

[72] Inventors **Joseph A. Voss**
Denver, Colo.;
Carl W. Johnson, Neenah, Wis.
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 [73] Assignee **said Johnson assignor to said Voss**

[56] **References Cited**

UNITED STATES PATENTS			
2,489,502	11/1949	Ruth.....	128/263
2,587,717	3/1952	Fourness.....	128/263
3,148,680	9/1964	Roberts et al.....	128/263
FOREIGN PATENTS			
684,290	12/1952	Great Britain.....	128/263

Primary Examiner—Adele M. Eager
Attorney—Fraser and Bogucki

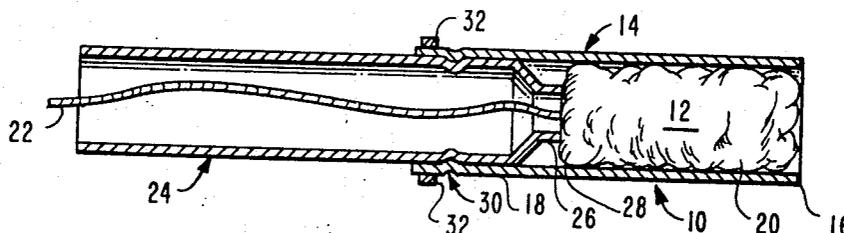
[54] **HYGIENIC MEDIUM APPLICATOR**
11 Claims, 7 Drawing Figs.

[52] U.S. Cl..... **128/263,**
128/260

[51] Int. Cl..... **A61f 15/00**

[50] Field of Search..... **128/263,**
264, 270, 260, 261, 341

ABSTRACT: An hygienic medium applicator having an inner tube which telescopes within an outer tube to eject an hygienic medium carried therein, the outer surface of the outer tube having an arrangement of one or more elements secured thereto to enhance gripping and referencing of the applicator during use.



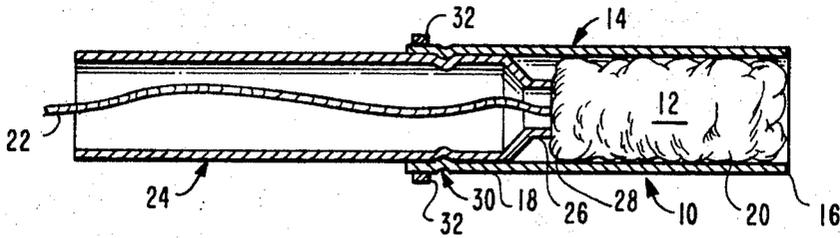


FIG. -1

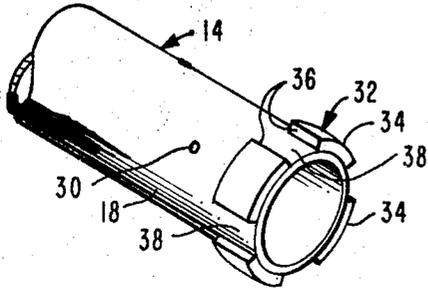


FIG. -2

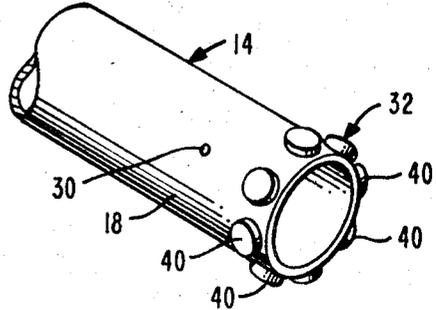


FIG. -3

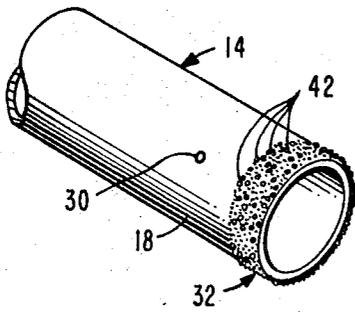


FIG. -4

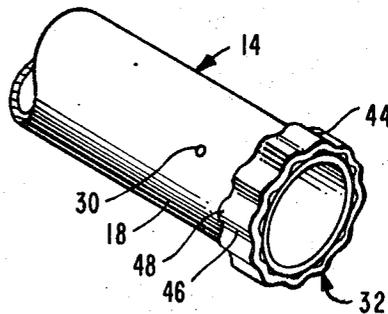


FIG. -5

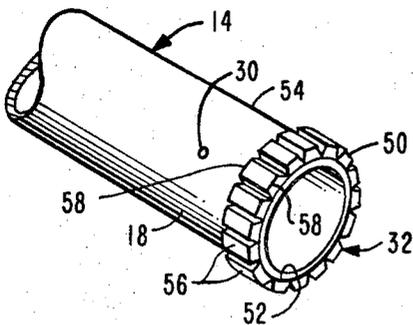


FIG. -6

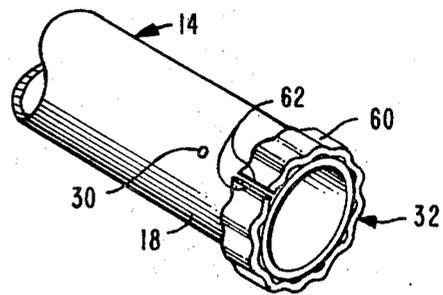


FIG. -7

INVENTORS
 JOSEPH A. VOSS
 CARL W. JOHNSON
 BY

FRASER & BOSUCKI

ATTORNEYS

HYGIENIC MEDIUM APPLICATOR

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to hygienic devices, and more particularly to improved hygienic applicators for catamenial tampons or suppositories.

2. History of the Prior Art

Various devices for catamenial and suppository purposes have been proposed for the sanitary injection of absorbent or medicinal media into body cavities. During the use of such devices it is important to be able to grip the applicator portion of the device securely and to guide it easily into the body cavity. This is particularly true when the medium is to be delivered to the vagina or the anus, since in such instance a portion or all of the applicator is out of a direct line of vision. Applicators which are clumsy or complicated to handle or have slippery outer surfaces interfere with proper and rapid delivery of the hygienic medium to the desired body cavity and tend to discourage their continued use. It is of primary importance to the user to be able to manipulate the hygienic device readily but securely and to be able to judge the relative positions of the respective portions of the applicator, whenever visual orientation is inconvenient or inadequate.

Examples of hygienic medium applicators directed toward these and other problems are illustrated in U.S. Pat. No. 3,347,234 issued Oct. 17, 1967 to Joseph A. Voss, entitled "HYGIENIC DEVICES" and assigned to the same assignee as the present application. The applicators disclosed in that patent each comprise a cylindrical outer tubular member having a folded conical forward end which opens to deliver an hygienic medium from the outer tubular member to the desired body cavity when an inner member, telescoped within the outer tubular member, is moved forwardly to eject the medium. The outer tubular member is made of relatively thin material to facilitate the formation and opening of the conical forward end during egress of the hygienic medium. To inhibit inward deformation of the outer tubular member as a result of the gripping pressure of the user, a sufficiently thick and strong, and substantially continuous ring is secured about the rear portion of the outer tubular member. The ring of the aforementioned patent also provides a tactile indexing reference and gripping means.

BRIEF SUMMARY OF THE INVENTION

The present invention is primarily for use in connection with outer tubular members having structural properties, such as thick walls, which inherently provide the tube with sufficient resistance to deformation during use, but also having very slippery outer surfaces. Such tubes will typically have open front ends, but it is not intended to limit the invention to tubes of that specific type.

In accordance with the present invention, the slippery exterior of the outer tubular member of an hygienic medium applicator is provided with any of a number of different arrangements of elements suitably secured to the tube exterior to facilitate indexing and gripping of the applicator during use as required. The different gripping and indexing arrangements may comprise single or plural elements circumferentially disposed about the outer surface of the tubular member.

In accordance with one example of the invention, the gripping and indexing arrangement comprises plural elements of desired configuration, the elements being circumferentially disposed about the tubular member with their ends spaced apart from one another. In one such arrangement, each element comprises a segment of a generally cylindrical ring. In another such arrangement, the spaced-apart elements are generally disc-shaped.

In a still further arrangement, the elements comprise abrasive particles adhered to the outer surface of the tubular member by appropriate adhesive means.

In accordance with a further aspect of the invention, gripping and indexing of the applicator may be enhanced for

certain applications by arrangements comprising one or more elements having variable outer surfaces and edges. In one such arrangement, the elements are fabricated so as to assume a wavy configuration, such elements varying between positions in contact with and positions spaced from the outer surface of the tubular member in a circumferential direction about the tubular member.

In another arrangement, the elements are fabricated in a cleated configuration.

The element or elements which define the various gripping and indexing arrangements may be fabricated of any appropriate material such as paper, rubber, ceramic or plastic. Elements to be fabricated of plastic may be cut from extruded sections or may be formed directly on the tubular member as it rotates relative to a dispenser delivering the plastic in a liquid form. Elements fabricated of paper stock such as cardboard and the like are affixed to the outer surface of the tubular member by an adhesive or other appropriate means. Plastic or plastic-coated elements may also be similarly affixed by an appropriate adhesive means or by an interference fit, or by the application of radio frequency to melt the plastic locally and thereby effect the desired bond. The latter bonding technique may be along the lines described in application Ser. No. 728,290, filed May 10, 1968 in the names of Joseph A. Voss et al., entitled "Reinforced Hygienic Medium Applicator Tubes," and assigned to the same assignee as the present application.

Better gripping may be achieved by providing the elements with an abrasive outer surface such as may be accomplished by fabricating the elements from sandpaper.

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing and other objects, features and advantages of the invention will be more apparent from the following detailed description together with the accompanying drawings, in which:

FIG. 1 is a longitudinal section view of an example of an hygienic medium applicator having a gripping and indexing arrangement in accordance with the present invention;

FIG. 2 is a partial, perspective view of an outer applicator tube having a gripping and indexing arrangement in accordance with one example of the invention;

FIG. 3 is a partial, perspective view of an outer applicator tube having a gripping and indexing arrangement in accordance with another example of the invention;

FIG. 4 is a partial, perspective view of an outer applicator tube having a gripping and indexing arrangement in accordance with another example of the invention;

FIG. 5 is a partial, perspective view of an outer applicator tube having a gripping and indexing arrangement in accordance with still another example of the invention;

FIG. 6 is a partial, perspective view of an outer applicator tube having a gripping and indexing arrangement in accordance with yet another example of the invention; and

FIG. 7 is a partial, perspective view of an outer applicator tube having a gripping and indexing arrangement in accordance with another example of the invention.

DETAILED DESCRIPTION

One example of an hygienic medium applicator with which the gripping and indexing arrangements of the present invention may be used is shown in FIG. 1 and includes an applicator 10 enclosing a catamenial tampon 12. The applicator 10 includes a hollow, generally cylindrical outer tubular member 14 having an open forward end 16 and a rear end 18. The tampon device 12 includes a cellulosic cotton tampon 20 or the like positioned within the outer tubular member 14 and having a drawstring 22 connected to the rear end thereof and extending rearwardly therefrom. A tampon-ejecting inner tubular member 24, disposed within the outer tubular member 14 rearward of the tampon 20, has a reduced diameter forward end 26 in the form of a tapered shoulder

with a reduced diameter terminus disposed against the rear end 28 of the tampon 20. The inner tubular member 24 is hollow and generally cylindrical, and has a slightly smaller external diameter than the internal diameter of the outer tubular member 14 so as to telescope readily within the outer member 14 during ejection of the tampon 20 from the forward end 16 of the outer member 14. Means 30 in the form of relatively small detents or flaps extending downwardly and forwardly from the outer tubular member 14 to the inner tubular member 24 are provided to stabilize the position of the inner tubular member 24 within the outer tubular member 14. The detents or flaps 30 inhibit rearward withdrawal of the inner tubular member 24 from the outer tubular member 14, but do not inhibit forward movement of the inner tubular member relative to the outer tubular member.

In accordance with the invention, the gripping and indexing of the applicator 10 is greatly enhanced by arrangements 32 comprising one or more elements circumferentially disposed about the rear end 18 of the outer tubular member 14. As shown in FIGS. 2-7, the arrangements 32 may comprise single or plural elements of different configurations, fabricated of any desired materials and suitably secured to the outer surface of the outer tubular member 14. During use of the applicator 10, the user grips the rear end 18 of the outer tubular member 14 between the thumb and middle finger of one hand, with the index finger positioned at the rear end of the inner tubular member 24. The thumb and second (middle) finger are positioned on opposite sides of the gripping and indexing arrangement 32 which acts as a nonslip finger grip and tactile indexing means to establish the relative position of the inner and outer tubular members. The forward end 16 of the outer tubular member 14 is then directed against the vaginal orifice and is inserted therein, whereupon the applicator 10 is slid up within the vagina to the desired location. The index finger is then approximated to the thumb and second finger so as to push the tampon 20 forward and out of the open forward end 16 of the outer tubular member 14 and into the desired location in the vagina. The applicator 10 is withdrawn from the vagina, leaving the tampon 20 in place, with the drawstring 22 extending from the vagina for subsequent withdrawal of the tampon.

During the insertion procedure, the gripping and indexing arrangement 32 permits the user to ascertain accurately the exact relative positions of the rear end 18 of the outer tubular member 14 and the rear end of the inner tubular member 24, and thus to estimate how nearly complete the ejection is. The arrangement 32 also affords the user a nonslip grip although remainder of the outer tubular member 14 may be very slippery.

The particular catamenial tampon applicator 10 of FIG. 1 is shown and described for purposes of example only, and it will be appreciated by those skilled in the art that gripping and indexing arrangements 32 in accordance with the invention may be used with other types of catamenial tampon applicators. Moreover, it will be understood that use of the arrangements 32 is not limited to applicators for catamenial tampons, and that such arrangements may also be used with other hygienic medium applicators such as applicators for suppositories.

One example of a gripping and indexing arrangement 32 in accordance with the invention is illustrated in FIG. 2. The gripping and indexing arrangement 32 in this instance comprises plural elements 34, each of which is disposed in spaced-apart relation relative to a pair of adjacent elements at the opposite ends 36 thereof. The elements 34 may comprise any convenient number, four such elements being shown in FIG. 2 for purposes of illustration. The plural elements 34 which are configured in the form of portions or segments of a ring may be fabricated of any appropriate material such as plastic, rubber, ceramic, paper and cardboard, and may be affixed to the outer surface of the tubular member 14 by any appropriate means such as gluing. The plural elements 34 and resulting spaces 38 between the opposite ends 36 thereof

provide a particular type of positive feel to the user to enhance the gripping and indexing of the applicator.

The form of gripping and indexing arrangement 32 shown in FIG. 3 is similar to that of FIG. 2 except that the plural elements 40 in this instance are generally disc-shaped. Again the elements 40 are disposed in spaced-apart relation relative to one another and in a circumferential direction about the outer surface of the tubular member 14.

The particular arrangement 32 illustrated in FIG. 3 may be fabricated of materials and by methods discussed in connection with FIG. 2. One alternative method of applying the elements 40 in the FIG. 3 arrangement or the elements 34 in the FIG. 2 arrangement involves the placement of the elements along the length of a piece of tape. Such elements are provided with an adhesive outer surface and the tubular member 14 is rolled over the tape to gather up the elements one by one into their proper places.

One particular fabrication technique which lends itself particularly well to the arrangements of FIGS. 2 and 3, but which may be employed with other arrangements as well, involves the extrusion of a hot melt of plastic. To fabricate the arrangement shown in FIG. 2, for example, the tubular member 14 is rotated relative to the opening of an extrusion mold through which hot melted plastic is intermittently extruded to form the elements 34. The arrangement of FIG. 3 may be formed by a similar process in which drops of the hot melt are intermittently discharged onto the rotating tubular member 14.

FIG. 4 provides an alternative form of gripping and indexing arrangement 32 having plural elements 42 which comprise abrasive particles such as sand or finely pulverized stone. A circumferential portion of the tubular member 14 is provided with an adhesive substance such as by spraying it with a quick-drying glue, and the elements 42 are then dusted onto the wet glue in any appropriate fashion. The FIG. 4 arrangement provides a highly abrasive outer surface which may be desirably for certain applications of the applicator. Similar effects can be achieved with most of the other arrangements such as those of FIGS. 2 and 3 by the use of abrasive sheet material such as sandpaper. The sandpaper may be applied by appropriate means to the outer surface of the element or elements comprising the gripping and indexing arrangement 32, or alternatively may be provided with an adhesive backing so as to comprise the elements.

FIG. 5 shows a further alternative form of the gripping and indexing arrangement 32 in which a single continuous element 44 of generally wavy configuration is employed. The wavy configuration of the element 44 repetitively varies between positions in contact with and positions spaced-apart from the outer surface of the tubular member 14 in a circumferential direction about the tubular member. The element 44 gives the user of the applicator a positive feeling of the applicator because of the wavy outer surface 46 and edge 48 thereof. The element 44 may be fabricated of any appropriate material such as paper or cardboard and may be fastened to the outer surface of the tubular member 14 by any appropriate means such as glue. Where the element 44 is to be made of plastic, such can be accomplished by an extrusion process in which long sections of fluted pipe are extruded, and cut into sections for use.

The gripping and indexing arrangement 32 shown in FIG. 6 is similar to that of FIG. 5 in that a single continuous element 50 is employed. The element 50, however, is of cleated configuration such that the thickness thereof between an inner cylindrical surface 52 which is continuous with the outer surface 54 of the tubular member 14 and an outer surface 56 varies repetitively between minimum and maximum values in a circumferential direction about the tubular member 14 to provide a cleated effect. The irregular outer surface 56 and edges 58 thereof enhance gripping of the applicator in a manner similar to the arrangement of FIG. 5 and may be fabricated of the same material and by methods similar to those discussed in connection with FIG. 5.

While the gripping and indexing arrangement 32 of FIGS. 5 and 6 comprise single continuous elements, it should be understood that such arrangements may comprise plural elements, such elements being mounted in end-to-end fashion to form a generally continuous structure or in spaced-apart relation in the manner of FIG. 2 as desired. For some applications it may be desirable to employ a single element which is not endless but rather is split in section so as to have opposite ends disposed adjacent one another when the element is mounted on the outer surface of the tubular member 14. An example of such an arrangement is provided by FIG. 7, the single element 60 which comprises the gripping and indexing arrangement 32 thereof being of wavy configuration and therefore similar to the element 44 of FIG. 5 except that it is split in section so as to have opposite ends disposed adjacent one another. The element 60 of the FIG. 7 arrangement is shown as having a wavy configuration for purposes of illustration only, and such element may be of cleated configuration as shown in FIG. 6 or of other appropriate configuration as desired. The element 60 provides the same general advantages and may be fabricated of the same materials and by methods similar to those discussed in connection with FIGS. 5 and 6. The FIG. 7 type of arrangement, however, offers at least one additional advantage. If the element 60 is fabricated of a resilient material such as plastic, it may be mounted on the outer surface of the tubular member 14 without the use of an adhesive such as glue if desired. By fabricating the element 60 so as to have an inner diameter which is smaller than the diameter of the outer surface of the tubular member 14, the element 60 is held to the tubular member by its own spring action.

While the invention has been particularly shown and described with reference to preferred embodiments thereof, it will be understood by those skilled in the art that the foregoing and other changes in form and details may be made therein without departing from the spirit and scope of the invention.

We claim:

1. In a hygienic medium applicator having a generally cylindrical, hollow, tubular member adapted to contain an hygienic medium, the improvement comprising a plurality of elements spaced-apart circumferentially and formed separately of said tubular member and mounted on the outer surface of the tubular member, said elements defining tactile gripping and indexing means for the applicator.

2. The combination defined in claim 1, wherein each of the elements is configured in the form of a portion of a ring.

3. The combination defined in claim 1, wherein the elements are generally disc-shaped.

4. In a hygienic medium applicator having a generally cylindrical, hollow, tubular member adapted to contain an hygienic medium, the improvement comprising a circumferential band of closely spaced particles bonded to the rear portion of the outer surface of the tubular member to define a gripping and indexing means for the applicator.

5. The combination defined in claim 4, wherein the particles are glued directly to the outer surface of the tubular member.

6. In a hygienic medium applicator having a generally cylindrical, hollow, tubular member adapted to contain an hygienic medium, the improvement comprising an arrangement disposed about the outer surface of the tubular member and including at least one element configured to repetitively vary between positions in contact with and positions spaced-apart from the outer surface of the tubular member in a circumferential direction about the tubular member.

7. The combination defined in claim 6, wherein the arrangement comprises a plurality of the elements, each of which extends through a different portion of the circumference of the tubular member.

8. The combination defined in claim 6, wherein the at least one element is fabricated of resilient material and has an inner diameter which is smaller than the outer diameter of the tubular member when not disposed about the tubular member.

9. In a hygienic medium applicator having a generally cylindrical, hollow, tubular member adapted to contain an hygienic medium, the improvement comprising an arrangement disposed about the outer surface of the tubular member and including at least one element having an inner surface substantially continuous with a portion of the outer surface of the tubular member, an outer surface at least portions of which are spaced from the outer surface of the tubular member, and a thickness between the inner and outer surfaces thereof which repetitively varies between minimum and maximum values in a circumferential direction about the tubular member.

10. The combination defined in claim 9, wherein the arrangement comprises a plurality of elements, each of which extends through a different portion of the circumference of the tubular member.

11. The combination defined in claim 9, wherein the at least one element is fabricated of resilient material and has an inner diameter which is smaller than the outer diameter of the tubular member when not disposed about the tubular member.

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Disclaimer

3,575,169.—*Joseph A. Voss*, Denver, Colo. and *Carl W. Johnson*, Neenah, Wis.
HYGIENIC MEDIUM APPLICATOR, Patent dated Apr. 20, 1971.
Disclaimer filed July 17, 1974, by the assignee, *Kimberly-Clark
Corporation*.

Hereby enters this disclaimer to claims 1-5 of said patent.
[*Official Gazette June 24, 1975.*]