Nov. 28, 1950 H. A. PERRIGO 2,531,641

INDICATING EXTENSION-ATTACHMENT FOR COLLAPSIBLE TUBES

Filed May 28, 1949

Fig. 1.

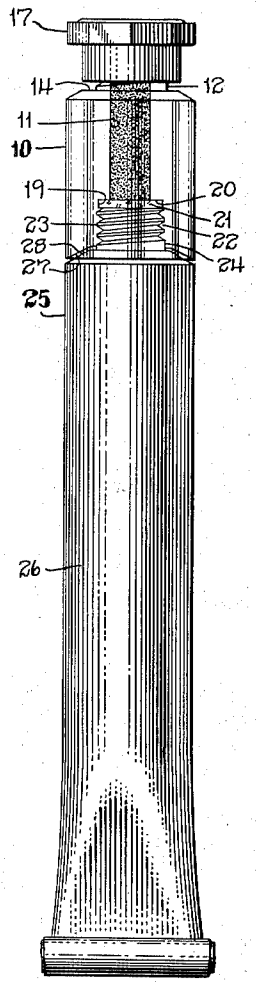


Fig. 2.

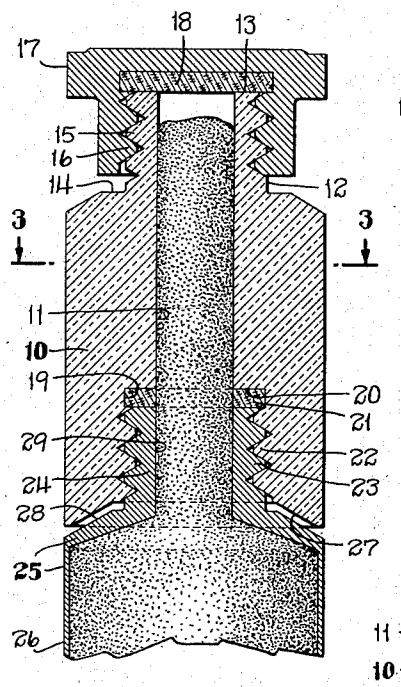


Fig. 3.

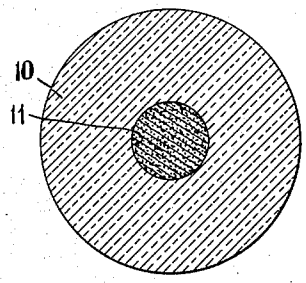


Fig. 5.

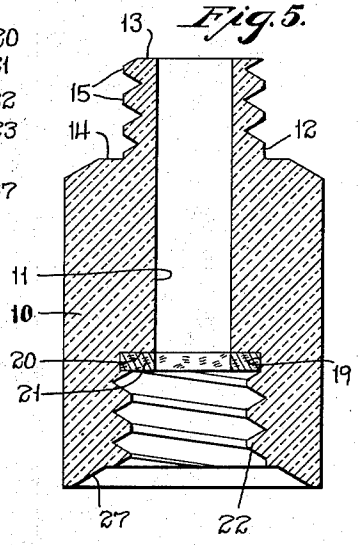


Fig. 4.

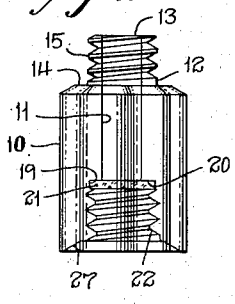


Fig. 6.

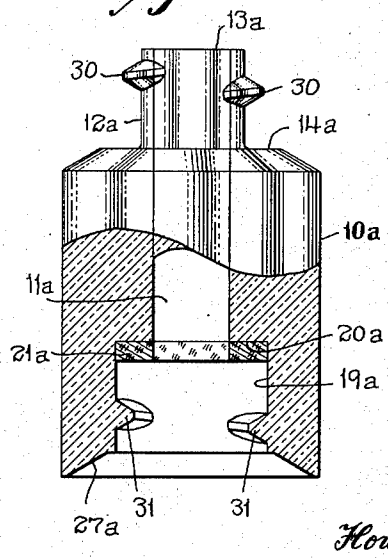
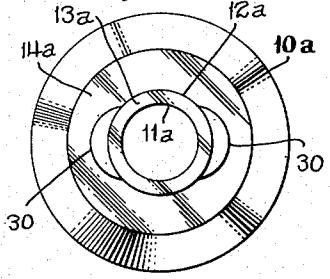


Fig. 7.



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INDICATING EXTENSION-ATTACHMENT FOR COLLAPSIBLE TUBES

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4 Claims. (Cl. 116—114)

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The present invention relates to improvements in extension-attachments for collapsible tubes and relates more particularly to indicating extension-attachments for such tubes, i. e., extension-attachments which serve to indicate the character of the contents of such tubes.

The indicating extension-attachments of the present invention are especially well adapted for use in connection with collapsible tubes of metal containing artists' colors or the like, to enable the observer to readily ascertain the precise shade of the paste-like pigment in the collapsible tubes, though the indicating extension-attachments of the present invention are useful in connection with collapsible tubes containing other materials.

One of the main objects of the present invention is to provide a superior indicating extension-attachment for collapsible tubes whereby the character of the contents of such collapsible tubes may be readily ascertained.

Another object of the present invention is to provide a superior indicating extension-attachment of the character referred to and which may be readily removed from one collapsible tube and reapplied to another when desired.

A further object of the present invention is to provide a superior extension-attachment of the character above referred to which may be purchased separately from the collapsible tubes and readily and conveniently installed thereon by unskilled users without the use of tools, and in a manner which will maintain the airtight character of such collapsible tubes.

Still another object is to provide a transparent extension-attachment of the character referred to and having an extrusion-passage therein and further having a curved outer surface serving to magnify the material in the said extrusion-passage.

With the above and other objects in view, as will appear to those skilled in the art from the present disclosure, this invention includes all features in the said disclosure which are novel over the prior art.

In the accompanying drawings, in which certain modes of carrying out the present invention are shown for illustrative purposes:

Fig. 1 is a view in side elevation of a collapsible tube having attached thereto an indicating extension-attachment constructed in accordance with the present invention;

Fig. 2 is a broken central-longitudinal sectional view of the upper portion of the showing of Fig. 1 but on a larger scale;

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Fig. 3 is a transverse sectional view taken on the line 3—3 of Fig. 2;

Fig. 4 is a view in side elevation of the indicating extension-attachment detached and on substantially the same scale as Fig. 1;

Fig. 5 is a central-longitudinal sectional view of the indicating extension-attachment on substantially the same scale as Figs. 2 and 3;

Fig. 6 is a view partly in side elevation and partly in central-longitudinal section of another form of indicating extension-attachment embodying the present invention; and

Fig. 7 is a top or plan view thereof.

The showing of Figs. 1 to 5 inclusive

The main portion of the indicating extension-attachment shown in Figs. 1 to 5 inclusive is of tubular form and for convenience of description will be designated as a tubular body 10 which has an axial extrusion-passage 11 extending longitudinally therethrough. At its outer end, the body 10 is reduced in diameter to form an outwardly-extending coupling-neck 12 having its outer end-surface providing a sealing-seat 13, for purposes as will hereinafter appear. The outer end-surface 14 of the body may, if desired, also be utilized as a sealing-seat in a manner as will hereinafter appear.

The outer periphery of the coupling-neck 12 is provided with coupling-means in the form of screw threads 15 which are adapted to interengage with screw threads 16 formed interiorly of a closure or cap 17. The said cap 17 may be the usual cap which forms a customary feature of a collapsible tube and contains within its interior a gasket 18 adapted to engage with the sealing-seat 13 provided by the outer end-surface of the coupling-neck 12, as is especially well shown in Figs. 2 and 5.

In its inner portion in coaxial alignment with the extrusion-passage 11, the body 10 is formed with a coupling-recess 19 larger in diameter than the said extrusion-passage and providing at its junction therewith a sealing-seat 20 against which is normally located a gasket 21.

The coupling-recess 19 in the inner portion of the body 11 is provided with coupling means in the form of screw threads 22 adapted to interengage with screw threads 23 formed upon the integral neck 24 of a collapsible tube generally designated by the reference character 25. The collapsible tube 25 in addition to its integral neck 24 also includes a relatively large-diametered body 26 adapted to be readily collapsed.

Preferably and as shown, the inner end-surface

of the body 10 of the extension-attachment is chamfered, as at 27, to substantially conform in slope to the sloping end-surface 28 of the body 26 of the collapsible tube 25, as is especially well indicated in Fig. 2.

The screw threads 15 on the coupling-neck 12 of the body 10 are of the same size-rating and pitch, as are the screw threads 22 in the coupling-recess 19 in the inner portion of the said body 10.

The collapsible tubes such as 25 are usually formed of tin, tin alloys, aluminum or aluminum alloys, and normally will have a cap such as 17 threaded upon their respective necks such as 24, to thus seal the contents within the collapsible tube.

The indicating extension-attachment comprising the elements 10 to 15 and 19 to 22 inclusive, is made of any suitable transparent material such, for instance, as polystyrene, methyl-methacrylate, cellulose acetate or the like. There is afforded by the curved outer surface of such materials a magnifying effect and in the case of methyl-methacrylate, for instance, the extrusion-passage 11 and its contents appear from the exterior to be almost twice their actual diameter and without altering the color or other appearance of the material in the said extrusion-passage 11.

In utilizing the indicating extension-attachment above described, the user may first remove the cap 17 from the neck 24 of the tube and then thread the body 10 onto the said neck until the gasket 21 is pinched between the outer end-surface of the neck 24 and the sealing-seat 20 within the said body. In this manner the body 10 and its associated features become, in effect, an extension of the collapsible tube 25 with the extrusion-passage 11 in communication with the passage 29 in the neck 24 and hence with the entire interior of the body 26 of the collapsible tube 25.

After the extension-attachment has been mounted on the collapsible tube as previously described, the lower end of the body 26 of the collapsible tube may be rolled up slightly or the said body may be otherwise compressed to extrude part of its contents into the extrusion-passage 11 and the contents used if desired, as is indicated by the stippling in Figs. 1, 2 and 3. The extension-attachment, in turn, may be sealed by utilizing the identical cap such as 17 which has previously been removed from the neck 24 of the collapsible tube.

It is preferred to effect the sealing of the body 10 to the neck 24 of the collapsible tube by pinching a gasket such as 21 between the outer end-surface of the neck 24 and the sealing-seat 20 within the coupling-recess 19.

If desired, however, any suitable gasket may be interposed between the inner chamfered end-surface 27 of the body 10 and the end-surface 28 of the collapsible tube 25 to effect the seal at this location.

Similarly, instead of sealing the outer end of the body 10 by means of the gasket 18, any desired gasket may be interposed between the innermost end-surface of the cap 17 and the outer end-surface 14 of the said body 10 to effect the seal at this location, if desired.

The showing of Figs. 6 and 7

The indicating extension-attachment shown in Figs. 6 and 7 is of the same basic character as the extension-attachment previously described and, for convenience, similar features will bear like reference characters plus the subscript *a*.

In the structure of Figs. 6 and 7 the coupling-neck 12*a*, instead of being formed with complete screw threads, is formed at substantially diametrically-opposite points with coupling-means in the form of coupling-lugs 30—30 which are preferably helically inclined and displaced with respect to each other in an axial direction. The said coupling-lugs are adapted to interengage with screw threads in a suitable cap such, for instance, as the cap 17 previously described.

The coupling-recess 19*a* in the body 10*a* is provided at substantially diametrically-opposite points with coupling-lugs 31—31 which are preferably helically inclined and displaced with respect to each other in an axial direction. The said coupling-lugs are adapted to engage with suitable screw threads such, for instance, as the screw threads 23 of the collapsible tube 25 previously described.

The coupling-lugs 30—30 and 31—31 preferably have the same general characteristics and functions as the screw threads 15 and 22 previously described, and further, are better adapted to interengage with screw threads which might vary slightly in pitch or other characteristics from normal. Thus, the device illustrated in Figs. 6 and 7 will fit a variety of collapsible tubes, some with threads of U. S. standards and some with threads of European standards.

The body 10*a* and its integral features is formed of transparent material such, for instance, as those materials mentioned in connection with the description of the structure of Figs. 1 to 5 inclusive.

From the foregoing it will be apparent that the extension-attachments of the present invention are adapted to enable a user to readily apply them to collapsible tubes and to utilize the ordinary cap thereof to effect the ultimate seal of the device, while meanwhile indicating to the user the color or other characteristics of the contents of the collapsible tube which normally will have been extruded wholly or partially into or through the device.

The invention may be carried out in other specific ways than those herein set forth without departing from the spirit and essential characteristics of the invention, and the present embodiments are, therefore, to be considered in all respects as illustrative and not restrictive, and all changes coming within the meaning and equivalency range of the appended claims are intended to be embraced therein.

I claim:

1. As a new article of manufacture, an indicating extension-attachment for collapsible tubes having caps, including: a body formed of transparent material and provided at one end with a coupling-neck designed and adapted to have a cap mounted thereover and also having an outwardly-facing sealing-seat; the said body being provided at its opposite end with a coupling-recess designed and adapted to receive the neck of a collapsible tube and with an inwardly-facing sealing-seat; the said transparent body being also formed with an extrusion-passage leading from its said coupling-recess to and through its said coupling-neck; and the said body further having coupling-means on its said coupling-neck for coupling a cap thereto and coupling-means in its said coupling-recess for coupling the device to the neck of a collapsible tube.

2. As a new article of manufacture, an indicating extension-attachment for collapsible tubes having caps, including: a body formed of transparent material and provided at one end with a coupling-neck designed and adapted to have a cap mounted thereover and having an outwardly-facing sealing-seat; the said body being provided at its opposite end with a coupling-recess designed and adapted to receive the neck of a collapsible tube and with an inwardly-facing sealing-seat; the said transparent body being also formed with an extrusion-passage leading from its said coupling-recess to and through its said coupling-neck; the said body further having coupling-means on its said coupling-neck for coupling a cap thereto and coupling-means in its said coupling-recess for coupling the device to the neck of a collapsible tube; and the two said coupling-means being of substantially-corresponding dimensional characteristics so that upon the removal of a cap from the neck of a collapsible tube the said neck may be entered into coupling engagement in the coupling-recess of the said body and whereby the said cap may be applied over the coupling-neck of the said body.

3. As a new article of manufacture, an indicating extension-attachment for collapsible tubes having caps, including: a body formed of transparent material and provided at one end with a coupling-neck designed and adapted to have a cap mounted thereover and having an outwardly-facing sealing-seat; the said body being provided at its opposite end with a coupling-recess designed and adapted to receive the neck of a collapsible tube and with an inwardly-facing sealing-seat; the said transparent body being also formed with an extrusion-passage leading from its said coupling-recess to and through its said coupling-neck; the said body

further having coupling-means on its said coupling-neck for coupling a cap thereto and coupling-means in its said coupling-recess for coupling the device to the neck of a collapsible tube; the said transparent body having a curved exterior portion serving to magnify the material in the said extrusion-passage; and the two said coupling-means being of substantially-corresponding dimensional characteristics so that upon the removal of a cap from the neck of a collapsible tube the said neck may be entered into coupling engagement in the coupling-recess of the said body and whereby the said cap may be applied over the coupling-neck of the said body.

4. As a new article of manufacture, an indicating extension-attachment for collapsible tubes having caps, including: a body formed of transparent material and provided at one end with a coupling-neck having a sealing-seat adjacent thereto and at its opposite end with a coupling-recess also having a sealing-seat adjacent thereto; the said transparent body being also formed with an extrusion-passage leading therethrough from its said coupling-recess to and through its said coupling-neck; the said body further having coupling-means on its said coupling-neck and coupling-means in its said coupling-recess; and one of the said coupling-means being designed and adapted to couple the said body to a collapsible tube and the other coupling-means being designed and adapted to engage and hold a closure-member.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,359,467	Davis	Oct. 3, 1944