

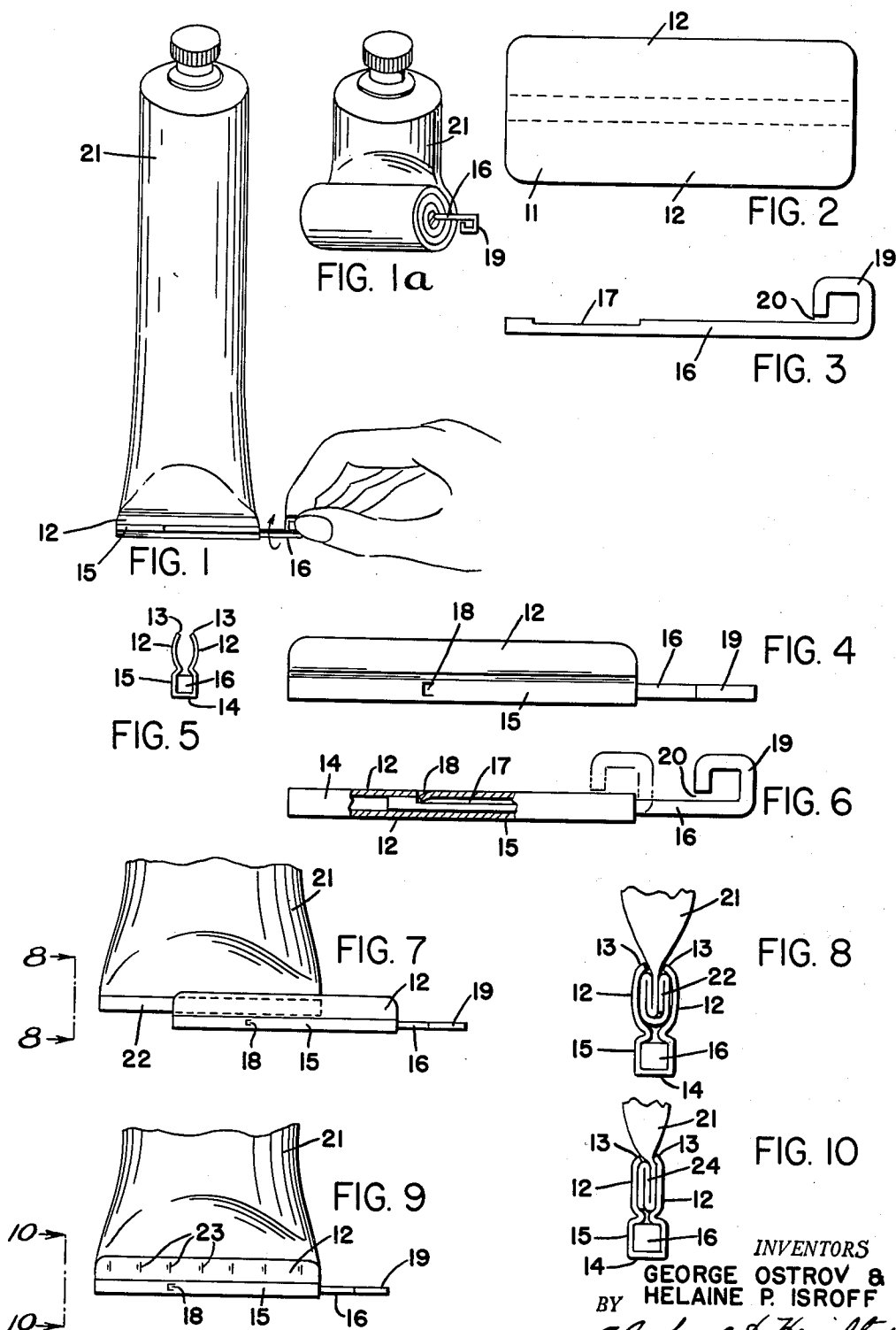
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COILING DEVICE FOR COLLAPSIBLE DISPENSING TUBE

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COILING DEVICE FOR COLLAPSIBLE DISPENSING TUBE

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1 Claim. (Cl. 222—99)

The invention relates generally to collapsible tubes for dispensing paste or creamy materials such as dentifrices, shaving creams, and various cosmetic and medicinal creams and the like. More particularly, the invention relates to a novel coiling and squeezing device for completely collapsing the tube to eject the entire contents therefrom, while coiling the tube into a compact roll.

A large proportion of paste and creamy materials in everyday use are sold in convenient dispensing tubes of soft metal such as lead, and the material is dispensed a little at a time as usage requires, by removing the cap from the nozzle end and squeezing the soft metal tube with the fingers to eject the material from the nozzle. This method of dispensing the material is extremely wasteful because the tube is seldom, if ever, flattened completely throughout to remove all the material, and the tube becomes messy, misshapen and awkward to use, and is usually thrown away long before exhausting all the material.

Various devices have been proposed for squeezing such tubes, but they have all had certain disadvantages such as being expensive to manufacture, difficult to adapt to conventional dispensing tubes, awkward and unwieldy in use, and having projections requiring oversize or abnormally shaped cartons for packaging.

It is an object of the present invention to provide a novel coiling device for collapsible dispensing tubes which overcomes all of the foregoing disadvantages and facilitates completely collapsing the tube into a tight coil.

Another object is to provide a novel tube coiling device which may be attached easily to present conventional tubes, permanently or detachably.

A further object is to provide a novel tube coiling device having an extensible, non-removable handle which maintains the tube to minimum size for packaging.

A still further object is to provide a novel tube coiling device which is extremely simple and compact, inexpensive to manufacture and easy and efficient to use.

These and other objects are accomplished by the improvements, constructions, and combinations comprising the present invention, a preferred embodiment of which is shown by way of example in the accompanying drawing and described in detail herein. Various modifications and changes in details of construction may obviously be made within the scope of the invention as defined in the appended claim.

In the drawings:

Fig. 1 is a general view showing the novel coiling device applied to a collapsible dispensing tube before collapsing;

Fig. 1a is a similar view showing the tube partly collapsed and coiled;

Fig. 2 is an enlarged plan view of the blank from which the clip may be formed;

Fig. 3 is an elevation of the key which fits within the clip;

Fig. 4 is a side elevation of the formed clip with the key inserted therein;

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Fig. 5 is an end view thereof;

Fig. 6 is a bottom plan view thereof, partly in section to show the key retaining means;

Fig. 7 is a side elevation showing the manner of slidably attaching the clip to the sealed end of a conventional dispensing tube;

Fig. 8 is an enlarged end view thereof;

Fig. 9 is a view similar to Fig. 7 showing the clip permanently attached to a dispensing tube; and

Fig. 10 is an enlarged end view thereof.

As shown in Fig. 2, the novel clip may be formed from a blank of sheet material 11, preferably thin sheet metal which is easily bent, by folding the blank along the dash lines into a substantially U shape having two side portions or flanges 12. The flanges 12 are preferably shaped to have inturned lips 13 at their upper ends as shown in Fig. 5, and are indented above their bottom ends to form with bottom wall 14 a substantially square channel portion 15 extending longitudinally of the clip.

The key 16 shown in Fig. 3, may be formed from a bar which is square in cross section of dimensions adapted to fit slidably in channel 15, so that it is non-rotatable in the channel but slidable longitudinally therein. The shank of key 16 is provided on one side with a longitudinal notch 17, and a tang of metal 18 is formed in one side portion 12 of the clip for slidably engaging in said notch, for permitting limited longitudinal movement of the key in and out of the clip, while retaining the key in the clip.

The projecting end of the key is preferably formed into a loop 19 constituting a handle portion, by bending the key backward over itself. The loop may be located on the same side of the key as the notch 17, and the end of the loop is spaced from the shank of the key as shown at 20, so that when the key is retracted it will lie over the clip as indicated in dotted lines in Fig. 6, and thus occupy a minimum of space. This enables the manufacturer or merchandiser to package dispensing tubes having the novel coiling device attached thereto, in the same size box or carton as conventional tubes.

The novel clip with its key inserted and locked therein, as shown in Fig. 4, is adapted for ready sliding attachment onto the sealed end of a dispensing tube 21, as shown in Figs. 7 and 8, or permanent attachment to a dispensing tube as shown in Figs. 9 and 10. The conventional dispensing tube has its end folded over several times to form a sealed closure 22, and the side flanges 11 are designed to fit slidably thereover with the lips 13 engaging over the top of the folded portion. The side flanges have sufficient resiliency or springiness to provide a substantially tight friction fit over the folded portion to resist endwise movement of the clip as the key is subsequently moved in and out.

The novel clip is equally well adapted to be permanently attached by the tube manufacturer to the sealed end of the tube 21, by crimping the metal of the side portions 12 into the folded over portion of the tube, as indicated at 23. By attaching the clip in this fashion, the tube manufacturer is able to shorten his tube and save a substantial amount of metal because the crimped side walls aid in sealing the tube and less folding of the end is required, as indicated at 24 in Fig. 10.

In using the novel coiling device, attached either removably or permanently to a dispensing tube 21, the user merely pulls out the key 16 to its extended position and turns the key by grasping the handle portion with his fingers, as indicated in Fig. 1. Since the key is non-rotatable in the clip and the clip is attached to the tube, turning the key will wind the end of the tube in a tight coil. As the contents of the tube are dispensed the key is used to continuously roll the used part of the tube into a neat and compact coil, as indicated in Fig. 1a, thereby

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expelling the contents from the flattened portion. When the tube is nearly empty, the extra leverage provided by the coiling device enables expelling the entire contents of the tube so that none is wasted.

The novel coiling device is simple, compact and inexpensive, and extremely easy to use by everyone, including children. The retractible key occupies a minimum of space in packaging, and allows extending the key for easy operation without danger of losing the key.

We claim:

A coiling device for a collapsible dispensing tube comprising a clip engaged over the sealed end of the tube, said clip having a channel extending parallel to said sealed

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end, a one-piece rigid key slidable and non-rotatable in said channel and having a handle loop on one end extending rearwardly over said clip in normal retracted position, an elongated notch in said key extending along one side thereof, and a projection on the clip slidably engaged in said notch to limit extensible movement of said key.

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