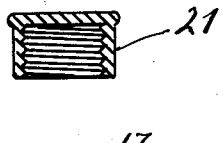
March 8, 1932. H. A. SCHELL 1,848,846

MEASURING DEVICE FOR PASTE TUBES

Filed Jan. 3, 1931

Fig 1



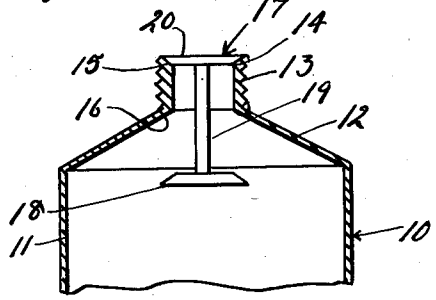


Fig 2

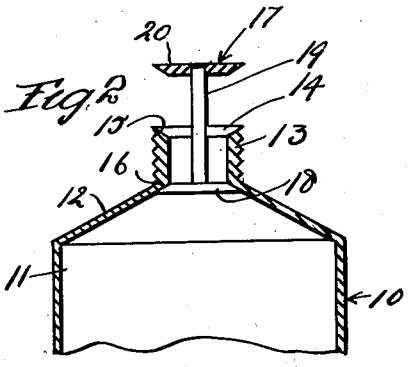


Fig 3

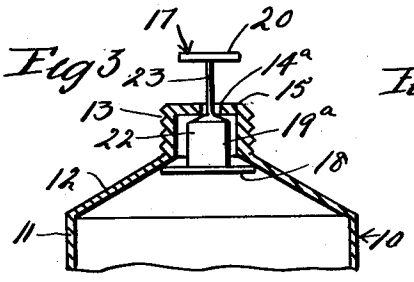


Fig 5

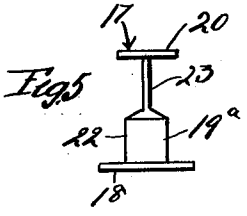


Fig 6

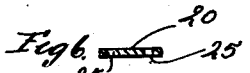


Fig 7

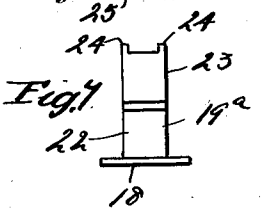


Fig 8

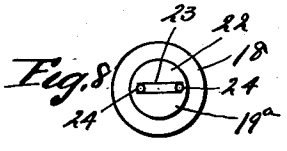
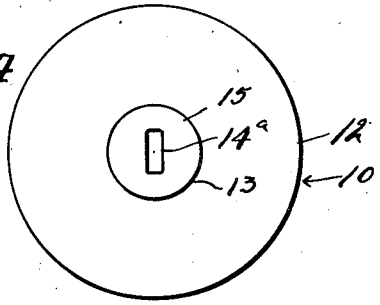


Fig 4



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Patented Mar. 8, 1932 1,848,846

UNITED STATES PATENT OFFICE

HARRY A. SCHELL, OF PHILADELPHIA, PENNSYLVANIA

MEASURING DEVICE FOR PASTE TUBES

Application filed January 3, 1931. Serial No. 506,330.

My invention relates to new and useful improvements in a measuring device for paste tubes and has for one of its objects to provide an exceedingly simple and effective device of this character which may be mounted in the outlet end of a flexible collapsible paste holding tube so that when squeezed to eject the paste, the latter will act upon a portion of the device to move the same outward at least a portion of its stroke during the measuring operations.

Another object of the invention is to provide a measuring device of the kind described consisting of a closure or valve disc operable within the tube toward and away from the neck or outlet thereof and stem connected with the closure or valve disc and extending through the outlet of the tube and a head on the outer end of said stem to limit the inward movement of the closure or valve disc, said head also acting as the means by which the closure or valve disc may be initially moved and carried throughout a portion of its stroke by the paste within the tube to which the device is connected as said paste is ejected.

A further object of the invention is to provide a device for use in connection with paste tubes having variously shaped outlet orifices.

With these ends in view, this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, I will describe its construction in detail, referring by numerals to the accompanying drawings forming a part of this application, in which:

Fig. 1 is a vertical or longitudinal sectional view of the upper portion or outlet end of a paste tube, the cap of which is shown remote therefrom to illustrate an embodiment of my invention, the measuring device being shown in inoperative or closed position.

Fig. 2 is a similar view without the cap but with the measuring device at the end of its stroke of the measuring operation.

Fig. 3 is a view similar to Fig. 2 of a modification.

Fig. 4 is an upper end view of the tube shown in Fig. 3 without the measuring device.

Fig. 5 is a side elevation of the measuring device.

Fig. 6 is a cross sectional view of the head of the measuring device shown in Fig. 5.

Fig. 7 is a view at right angles to Fig. 5 of the closure or valve disc and stem of the measuring device.

Fig. 8 is an upper end view of Fig. 7.

In carrying out my invention as herein embodied, 10 represents a flexible or pliable collapsible paste holding tube of any ordinary, usual or well known construction including the body 11 which in particular is the collapsible portion, an end wall 12 provided with the exteriorly threaded neck 13 having the outlet orifice 14 therethrough and in some cases the extreme outer end of the neck 13 is shaped to form a seat 15 while another or main seat 16 is provided by the surface of the end wall 12.

As shown in Figs. 1 and 2, in particular, the measuring device 17 includes a closure or valve disc 18 for operation within the tube and for movement toward and away from the outlet orifice or the seat 16 which it will engage at the end of its outward stroke.

A stem 19 is carried by the closure or valve disc 18 being formed as a part thereof threaded thereon, riveted thereto, or connected therewith in any other well known fashion, but these two parts are preferably formed as a unitary structure prior to assemblage in the tube.

The stem 19 which projects through the outlet orifice has a head 20 connected therewith as by threading or riveting said head upon the stem.

The closure or valve disc 18 and the head 20 may be of any suitable or applicable configuration having beveled edges, as illustrated, straight edges or rounded edges and they may be flat, concavo-convex, concave, convex, conical, frusto-conical, or generally conical shaped with a flanged base and the stem 19 may be of suitable cross sectional configuration.

While as herein illustrated the head 20 to some extent acts as a closure for the tube when the latter is not in use, its paramount purpose

is to give an initial movement to the measuring device and retain the stem 19 in a straight or upright central position. When the tube is squeezed for collapsing the walls thereof and to eject the paste therefrom, said paste will act upon the head 20 and begin to move the same outward and the flow of the paste toward the outlet orifice will act upon the closure or valve disc 18 and carry it along until said disc engages the end wall 12 and more particularly the seat 16 cutting off any other flow of paste.

That portion of the paste beyond the end of the neck may then be removed and each time the device is operated in this manner, the quantity of paste that can be removed will be the same, thus providing for the accurate dispensing of predetermined quantity of the contents of the tube.

As soon as the dispensed paste has been removed, the measuring device may be reset by pushing down or inward on the head until the latter engages the outer end of the neck of the tube and this may be done prior to the placement of the tube cap 21 upon the tube or by the actions of placing the cap in position in which case the cap 21 is placed over the head 20 and said cap then moved toward the neck of the tube until it engages said neck and then by screwing the cap into place, the measuring device will be reset.

From the foregoing description, it will be obvious that the engagement of the paste with the head 20 of the measuring device during the ejection of the paste maintains the stem 19 in a central position within the outlet orifice so that said measuring device at no time binds or is thrown sidewise to prevent the proper seating of the closure or valve disc 18. This is quite an advantage over all other known measuring devices which are likely to be cocked all to one side permitting the paste to be ejected from the tube even after the closure or valve disc has engaged one side of its seat.

In Figs. 3 to 8 inclusive, I have shown a similar device of similar construction adapted particularly for use in connection with a paste tube having an oblong or oval shaped outlet orifice 14*a* in which case the stem 19*a* has a portion 22 which may be circular in cross section or other suitable shape to fit into the neck of the tube and an outer part 23 of oblong or oval shape in cross section or of a shape similar to that of the outlet orifice 14*a*.

It is to be understood, of course, that the inner portion 22 of the stem 19*a* is smaller than the interior or bore of the tube neck and likewise the outer portion 23 of said stem is smaller than the outlet orifice 14*a* to permit free flow of the contents of the tube between the stem and the surrounding walls of adjacent or contiguous parts of the paste tube.

The closure or valve disc 18 is connected with the lower end of the stem, the same as in the previously described form of the invention and likewise the head 20 is mounted on the outer end of the stem after the latter has been assembled in the necking outlet of the tube and in order to illustrate a variation in construction, the outer end of the stem 19*a* is shown as provided with two projections 24 insertible in holes 25 in the head 20 and then bent over or riveted. The device shown in Figs. 3 to 8 inclusive functions in the same manner as the one described in connection with Figs. 1 and 2.

It might be well to state that the several parts of the measuring device may be made of metal, fibre, hard rubber or other suitable material or some of said parts may be made of one material and other parts of another material.

Of course I do not wish to be limited to the exact details of construction as herein shown, as these may be varied within the limits of the appended claims without departing from the spirit of my invention.

Having thus fully described my invention, what I claim as new and useful is:—

1. In a measuring device for collapsible paste tubes, a tube including an end wall and a neck having an outlet therethrough, a measuring device for assemblage in the outlet of said tube and comprising a stem, and a disc at each end of said stem, one of said discs co-operating with the interior of the end wall to control the discharge of paste through the outlet and both of said members to be carried along by the discharged paste whereby the stem will be retained in substantially a central position and the inner member moved into complete engagement with the inner surface of said end wall.

2. In a measuring device for paste tubes comprising a stem slidable longitudinally through the outlet of a collapsible paste tube, a valve member on the inner end of said stem to control the discharge of paste from the tube, and a disc of substantially the same diameter as the neck of the paste tube fixed to the outer end of the stem to be carried along by the discharged paste for moving the valve member to a closed position.

In testimony whereof, I have hereunto affixed my signature.

HARRY A. SCHELL.