N. FRITZNER.

Bottle Stopper.

No. 229,815. Patented July 13, 1880.

Fig. 1.

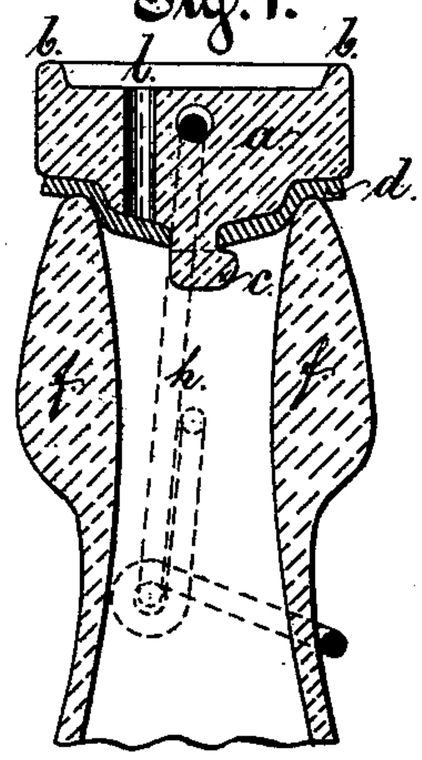

Fig. 4.

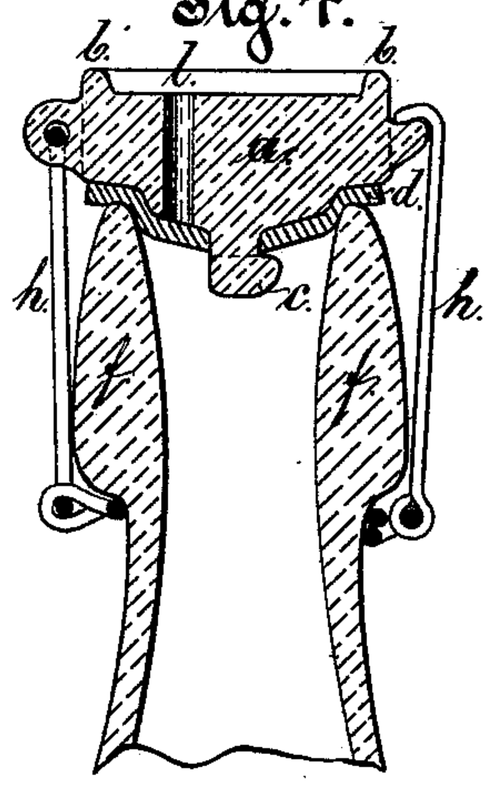

Fig. 2.

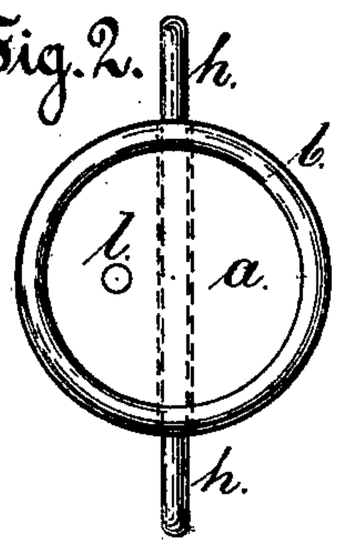

Fig. 5.

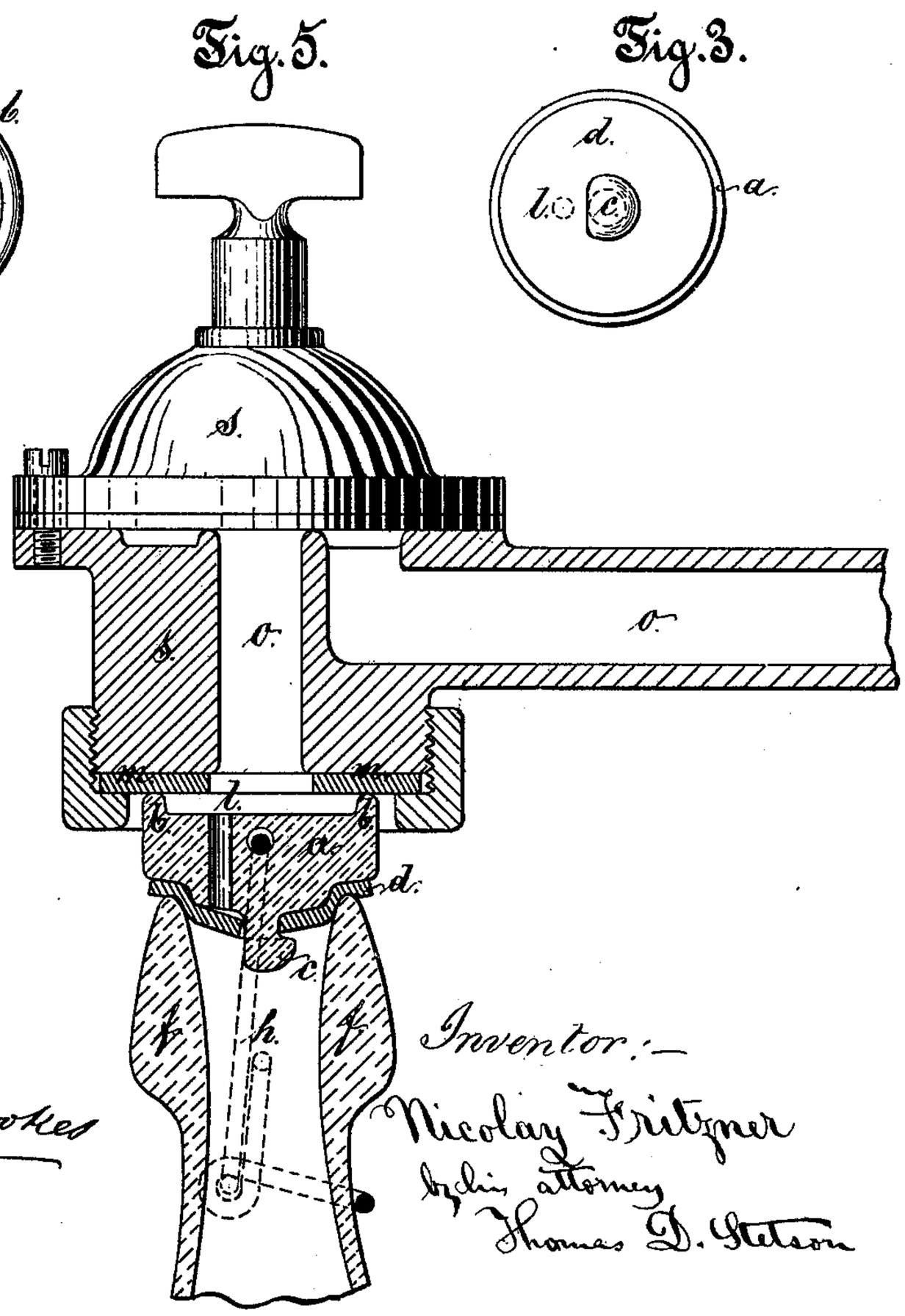

Fig. 3.

Witnesses:—

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UNITED STATES PATENT OFFICE.

NICOLAY FRITZNER, OF BERLIN, PRUSSIA, GERMANY.

BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 229,815, dated July 13, 1880.

Application filed January 22, 1880.

To all whom it may concern:

Be it known that I, NICOLAY FRITZNER, of the city of Berlin, in the Kingdom of Prussia and German Empire, have invented a new and useful Stopper for Bottling Effervescent Liquids, the construction of which and the manner of using it are fully described and set forth in the following specification.

The invention relates to that class of mechanical bottle-stoppers the stopper proper of which is forced tight to the mouth-piece of the bottle by toggle-levers or other mechanical devices, an elastic rubber ring being interposed between the stopper and the bottle, and which are used on bottles containing effervescent or aerated fluids; and the object of the invention is to furnish a stopper which will allow the filling of the bottle with such effervescent fluids as exert a great expansive pressure without removing the stopper from the opening of the bottle and with much ease and promptness.

In the accompanying drawings, in which similar letters of reference indicate corresponding parts, Figure 1 shows an improved stopper applied to a bottle by toggle-levers pivoted in the glass of the bottle mouth-piece. Fig. 2 is a top view of this stopper. Fig. 3 is a view of it from below. Fig. 4 is a similar stopper applied to the bottle by a lever device constructed in another manner than that shown in Fig. 1. Fig. 5 shows a bottle furnished with improved stopper at the moment when it is filled with the effervescent fluid by means of the usual cock, which is altered a little to suit the purpose.

Heretofore it was necessary, when a bottle furnished with a mechanical stoppering device the stopper proper of which was not provided with my improvement should be filled with an effervescent fluid, to bring the open bottle under the filling-cock, and to permit the escape of the atmospheric air from the bottle by employing an auxiliary escape-cock provided on the filling-cock, as can be seen in any soda-water-bottling establishment. When filled, the bottle is removed from under the filling-cock, and the stopper quickly adjusted and closed. These manipulations are difficult to perform when the pressure in the liquids is but as high as two atmospheres; but a squirting of the liquid, and therefore a great loss of the pressure and of material, is inevitable when the pressure of the liquid is over two atmospheres..

The body of the stopper is formed of glass, metal, porcelain, or other suitable material, and is shown at *a* in the drawings.

f is the bottle into the mouth of which the stopper is to be placed.

The stopper is held in place by any desired form of spring, as shown at *h*.

The bottom of the stopper is provided with a projection or button, *c*, over which the elastic bottom *d* is stretched. The button *c* has one plane side, while the other has an end flange or extension, under which the rubber plate *d* is placed, and by which it is prevented from falling from the stopper *a* when released from the mouth of the bottle.

The rubber plate *d* has a hole in its center to allow it to be stretched over the button *c*. On the plane side of the button the body *a* is provided with a hole, *l*, through which the liquid flows, and, pushing aside the rubber plate, passes down into the bottle, the plate *d* readily giving way to the liquid at this point, since the side of the button is plane and presents no obstruction. This entrance into the bottle will be continued as long as the pressure from above is greater than that caused by the gases of the effervescent liquid; but when a balance of pressure is found the flow will stop. This may be remedied and the flow caused to continue by releasing the stopper and allowing the gases to escape around the sides, and the bottle may thus be completely filled.

The body of the stopper is provided with a circular rim, *b*, on top, around the outer edge.

When it is desired to fill a bottle thus constructed the filling-cock S is employed, as shown in Fig. 5. This cock has no escape except through the hole *l* into the bottle It is provided underneath with a rubber plate or cushion, *m*, which rests upon the rim *b*, forming a tight joint. The cock has the canals *o*, which lead from a reservoir into the bottle. It is placed with its rubber plate *m* upon the rim *b* of the stopper, and the filling can then begin.

What I claim is—

The bottle-stopper body *a*, having an outside circular rim, *b*, on top, and a button, *c*, below, having one plane side, and a hole or opening, *l*, entering the bottle near the plane side of the button, in combination with the rubber plate *d*, opened near its center to pass around the button, and with suitable mechanism for holding the stopper in place, substantially as specified.

This specification signed by me this 8th day of December, 1879.

NICOLAY FRITZNER.

Witnesses:

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BERTHOLD ROI.