No. 607,530. Patented July 19, 1898.

J. S. TAYLOR.

COLLAPSIBLE TUBE FOR PLASTIC OR LIQUID MATERIALS.

(Application filed June 29, 1897.)

(No Model.)

Fig. 1

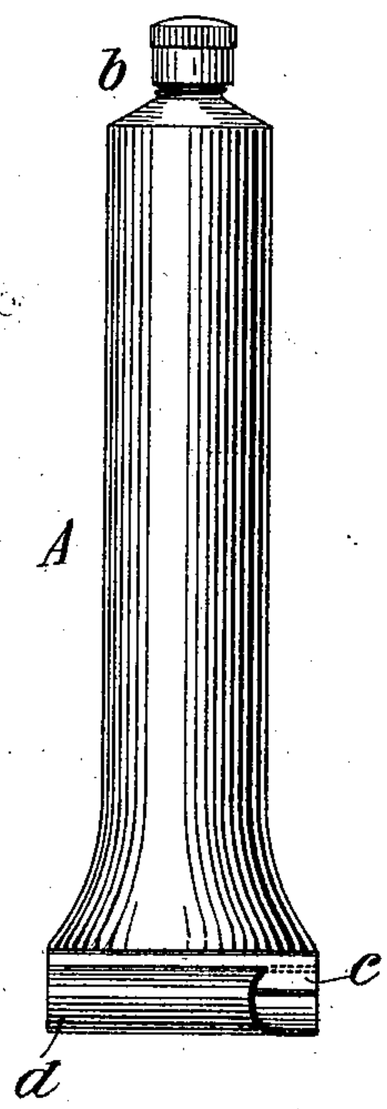


Fig. 4

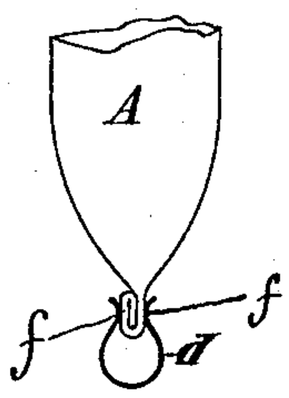


Fig. 2

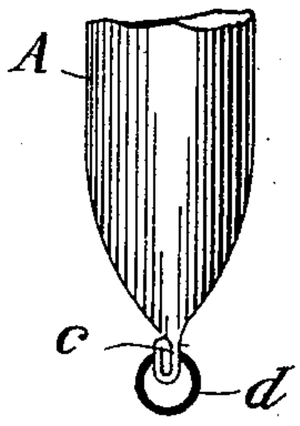
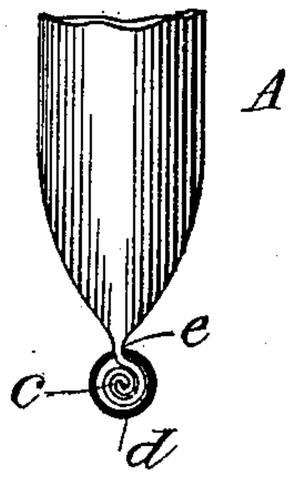


Fig. 3



Witnesses:
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W. C. Pinckney

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UNITED STATES PATENT OFFICE.

JOHN SCOTT TAYLOR, OF LONDON, ENGLAND, ASSIGNOR TO THE WINSOR & NEWTON, LIMITED, OF SAME PLACE.

COLLAPSIBLE TUBE FOR PLASTIC AND LIQUID MATERIALS.

SPECIFICATION forming part of Letters Patent No. 607,530, dated July 19, 1898.

Application filed June 29, 1897. Serial No. 642,802. (No model.)

To all whom it may concern:

Be it known that I, JOHN SCOTT TAYLOR, a subject of the Queen of Great Britain, residing at 76 Cromwell avenue, Highgate, London, in the county of Middlesex, England, have invented certain new and useful Improvements in Collapsible Tubes for Plastic and Liquid Materials, of which the following is a specification.

My invention relates to collapsible tubes for plastic materials or liquids—such as paints, ointments, oil, &c.—whereby the material contained in the tube may be pressed out of an opening at one end.

The object of my invention is to provide simple means which can readily be applied to the tube for preventing leakage at the folded end of the same.

My invention consists generally of a collapsible tube for plastic and liquid materials having one end of said tube smoothly flattened and folded, in combination with a spring-clamp bearing upon and binding this flattened portion of the tube with a constant springing pressure.

In the accompanying drawings, Figure 1 is an elevation of a collapsible tube embodying my invention and with the clamp partly broken away to more clearly show its application. Fig. 2 is an edge view, enlarged, of the same, the upper part of the tube being broken away. Fig. 3 is an edge view, enlarged, of a modification.

Similar letters represent like parts in the different figures.

A is an ordinary collapsible tube such as is used for containing plastic paint, oil, &c., and having the usual contracted outlet at one end covered by a screw-cap *b*. The opposite end of the tube A is flattened and folded upon itself, but evenly and smoothly, as shown at *c*, and a spring-clamp *d* is then clamped upon such flatly and evenly folded end *c*, binding the folds of the tube tightly together with a constant pressure. In Figs. 1 and 2 of the drawings I have shown my preferred form of the clamp *d*, which is a longitudinal slit spring-tube, the edges of which are adapted to be first sprung apart to introduce the folds *c* between them and then allowed to spring tightly against the folds. I prefer to make the tubular clamp *d* of spring-steel, as being especially strong and durable and of such lasting resiliency that it will hold the folds so tightly together that they cannot be separated to cause the slightest leakage, which often occurs if the folds are cemented together, as is usual. The tubular clamp *d* may be of any size in cross-section, and such form permits it to be used with collapsible tubes of any size and with as many folds as desired between the edges of the clamp. It is not necessary to cement the folds together, though this may be done, if desired. If the folds of the collapsible tube be too thick to insert between the edges of the clamp *d*, the folds may be cemented together, and the edges of said clamp may be made to bind the two sides of the tube A closely together above the folds at *e*, said folds being inclosed within the tube *d*, as shown in Fig. 3.

If desired, the spring-clamp may be more or less U-shaped in cross-section, as in Fig. 4, instead of having the form shown in the preceding figures. In such case the edges may be turned back and the pressure on the tube A will be exerted between the bends *f* of the clamp. The turning back of the edges serves to strengthen the resiliency of the clamp.

It will be seen that owing to the circular shape and size of the clamping-tube *d* it is possible to roll up the body of the collapsible tube A with great smoothness, and thus prevent wrinkling or puckering of the walls thereof, while at the same time securing a complete expulsion of the contents. Again, in the act of discharging the contents from the mouth of the tube, in the pressure or rolling of my clamp upon the tube at every and the very smallest stage of such rolling or pressure action it is acted upon at once and directly and the contents promptly forced toward the discharging-mouth, whereas if the part *d* were merely a grooved or gutter-like form having two upright parallel sides it would not only lack the spring-clamping action, but would not at once upon the slightest

act of being turned effectually and uniformly push forward and cause the discharge of some of the contents at the tube's mouth.

I claim—

In combination with a collapsible tube for plastic or liquid materials and having one end flattened and folded upon itself as set forth, a longitudinally-slitted spring-tube clamping at its slitted portion and by its own resilience the folded portion of the tube, and serving to force the contents toward the discharging end of the tube, at the slightest turning or rolling of the clamp upon the tube.

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