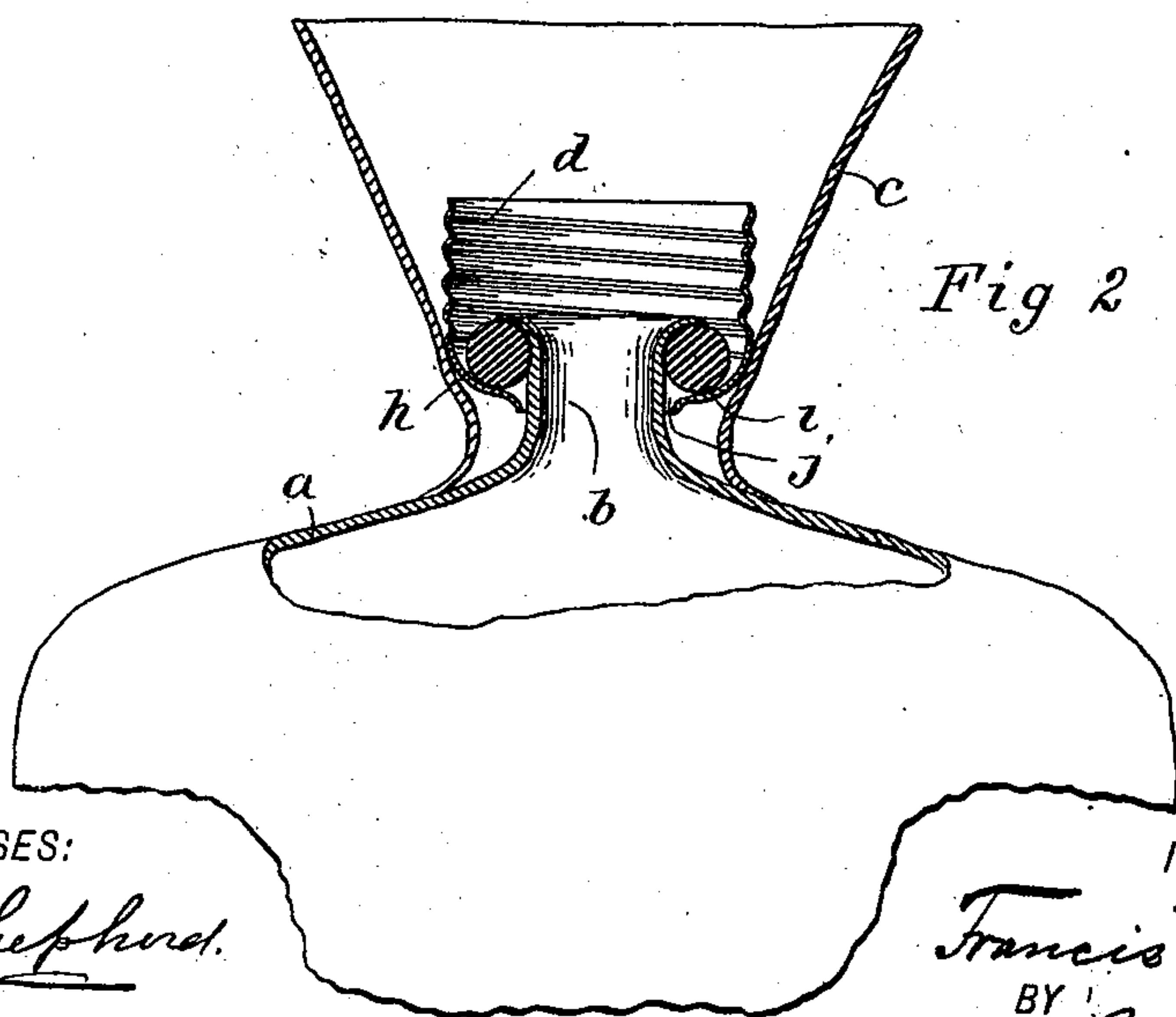
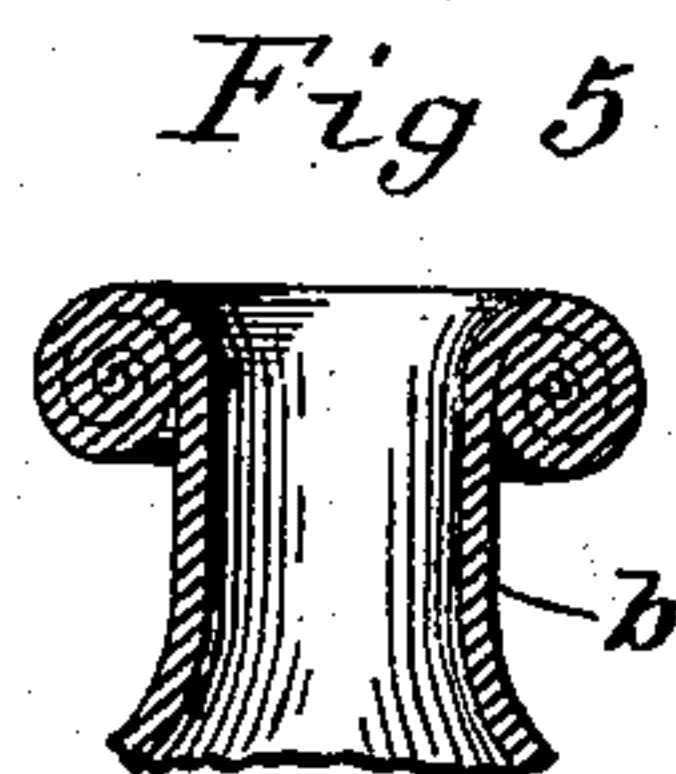
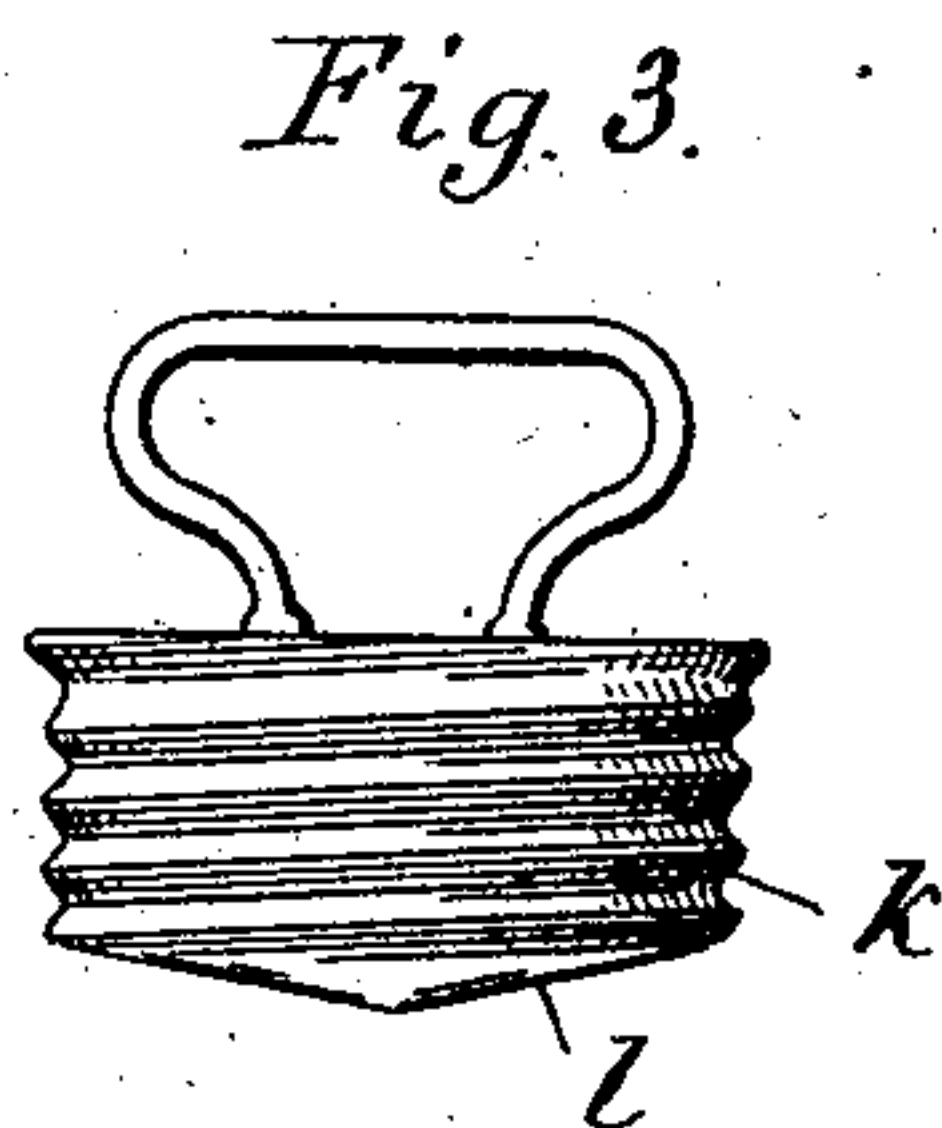
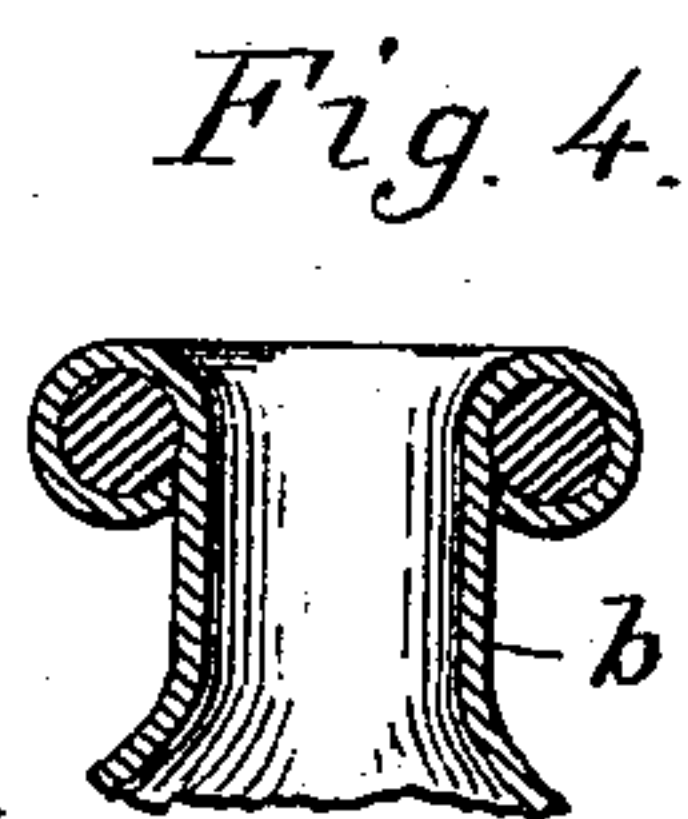
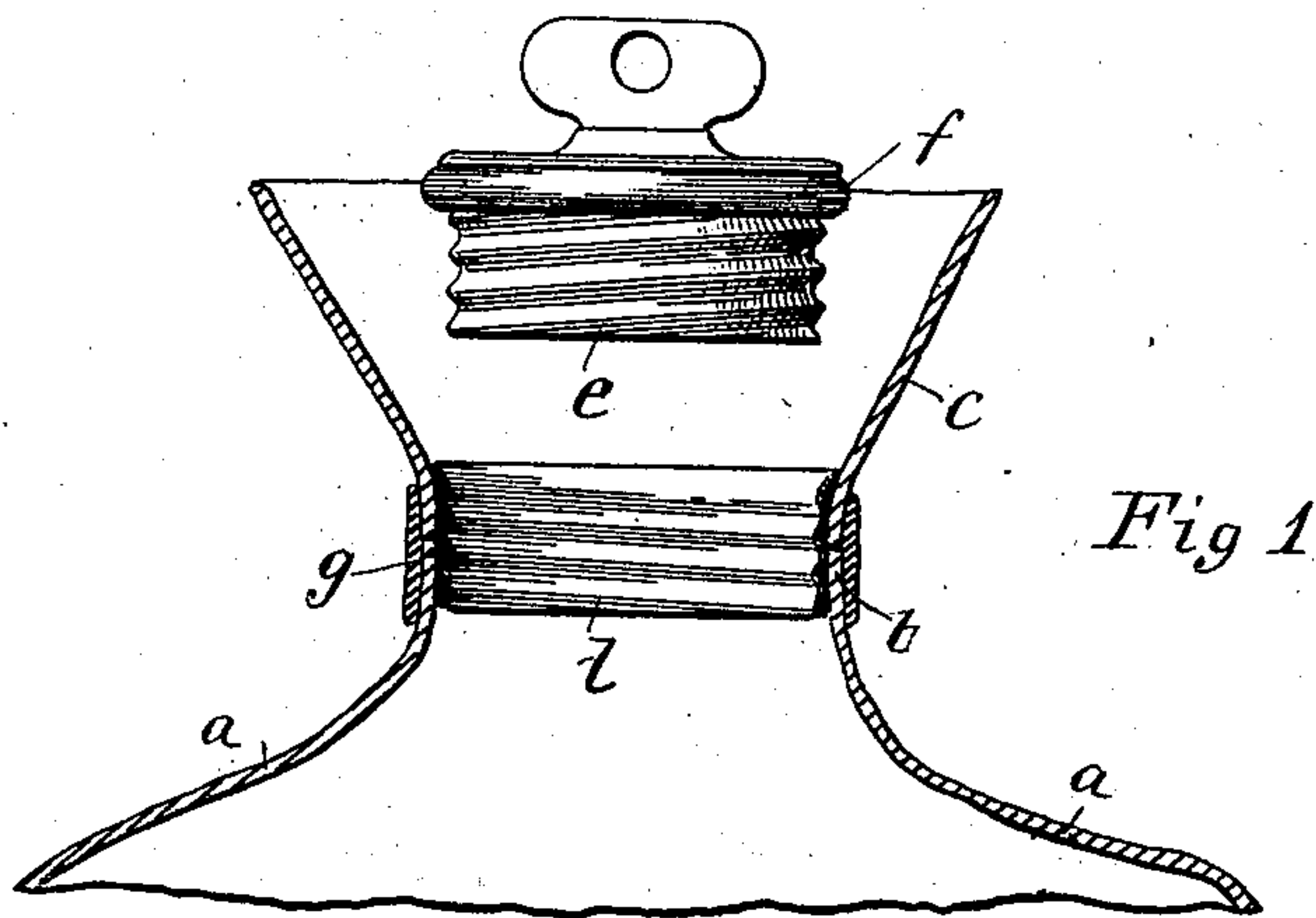


(No Model.)

F. M. UNDERHILL.
FLEXIBLE WATER BOTTLE.

No. 504,058.

Patented Aug. 29, 1893.



WITNESSES:

R. B. Shepherd.

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INVENTOR

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UNITED STATES PATENT OFFICE.

FRANCIS M. UNDERHILL, OF NEW YORK, N. Y., ASSIGNOR TO WHITALL, TATUM & CO., OF SAME PLACE.

FLEXIBLE WATER-BOTTLE.

SPECIFICATION forming part of Letters Patent No. 504,058, dated August 29, 1893.

Application filed March 8, 1893. Serial No. 465,086. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS M. UNDERHILL, a citizen of the United States, residing in the city, county, and State of New York, have invented new and useful Improvements in Rubber or other Flexible Water-Bottles, of which the following is a specification.

The present invention relates to rubber or other flexible water bottles, or similar articles.

The main object of the invention is to provide an improved connection between the body of the bottle and the sleeve which receives a stopper for holding water in the bottle, and the invention consists mainly in a bottle of the character indicated, having a neck which extends into a sleeve, which sleeve also receives a stopper in such manner as to close the bottle and to press the neck against the sleeve, whereby the elastic neck constitutes a washer or packing, as hereinafter more fully described.

The invention consists also in other combinations, as hereinafter specified.

In the accompanying drawings Figure 1 is a central section of a bottle of the character indicated made as heretofore proposed, and on which my invention is an improvement. Fig. 2 is a central section of my improved bottle. Fig. 3 is a side view of a stopper adapted to be used therewith. Figs. 4 and 5 are central vertical sections of modifications.

The old form of bottle, shown in Fig. 1, has a flexible rubber body *a*, with a neck *b*, and a funnel-shaped mouth *c*, with an internal screw-threaded sleeve *d*, which is adapted to receive the screw-threaded stopper *e* the stopper being provided with the rubber packing ring *f*, to prevent leakage between the sleeve *d* and the stopper when the latter is in place. In constructing this form of bottle the sleeve *d* is inserted within the neck, and is secured in this position, as indicated at *g*. It has been found that there is much difficulty in inserting the sleeve in the position indicated, and to so secure it in place that it will not work loose, and thus allow water to leak out of the bottle.

The difficulties mentioned are entirely overcome by my invention, according to which the bottle *a* is provided with a sleeve *d* entirely

exterior to the neck *b*, and which is not, or, at least, need not, be permanently secured thereto. Preferably, the neck *b* is provided with a rubber ring *h*, which surrounds and forms a part of the neck, being cemented to said neck as shown in Fig. 2. The sleeve *d* in said figure is turned in at the lower end, forming an internal flange *i* with a central opening *j* sufficiently large to permit insertion of the neck *b* with its ring *h*. The ring *h* is generally made so large that when inserted as shown it will hold the sleeve *d* in the position which it occupies in Fig. 2. *k* is a screw-threaded stopper (if the sleeve is provided with a screw-thread, which, however, is not always essential) having its lower end *l* of conical form, and adapted to screw into the sleeve *d*, so that the point of the conical end will pass into the neck *b*, and will by a wedge action press the neck firmly against the sleeve, thereby forming a perfect packing.

It will be seen that by my improved construction the metal sleeve designed to receive the stopper is entirely outside of the neck, and that no cemented joint is required, the sleeve being secured to the bottle by the mere act of inserting the neck and its ring through the opening *j*, but I should consider it within my invention if the sleeve and neck were cemented together so long as the sleeve was entirely outside of the neck, and so arranged that the stopper, when inserted, would press the neck against the sleeve in the manner above described.

While the body of the bottle and its ring *h* have been described as of rubber, evidently other elastic or flexible materials would be equivalent thereto.

Evidently a flexible elastic enlargement or ring can be formed on the neck of the bottle in other ways than that shown in Fig. 2. For example, the ring may be made by coiling the material of the neck part *b* entirely around a suitable core, as shown in Fig. 4, or by coiling the neck *b* without using a core, as shown in Fig. 5. The enlargement may sometimes be omitted, in which case the part *b* would itself form the packing. It is evident, also, that it is not essential that the lower end of the stopper should be conical, although it is best to have it so.

What I claim is—

1. The combination, in a water bottle, or similar article, of a body having a suitable neck, a sleeve into which the neck is inserted, 5 and a stopper adapted to be inserted into the same, and to press the neck of the bottle against the sleeve, whereby the material of the neck is interposed between the sleeve and the stopper, and forms a packing, substan- 10 tially as described.

2. The combination, in a water bottle or similar article, of a body, having a neck with an elastic packing ring, a sleeve into which the neck and its ring are inserted, and a stop-

per adapted to be inserted into the same sleeve, 15 and to press the ring against the sleeve, thereby forming a packing, substantially as described.

3. The combination, in a water bottle, of a rubber body, having a suitable neck, a sleeve 20 surrounding said neck, and entirely on the outside thereof, said sleeve being adapted to receive also a stopper, substantially as described.

FRANCIS M. UNDERHILL.

Witnesses:

CHARLES M. CATLIN,
HARRY M. TURK.