottle B is filled, is driven into the same. As the tapering lower ends of the sections *d d* strike the rib or shoulder *h* they are by such shoulder crowded together, and thus the said shoulder is passed until the groove *g* arrives in alignment therewith.

Instead of tapering the lower ends of the sections *d d*, the upper edge or the face of the shoulder may be inclined. The elasticity of the stopper now crowds the sections apart and locks the shoulder *h* in the groove *g*, as in Fig. 1. The stopper can now be neither moved nor forced out or in. The contents of the bottle, however, can be squirted out through the stopper in the ordinary way. The moisture of the contents, when it permeates the fibrous stopper, will make the sections *d d* expand tightly against the walls of the bottle, and hold it the more firmly.

When the bottle has been emptied through this stopper, it cannot practically be refilled, because the passage *a* in the stopper is too small for that purpose, and because no provis-

ion exists for the escape of air. If a valve is used on the stopper—such as the well-known ball-valve—the filling of the bottle through the stopper will be absolutely impossible; hence any one desiring to use the bottle again will be unable to do so in such a manner as to make the same appear to have been filled and put up by the party who originally had the same filled and put up.

I desire it understood that, in my opinion, a groove in the bottle and rib on the stopper would be equivalent to the rib *h* and groove *g*.

I do not claim a solid stopper having incisions in its lower part, nor a tubular stopper having springs attached to it for holding it in a bottle. The springs are apt to contaminate the contents of the bottle.

I claim—

1. The bottle-stopper A, having longitudinal central passage, *a*, and upright incisions *b b* in its body, which form of the body the lower sections, *d d*, which are laterally movable, and a passage between said sections in alignment with the bore *a*, as set forth.

2. The combination of the tubular stopper A, having in the lower part of its body upright incisions *b b*, that form the lower laterally-movable sections, *d d*, and groove *g*, with the bottle B, having inwardly-projecting shoulder *h*, as set forth.

ALBERT LUEDEMANN.

Witnesses:
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