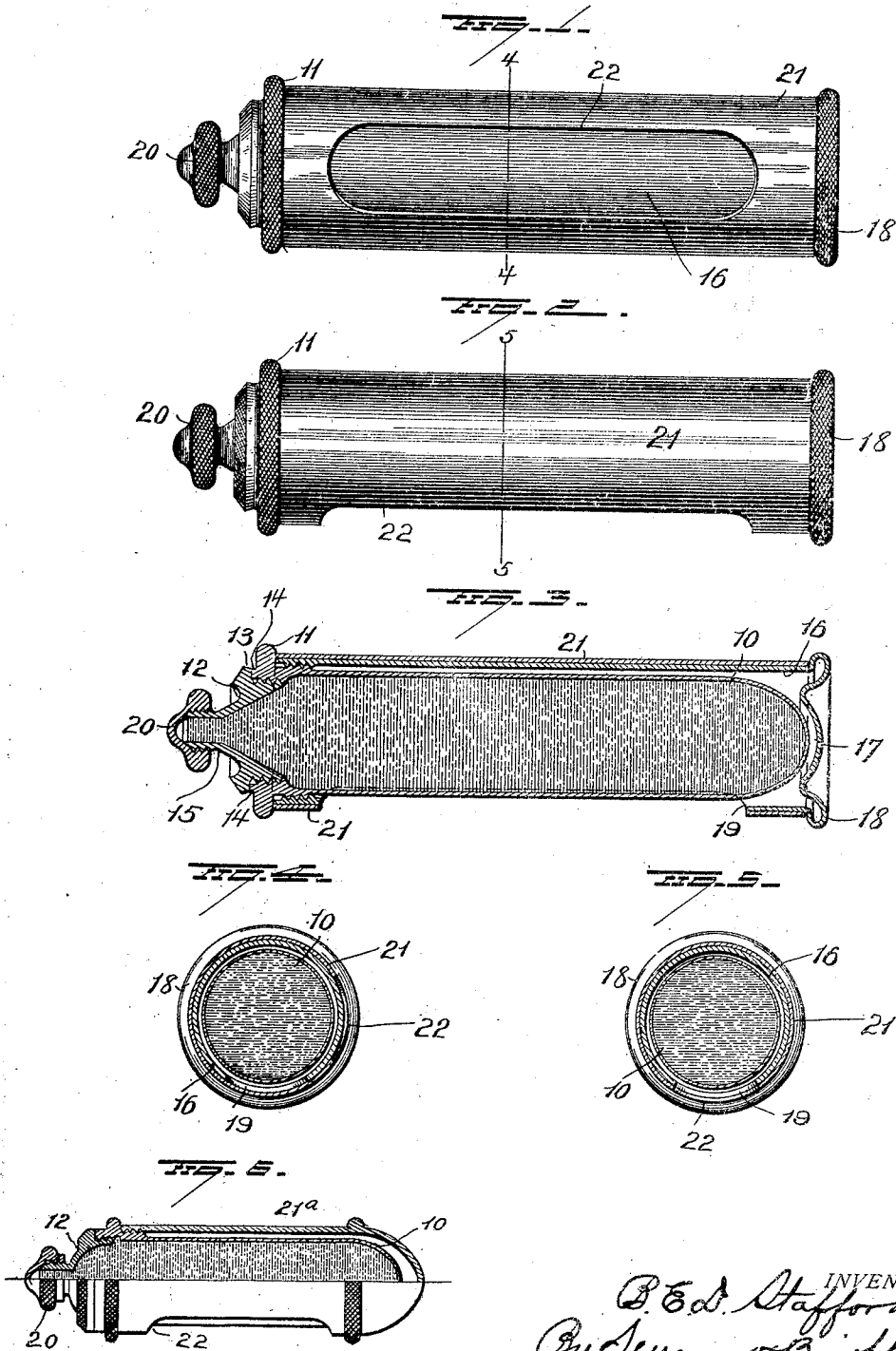


B. E. D. STAFFORD.
 COMBINED COLLAPSIBLE TUBE AND CONTAINER THEREFOR.
 APPLICATION FILED AUG. 8, 1919. RENEWED MAY 3, 1921.

1,382,136.

Patented June 21, 1921.



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UNITED STATES PATENT OFFICE.

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COMBINED COLLAPSIBLE TUBE AND CONTAINER THEREFOR.

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Specification of Letters Patent. Patented June 21, 1921.

Application filed August 8, 1919. Serial No. 316,143. Renewed May 3, 1921. Serial No. 466,538.

To all whom it may concern:

Be it known that I, BENJAMIN E. D. STAFFORD, a citizen of the United States, and a resident of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Combined Collapsible Tubes and Containers Therefor; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in combined collapsible tubes and containers therefor.

Many tooth articles and medical preparations and the like are sold in collapsible tubes which are made of sheet material and are compressed to eject the contents from a nozzle at one end of the tube. The tubes now on the market have a head at one end and are open at the other end, the open end being closed by flattening and folding the metal after the tube has been filled.

The object of this invention is to provide a specially constructed tube with a container for inclosing, supporting and protecting the tube, the container being separate from the tube so that it may be detached and used with another filled tube, and it consists in a tube closed at one end and open at the other, a head detachably connected with the open end of the tube and a container inclosing the body of the tube and detachably secured to the latter adjacent its open end.

My invention further consists in certain details of construction and combinations of parts as will be more fully explained and pointed out in the claims.

In the accompanying drawings; Figure 1 is a view in elevation of my improvement, the collapsible tube being concealed by the hood surrounding the container; Fig. 2 is a similar view with the hood turned to expose the tube; Fig. 3 is a view in longitudinal section; Fig. 4 is a view in transverse section on the line 4—4 of Fig. 1 and Fig. 5 is a similar view on the line 5—5 of Fig. 2, and Fig. 6 is a view of a modified form of container.

10 represents a collapsible tube which as shown in Fig. 3 is closed at one end and open at the other, the open end being thickened to form a support and also a means for the attachment of the head. The body of the tube is made of thin and flexible sheet

material that will give under pressure, and as above explained the head or open end of the tube is considerably thicker than the body so that it will be stiff and rigid instead of pliable, and is provided with a peripheral rib 11 preferably milled or roughened on its outer face, which rib not only braces and stiffens the head end of the tube but also enables the said end to be grasped and held while attaching and detaching the container and head.

The head 12 is threaded at its lower end to engage the internal threads in the open or head end of the tube 10 and is also provided with an outwardly projecting flange 13 which contacts with the upwardly projecting rib 14 of the tube 10 and forms a sealed joint between the tube and the head. The head terminates in a nozzle 15 the bore of which extends through the head and widens out in the latter so that the width of the bore at its inner end approximates the diameter of the opening in the head end of the tube; hence the liquid, paste or other matter in the tube has an unobstructed passage to and through the nozzle, except of course that due to the gradual decrease in the width of the bore.

The tube 10 is provided externally adjacent its head end with external threads for the attachment of the container 16, which latter is cylindrical in form closed at one end and open at the other. The end closure 17 may be integral with or secured to the body of the container and is provided with a peripheral bead 18 of the size and shape of the bead 11 on the head end so as to impart a symmetrical appearance to the finished article. This container is provided with a finger slot 19 extending approximately its length, through which the ends of the fingers of the hand holding the device may be inserted to engage the collapsible tube for compressing the same to eject a portion or the whole of its contents through the nozzle 15, the latter being normally closed by the screw cap 20.

Encircling the container 16 between the end beads 11 and 18, and held against displacement by the latter, is the cylindrical hood 21 provided with a slot 22 approximately of the size and shape of the finger slot 19 in the container. This hood has a snug fit on the container to prevent it from accidental turning, but is free to be turned by the hand to bring the slot 22 therein into

alinement with the slot 19 in the container as shown in Figs. 3 and 5, and thus expose the collapsible tube, or it can be turned to cover the finger slot 19 in the container, as shown in Figs. 1 and 4, and thus protect the tube 10 from accidental compression.

With this construction the tube will be filled through its head end, and the contents of the tube are sealed by the insertion of the head 12.

The tube 10 with head 12 attached is complete in itself and may be filled and put on the market and used like the ordinary collapsible tube of commerce without the container, and can be used with a container purchased separately. Or the containers can be applied to and sold with the tubes. The container however forms an ornamental covering for the tube and protects it against accidental rupture due to excessive pressure to which the tube is subjected when grasped by the head and compressed.

In Fig. 6 I have shown the container or finger tube 21^a with a curved end conforming in shape to the curved end of the collapsible tube.

It is evident that many slight changes might be resorted to in the relative arrangement of parts shown and described without departing from the spirit and scope of my invention. Hence I would have it understood that I do not wish to confine myself to the exact construction and arrangement of parts shown and described, but

Having fully described my invention what I claim as new and desire to secure by Letters-Patent, is:—

1. The combination of a collapsible tube closed at one end and open at the other, the open end being thickened, a head detachably secured to the open end of the collapsible tube and provided with a central discharge nozzle, and a container for housing said tube, the said container being closed at one end and open at the other, the open end being detachably secured to the outer face of the thickened open end of the collapsible tube.

2. The combination of a collapsible tube open at one end and closed at the other, a head screwed to the inner face of the open end of the tube and provided with a discharge nozzle, and a container for housing the tube, the said container being detachably secured to the outer face of the tube adjacent the open end of the latter and hav-

ing a finger slot in its side whereby the contents of the tube may be ejected by the pressure of a finger against the tube.

3. The combination of a collapsible tube open at one end, a head detachably secured to the tube at the open end of the latter and provided with a discharge nozzle, a container for housing the tube, the said container being open at one end to receive the tube detachably secured in position at its open end, the said container having a finger slot therein, and a hood carried by the container and adapted to be turned to cover the finger slot in the latter.

4. The combination of a collapsible tube open at one end and closed at the other, a head detachably secured to the open end of the tube and provided with a discharge nozzle and a cylindrical container for the flexible body of said tube, the said container being detachably secured to the tube adjacent the open end of the latter and provided with a finger slot whereby the contents of the flexible tube may be ejected by direct pressure of a finger against the tube.

5. The combination of a collapsible tube open at one end and closed at the other, a head detachably secured to the open end of the tube and provided with a discharge nozzle, and a container open at one end and closed at the other and secured at its open end to the tube adjacent the open end of the latter, the said container having a finger slot therein, substantially as and for the purpose set forth.

6. The combination of a collapsible tube open at one end and closed at the other, a head detachably secured to the open end of the tube and provided with a discharge nozzle, a container inclosing the body of the collapsible tube and detachably secured to the same adjacent its open end, the said container having a finger slot, and a hood movably mounted on the container and adapted to be moved to cover the finger slot, and having a slot adapted to be brought into alinement with the finger slot in the container.

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

BENJAMIN E. D. STAFFORD.

Witnesses:

A. R. KELSO,

HARRY M. WILLIS.