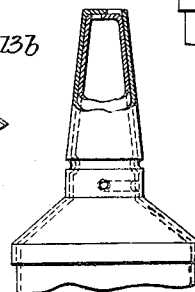
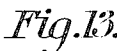
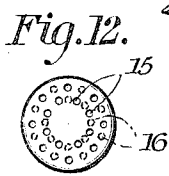
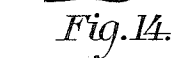
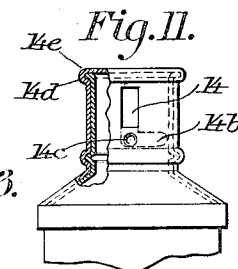
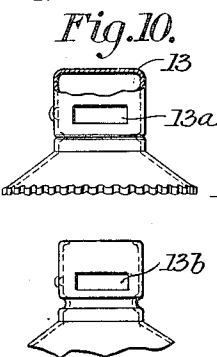
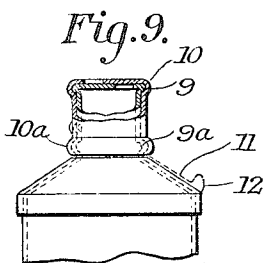
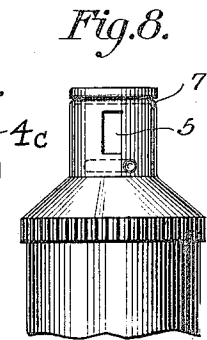
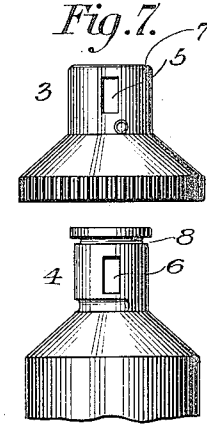
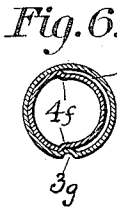
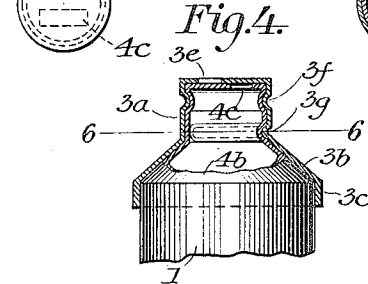
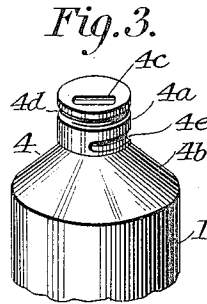
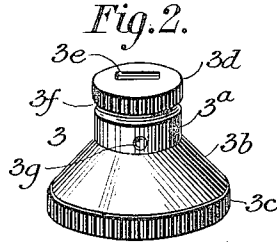
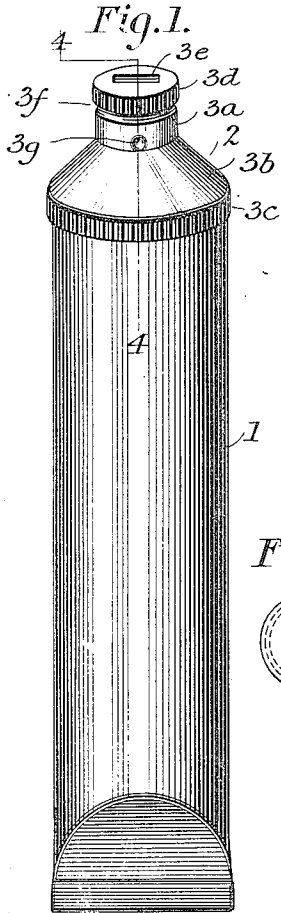


Patented Oct. 29, 1912.

1,042,448.



Witnesses

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RECEPTACLE.

1,042,448.

Specification of Letters Patent.

Patented Oct. 29, 1912.

Application filed November 28, 1910. Serial No. 594,624.

To all whom it may concern:

Be it known that I, FRANK A. KANE, a citizen of the United States, residing at Minooka, in the county of Lackawanna and State of Pennsylvania, have invented certain new and useful Improvements in Receptacles, of which the following is a specification.

This invention relates to receptacles and particularly to the closures thereof.

It is particularly adapted for collapsible tubes, especially where the same are employed for tooth paste and the like.

Heretofore, it has been proposed to employ, in tooth paste collapsible tubes, a detachable closure. To this, there are serious objections, among which may be mentioned the fact that the closure or cap frequently drops out of the user's fingers, when removed, and becomes lost. Another objection resides in the fact that the frequent removal of the cap injures the threads thereof and those on the body portion of the tube; in consequence of which the cap soon becomes useless. Still another objection is the fact that the paste becomes clogged around the threads and, if it hardens, reduces the efficiency of the tube and renders the contents insanitary.

It is the object of my invention to produce a receptacle in which these objections are absent.

Another object of my invention is to provide a tube whereby its contents may be projected onto the bristles of a tooth brush in such form that there shall be a flat surface on its bristle-engaging face.

With these and other objects in view, the invention resides, primarily, in a receptacle in which the closure comprises an inner member and a rotatable member which is, by preference, mounted permanently upon the inner member. Both the inner member and the rotatable member are provided with one or more apertures adapted, when the receptacle is closed, to be out of register but which are adapted to be brought into register by merely turning the rotatable member, without removal thereof from the inner member which supports it. Where the receptacle is to be utilized for viscous materials, such as tooth paste, ointments, syrups, etc., the cooperating apertures in the two members are preferably formed to produce at least one flat surface. To facilitate the manipulation of the rotatable mem-

ber, it is, at one or another portion of its surface, milled, roughened, or otherwise constructed to provide a finger-engaging surface. Means, on one or another of the members, are also provided for limiting the movement of the rotatable member.

I am aware that it has heretofore been proposed to provide receptacles with a stationary member and a rotatable member, with means for limiting the movement of one on and relatively to the other; but, so far as I am aware, there is nothing in the art which discloses a structure similar to that herein contemplated, in that, in these other forms of receptacles, there is absent at least one feature, to wit, an extended portion on the outer member whereby its operation may be facilitated. In practical use of these receptacles, especially those containing viscous substances, it is found that the cooperating parts of the closure are not adapted for convenient manipulation, and that it is a desideratum, in such devices, to provide for convenient and sanitary handling of the contents of the receptacle.

In the accompanying drawings, I have illustrated several of the many possible embodiments of my invention, and wherein:

Figure 1 is a view in perspective of my improved receptacle; Fig. 2 is a similar view of the outer or rotatable member forming a part of my device; Fig. 3 is a similar view of the inner member thereof; Fig. 4 is a fragmentary sectional elevation on the line 4-4, Fig. 1; Fig. 5 is a top plan view of the outer member of the closure, the inner member thereof appearing in dotted lines and, similarly, the relative positions of the apertures or openings in both members; Fig. 6 is a horizontal section through both members, the section being taken on the line 6-6, Fig. 4; and Figs. 7 to 14 are illustrative of several modifications of which my invention is susceptible.

In these drawings, the numeral 1 designates the body portion of a collapsible tube which, for convenience of illustration, I have shown in these drawings. It will be understood, however, that the closure device, 2, constituting my invention, is adaptable to any other appropriate form of receptacle wherein plastic, viscous, powdered, or other materials are contained.

The closure 2 preferably comprises two members, namely, an outer member 3 and an

inner member 4, Figs. 2 and 3. The member 3 preferably consists of a cylindrical body portion 3^a, and a conical or flared portion 3^b, at the lower end of which a milled surface 3^c is provided to facilitate the operation of this member. Similarly, the cylindrical portion 3^a may be milled, as at 3^d. This cylindrical portion is also provided with an opening or aperture 3^e, which may be of any preferred form, but which I elect to be of such formation that it will project the contents of the receptacle in such manner that, where such contents are of a more or less plastic character, at least one surface thereof shall be comparatively flat. Moreover, the cylindrical portion is provided with an annular groove 3^f, and with a limit stop 3^g. The inner member 4 similarly comprises a cylindrical body portion 4^a and a conical or flared portion 4^b which connects, or is formed with, the body portion 1 of the receptacle. The cylindrical portion of this member is provided with an opening or aperture 4^c of a form to cooperate with the opening or aperture 3^e in the outer member 3. The cylindrical portion is provided with an annular depression 4^d adapted to receive the inner portion of the inwardly-extending groove 3^f in the member 3; and, also, with a second groove or depression 4^e in which the limit stop 3^g rides.

It will be understood that the member 3 encompasses the member 4, and that the means just described are adapted to maintain the parts in proper operative relation, the connection between the two members being such as to permit easy rotation of one member relatively to the other. It will also be seen that, by providing the outer member 3 with the extension 3^b and with the milled surface 3^c, the closure, in its entirety, may be conveniently and readily manipulated by the user with the same hand as that in which the body portion is held. By this arrangement of the parts, it is unnecessary to remove any portion when it is desired to effect a discharge of the contents of the receptacle. The mere rotation of one part relative to the other, and this by the fingers of the same hand as that which holds the receptacle, may be effected, leaving the other hand free. The permanent securement of the two members in operative engagement with each other renders it unnecessary to remove any part in order to permit the removal of the contents of the receptacle. Moreover, the portions of the two members 3 and 4 in which the discharge openings are provided are in such close and proper operative relation that the movement of one relatively to the other, to close the receptacle, cuts off the flow or movement of the receptacle's contents sharply, so that no portion of such contents is left exposed to harden or clog the parts.

The depression 4^e is of such length that the limit stop 3^g is allowed to travel therein only to such extent that the apertures 3^e and 4^c will be in exact register when it is desired to discharge the contents of the receptacle; and, when the device is closed, so far out of register as to preclude any leakage or accidental discharge of such contents. In Fig. 5, the relative positions of the apertures, when out of register, is clearly disclosed, the aperture 4^c appearing in dotted lines. In Fig. 6, the cooperating relation of the limit stop 3^g in the groove 4^e is made to clearly appear. To prevent any accidental turning of the parts, the groove 4^e is formed with depressions 4^f whereby the co-acting parts are impositively locked against the overthrow movement.

As already stated, in Figs. 7 to 14, I have disclosed some of the various modifications of the construction. In view of the detailed explanation of one form of my invention, it is not regarded as necessary to explain in detail the parts of the modified forms thereof, except to mention the distinguishing features. In Figs. 7 and 8, for instance, the members have their discharge openings 5 and 6, respectively, at the side, in lieu of in the top; and the cylindrical portion of the outer member 3 is provided with an inwardly-extending annular flange 7 which is adapted to engage the annular groove 8 in the inner member 4, as shown in Fig. 8. In Fig. 9, instead of forming the inner member with an annular groove, it is provided with annular ribs 9 and 9^a adapted to engage in annular grooves 10 and 10^a formed on the inner face of the top portion of the outer member 3. Moreover, in lieu of the flared or conical extension on the outer member 2, I may provide depending arm or arms 11 formed with a finger piece 12, as shown in dotted lines in this Fig. 9. In Fig. 10, I have illustrated the closure as adapted for application to a receptacle for powder or other dry substances. In this instance, the cylindrical portion of the inner member is open at its top, this opening being covered by the top 13 of the outer member. The openings 13^a and 13^b are at the side. Moreover, in lieu of milling the finger-engaging portion of the outer member, I may provide the same with scallops, or the like, as shown in full lines. In other respects, this form of structure resembles more nearly that illustrated in Figs. 1 to 3. In Fig. 11, a somewhat different form than those heretofore described is revealed. In this instance, the discharge opening 14 of the inner member is elongated to provide a slot 14^b in which the limit stop 14^a is adapted to travel. In this way, the necessity for providing an additional slot or groove for said limit stop is eliminated. Moreover, the upper edge of the cylindrical

portion of the inner member is provided with an outwardly-extending flange 14^d which is adapted to engage in an annular groove 14^e in the outer member. In Fig. 12, the inner and outer members are illustrated as each formed with a plurality of openings or apertures 15 and 16. In Fig. 13 I have illustrated a form of receptacle which is especially adapted for oleaginous substances; and, in this instance, the outer and inner members are preferably elongated and tapered. The discharge openings may, of course, be at the side, instead of in the top, as shown, and there may be one or a plurality of such discharge openings; and, similarly, the co-acting member-holding flanges or grooves may be reversed and extend outwardly instead of inwardly, as here shown. Any finger-engaging surface may be provided in this form of the device, as will be readily understood. In Fig. 14, I have disclosed various forms of discharge openings which I may elect to employ, and in each and all of which, as will be seen, at least one flat surface will be formed on the bristle-engaging portion of the contents of the receptacle when it is discharged therefrom.

While I have herein described my invention in detail, and illustrated several modifications thereof, it will be understood that the same is capable of a still wider range of modification; and, moreover, that I do not herein intend to limit myself to the details revealed except in so far as such details may be specified in the claims.

Having thus fully described my invention, its construction and mode of operation, what I claim and desire to secure by Letters Patent is:

1. A closure for receptacles having in combination, an inner member, an outer member comprising an encompassing portion in operative engagement with said inner

member, and a member-actuating portion extending outwardly from the encompassing portion and into operative relation with the outer surface of the sides of the receptacle and occupying a plane different from that of the encompassing portion, the members being provided with openings adapted to be brought into and out of register, and means for holding the members in rotative operative relation.

2. A closure for receptacles having in combination, an inner member provided with an opening; a conical extension on its lower portion adapted to be joined to a receptacle; an outer member provided with an opening encompassing said inner member and adapted to rotate thereon; means for securing the members permanently in rotative relation; means for limiting the rotation of the members; and an actuating extension carried by the outer member and extended at an angle therefrom into proximate relation with the outer surface of the sides of the receptacle.

3. A receptacle in combination with a closure therefor, comprising an inner member, an outer member comprising an encompassing portion in operative engagement with said inner member, a member-actuating portion extending from the encompassing portion into operative relation with the outer surface of the sides of the receptacle, the members being provided with openings adapted to be brought into and out of register, and means for rotatively holding the members in operative relation.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK A. KANE.

Witnesses:

JAMES ATKINS,
B. P. FINIGAN.