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2,545,773

COLLAPSIBLE TUBE WINDING AND EXTRUDING KEY

Original Filed Feb. 20, 1947

Fig. 1.

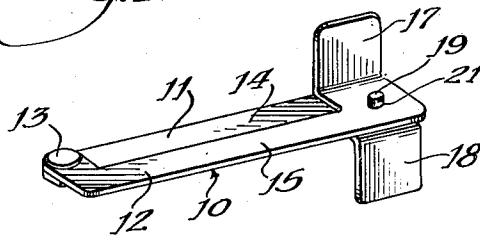


Fig. 3.

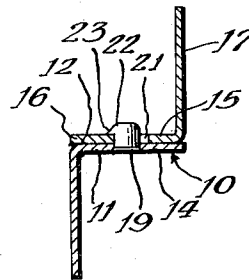


Fig. 2.

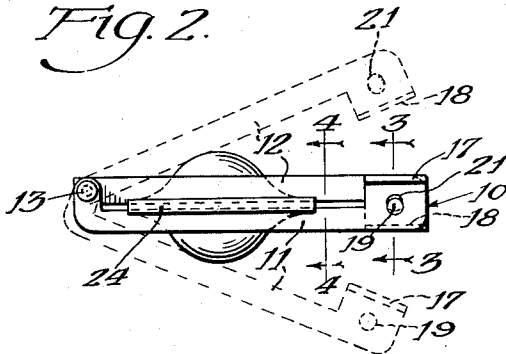


Fig. 4.

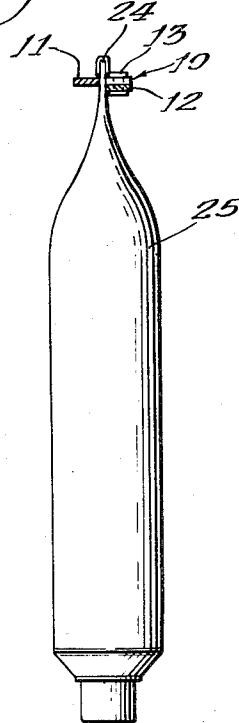


Fig. 5.

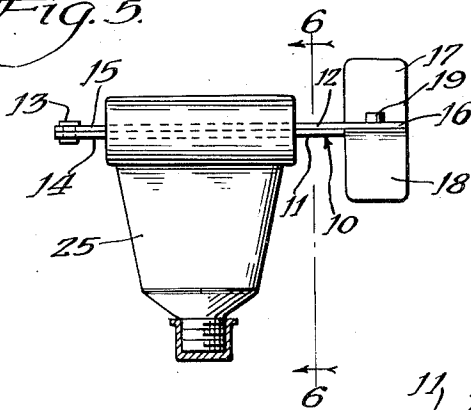
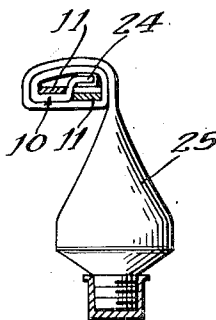


Fig. 6.



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UNITED STATES PATENT OFFICE

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COLLAPSIBLE TUBE WINDING AND
EXTRUDING KEY

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Substituted for abandoned application Serial No. 729,797, February 20, 1947. This application August 21, 1948, Serial No. 45,462

6 Claims. (Cl. 222-99)

1

This is a substitute for abandoned application Serial No. 729,797 filed February 20, 1947.

This invention relates to a collapsible tube winding and extruding key which is especially adapted for use in conjunction with collapsible tubes containing toothpaste, shaving cream, and various other pastes, creams, and like materials which are sold in collapsible tubes.

The primary object of the present invention is to provide a novel key for winding and extruding pastes, creams or like materials from collapsible tubes.

Another object of the present invention is to construct the new key in such a manner that it may be readily gripped and held in the hands of the operator when in use during the winding and extruding operation.

A further object of the invention is to construct the new collapsible tube winding and extruding key in such a manner that the pivotally connected clamping jaws embodied therein may be releasably latched together and against accidental and undesirable movement relative to each other about their pivotal interconnection during the collapsible tube winding and extruding operation.

Other and further objects of the present invention will be apparent from the following description and claims and are illustrated in the accompanying drawing which, by way of illustration, shows a preferred embodiment of the present invention and the principles thereof and what I now consider to be the best mode in which I have contemplated applying these principles. Other embodiments of the invention embodying the same or equivalent principle may be used and structural changes may be made as desired by those skilled in the art without departing from the present invention and the purview of the appended claims.

In the drawing:

Fig. 1 is a perspective view illustrating a preferred and typical embodiment of the present invention;

Fig. 2 is a top plan view illustrating in dotted lines the two pivotally connected clamping jaws which are embodied in the new collapsible tube winding and extruding key as they appear prior to being latched together at the start of the winding and extruding operation, and showing the two clamping jaws in full lines as they appear when latched together at the start of the winding and extruding operation;

Fig. 3 is an enlarged transverse sectional view on line 3-3 of Fig. 2 illustrating the latching

2

means by which the pivotally connected clamping jaws are releasably latched together during the winding and extruding operation;

Fig. 4 is a transverse sectional view on line 4-4 in Fig. 2 showing the new collapsible tube winding and extruding key in position of use upon a collapsible tube at the start of the winding and extruding operation;

Fig. 5 is a top plan view illustrating the new collapsible tube winding and extruding key as it appears after a substantial portion of a collapsible tube has been wound therearound; and

Fig. 6 is a view on line 6-6 in Fig. 5 partly in section and partly in elevation.

A preferred embodiment of the new collapsible tube winding and extruding key is illustrated in the drawing, wherein it is generally indicated at 10, and comprises a lower clamping jaw 11 and an upper clamping jaw 12 which are pivotally connected together in any suitable manner as by means of a headed rivet 13. As shown in the drawing, the lower clamping jaw 11 includes a substantially flat uniplanar body portion 14, and the upper clamping jaw 12 includes a substantially flat L-shaped uniplanar body portion 15 which is substantially narrower in width than the body portion 14 of the clamping jaw 11. The body 15 of the upper clamping jaw 12 includes a latching end portion 16 and a finger grip or handle portion 17 is formed integrally with the said latching end portion 16 and extends upwardly therefrom at approximately a right angle thereto. The body 14 of the lower clamping jaw 11 has a downwardly extending finger grip or handle portion 18 formed integral therewith and this handle portion 18 depends from the body 14 of the lower clamping jaw 11 at approximately a right angle thereto and in spaced relationship with but substantially parallel to the finger grip or handle portion 17 which is formed integral with the body 15 of the upper clamping jaw 12.

A latch element in the form of a stud 19 is mounted in any suitable manner, as by soldering, in an opening 20 which is formed in the body 14 of the lower clamping jaw 11, and a latch opening 21 is formed in the latch portion 16 of the upper clamping jaw 12. As shown in Fig. 3, the latch element or stud 19 has a laterally projecting flange 22 formed thereon and a latch portion 23 which defines a part of the marginal edge of the latch opening 21 in the latch portion 16 of the upper clamping jaw 12 is adapted to latchingly engage under this latch flange 22.

The use and operation of the new collapsible

3

tube winding and extruding key are as follows: The clamping jaws 11 and 12 may be spread apart laterally, upon their pivotal connection 13, into the position in which they are illustrated in dotted lines in Fig. 2, whereupon the lower and relatively flat bottom end portion 24 of a collapsible tube 25, containing cream, paste or like material, may be arranged in a substantially vertical position between the two clamping jaws 11 and 12 which are at this time preferably disposed in a substantially horizontal position, as in dotted lines, Fig. 2. The two clamping jaws 11 and 12 may then be drawn together, upon their pivotal interconnection 13, and as they are thus drawn together the body 15 of the upper clamping jaw 12 slides over the body 14 of the lower clamping jaw 11 so as to clamp the flattened bottom end portion 24 of the collapsible tube 25 between the two clamping jaws 11 and 12. As the two clamping jaws 11 and 12 are thus moved into effective or clamping position the latch opening 21 which is formed in the latch portion 16 of the upper clamping jaw 12 comes into registry with and above the latch element or stud 19 which is carried by the lower clamping jaw 11, whereupon the two clamping jaws 11 and 12 may be pressed together so that the latch portion 23, which forms a part of the marginal edge of the latch opening 21, will latchingly engage under the latching flange 22 on the latch element or stud 19 and thus securely latch the two clamping jaws 11 and 12 together and against unintentional and undesirable separation or pivotal movement relative to each other about their pivotal interconnection 13 during the collapsible tube winding and extruding operation.

The collapsible tube rolling and extruding operation may then be completed by manually grasping the finger grip or handle portions 17 and 18 of the clamping jaws 11 and 12 and winding the body of the collapsible tube 25 therearound, gradually, as it is desired to extrude the paste, cream or like contents from the then open tube 25, as may be seen by reference to Figs. 4, 5 and 6 of the drawing.

After the contents of the collapsible tube 25 has been completely extruded therefrom the then empty tube may be unwound or unrolled and the key 10 removed therefrom by slipping the latching marginal edge portion 23 of the latch opening 21, which is formed in the body 15 of the upper clamping jaw 12, out of latching engagement with the latching flange 19 on the latch element or stud 22, and then manipulating the clamping jaws 11 and 12, about their pivotal connection 13, into open position, as in dotted lines in Fig. 2.

It will be noted by reference to Figs. 1, 2 and 3, of the drawing that the latch opening 21 which is formed in the latch portion 16 of the upper clamping jaw 12 is somewhat oval shape in plan form and is somewhat larger in size, along its long axis, than the head of the latch element or stud 19. This arrangement enables marginal edge portions of the latch opening 21 which is formed in the latch portion 16 of the upper clamping jaw 12 to be slipped downwardly over the head of the latch element or stud 19 carried by the lower jaw 11 after which the latching marginal edge portion 23 of the latch opening 21 may be slipped under and into latching engagement with the flange 22 which is formed on the head of the latch element or stud 19.

It will thus be seen from the foregoing description, considered in conjunction with the

4

accompanying drawing, that the present invention provides a novel collapsible tube winding and extruding key, and that the invention thus has the desirable advantages and characteristics and accomplishes its intended objects including those hereinbefore pointed out and others which are inherent in the invention.

I claim:

1. A collapsible tube winding and extruding key comprising a pair of clamping jaws including end portions having a pivotal interconnection, each of the said clamping jaws including a body portion and the said body portions of the said clamping jaws having substantially flat adjacent uniplanar surfaces adapted to be disposed in contacting engagement with each other and one above the other and to clamp a flattened portion of a collapsible tube therebetween, the said clamping jaws including end portions opposite the end portions thereof having the aforesaid pivotal interconnection providing finger grips for manipulating the said key and winding a collapsible tube therearound during the collapsible tube winding and extruding operation, and the said key including means on the said end portions of the said clamping jaws on which the said finger grips are arranged for detachably latching the said clamping jaws together one above the other and against movement relative to each other about their said pivotal interconnection during the collapsible tube winding and extruding operation.

2. A collapsible tube winding and extruding key as defined in claim 1 in which one of the said finger grip portions is formed integral with and extends approximately right-angularly from one of the said clamping jaws at one side thereof and in which the other one of the said finger grip portions is formed integral with and extends substantially right-angularly from the other one of the said clamping jaws at the opposite side thereof from the side at which the said first-named finger grip portion is arranged and in substantially parallel relationship to the said first-named finger grip portion.

3. A collapsible tube winding and extruding device as defined in claim 1 and in which the said means for latching the said clamping jaws together includes a latch portion formed as an integral part of one of the said clamping jaws and having a latch opening formed therein and a latch element mounted on the other of the said clamping jaws and having a latch portion projecting through the body of the said one of the said clamping jaws and latchingly engageable in the said latch opening.

4. A collapsible tube winding and extruding device as defined in claim 1 and in which the said means for latching the said clamping jaws together includes a latch portion formed as an integral part of one of the said clamping jaws and having a latch opening formed therein and a latch element mounted on the other of the said clamping jaws and having a latch portion projecting above the body of the said one of the said clamping jaws and latchingly engageable in the said latch opening, and in which the said latch element has a laterally extending flange formed thereon and in which the said latch portion formed in the said one of the said clamping jaws includes a portion defining a part of the marginal edge of the said latch opening and is engageable under the said laterally extending flange on the said latch element.

5. A collapsible tube winding and extruding

5

key as defined in claim 1 in which one of the said finger grip portions is formed integral with and extends approximately rightangularly from one of the said clamping jaws at one side thereof and in which the other of the said finger grip portions is formed integral with and extends substantially rightangularly from the other one of the said clamping jaws at the opposite side thereof from the side at which the said first-named finger grip portion is arranged and in substantially parallel relationship to the said first-named finger grip portion, and in which the said means for latching the said clamping jaws together includes a latch portion formed in one of the said clamping jaws and having a latch opening formed therein and a latch element mounted on the other of the said clamping jaws and having a latch portion projecting above the said one of the said clamping jaws and latchingly engageable in the said latch opening.

6. A collapsible tube winding and extruding key as defined in claim 1 in which one of the said finger grip portions is formed integral with and extends approximately rightangularly from one of the said clamping jaws at one side thereof and in which the other of the said finger grip portions is formed integral with and extends substantially rightangularly from the other one of the said clamping jaws at the opposite side thereof from the side at which the said first-named finger grip portion is arranged and in substantially parallel relationship to the said first-named

6

finger grip portion, and in which the said means for latching the said clamping jaws together includes a latch portion formed in one of the said clamping jaws and having a latch opening formed therein and a latch element mounted on the other of the said clamping jaws and having a latch portion projecting above the said one of the said clamping jaws and latchingly engageable in the said latch opening, and in which the said latch element includes a laterally extending flange and in which the said latch portion formed in the said one of the said clamping jaws includes a portion defining a part of the said latch opening and latchingly engageable under the said laterally extending flange on the said latch element.

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