COMBINED DISPENSING AND APPLYING DEVICE

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My invention relates to combined dispensing and applying devices. It has among its objects to provide an improved device adapted to dispense and apply material contained therein. A further object of my invention is to provide such an improved device of an improved construction adapted to be held in the hand during use and whereby it is made possible to spread or apply the material in a new and effective manner with the dispensing device and while very conveniently controlling the flow of dispensed material as desired. A still further object is to provide an improved device including improved material containing means adapted to be grasped in the hand during use and flexed to discharge the material therefrom, and also including improved closure means controlled by the flexing means and controlling the discharge of the material, while also having improved means for applying the discharged material as desired. These and other objects and advantages of my improved construction will, however, hereinafter more fully appear.

In the accompanying drawing I have shown for purposes of illustration several embodiments which my invention may assume in practice.

In the drawing—

Figure 1 is a perspective view of one form of the same in use in dispensing and applying liquid shoe dressing;

Fig. 2 is a detail vertical sectional view of the lower or dispensing end of the device shown in Figure 1;

Fig. 3 is a view similar to Figure 2, but at right angles thereto;

Fig. 4 is a plan view of the dispensing end of the device;

Fig. 5 is a sectional view on line 5—5 of Figure 4;

Fig. 6 is a view similar to Figure 3 showing a modified construction;

Fig. 7 is a side elevation partially in section, of a further modified construction;

Fig. 8 is a detail sectional view of the dispensing end of the construction of the structure shown in Figure 7;

Fig. 9 is a vertical sectional view of a still further modified construction;

Fig. 10 is a bottom plan view of the construction shown in Figure 9, and

Fig. 11 is a detail bottom plan view of a further modified construction.

Referring first to the form of my invention shown in Figures 1 to 6, it will be noted that I have therein shown the device as including an improved container portion 1 adapted to be grasped in the hand and flexed as desired, together with an improved combined closure and applying member 2 suitably operatively connected to the container 1 by improved connecting means 3; the several elements being of improved construction and cooperating to produce an improved device as hereinafter more fully described.

The container 1 is provided with a material reservoir or chamber 4, and is adapted to function not only as a container, but also as a grasping portion adapted to be held in the fingers or hand during use and flexed to effect a controlled discharge through the closure 2. While not limited to such shape, herein the container 1 is substantially cylindrical in shape. Also, it is formed of a suitable resilient material adapted to form a grasping portion while also permitting flexing, as shown in Figure 1, by pressure on its sides, and to spring back into its original form, such, for example, as transparent "Celluloid" or other available equivalent material. If desired, the container may also be made of light metal having a suitable resilient side wall or walls, but the use of a transparent material is preferred since the latter also enables the user to determine at any time the amount of material in the container. Here note also that the container is closed at one end and open at the other end, and provided with a threaded portion 5 on its open end upon which the connecting means 3 is adapted to be threaded in order to connect the closure 2 over the open or dispensing end of the container which is the lower end of the same when in use.

Cooperating with the improved container 1 is my improved closure 2, which includes improved outlet means adapted to be controlled by the flexing of the container 1 as described, and is also provided with improved material distributing or applying means. This closure 2 is in the form of a substantially cylindrical piece of a suitable soft and flexible material. Herein, while not limited thereto, the same is shown as formed from a cylindrical blank of non-absorbent sponge rubber, i.e. free from intercommunicating cells and preferably rather dense and close grained and having small cells minimizing the tendency to retain material in the surface cut cells and particularly those on the applying surface thereof hereafter mentioned, as I find such sponge rubber is well adapted to my purposes. As shown, the member 2 is divided into inner and outer portions 6 and 7, each of cylindrical form and of substantially the same thickness and shape at
their peripheries, and these portions are formed by shallow slitting the side wall of the cylindrical blank peripherally as indicated at 8. Further, the inner portion 1 is preferably provided with a slightly concave inner face 9, adapted to be directed in the container 1 as shown in Figs. 2 and 3, while the outer pad portion 6 is preferably provided with a slightly convex surface 10 adapted to form an effective distributing or applying surface capable of evenly and smoothly spreading the material. Attention further is directed to the fact that an axial opening 15 extends from the lowest point on the concave surface 8 on the portion 7 toward the concave surface 10 on the portion 6, the opening herein being in the form of a substantially round chamber 11 which extends down through substantially two-thirds of the combined portions 6 and 7. At its lower end, this chamber 11 also communicates with a knife cut or slit 12 which extends through the remainder of the portion 6 to the surface 10 thereon and is normally effectively closed due to the resiliency of the sponge rubber.

The connecting means herein, preferably is in the form of a sleeve of molded composition such as Bakelite or the like, although metal may be used, and is also provided with threads to adapt it to be threaded on the threaded portion 5. It is also preferably provided with an inwardly extending peripheral bottom flange 13 adapted to be received in the slit 8. Thus, when the portion 7 is compressed and disposed within the member 3 as shown in Figures 2 and 3, the two members 2 and 3 are securely connected together while being readily connected or separated by simply pressing the member 2 axially into or through the axial opening in the member 3. Also, it will be noted that this construction makes it possible for the threaded end 5 on the container 1 to be screwed in between the enclosed periphery of the portion 7 and the inner threaded wall of the member 3 into abutment with flange 13 to connect the parts in the assembled relation shown in Figure 2, while obviously permitting removal of the container 1 for refilling by a reverse rotation of one relative to the other.

In the use of my improved construction, when the container 1 is held in the hand, as, for example, shown in Figure 1, it is possible for the shoe cleansing material therein, usually of slow flowing viscous character, to be discharged as desired through the normally closed slit 12, by merely flexing the side wall of the container 1 with the fingers or thumb. More particularly, the slit 12 will permit the passage therethrough of an amount of material proportionate to the flexing pressure exerted on the wall of the container 1, and the discharge of the material will stop automatically when the pressure on the wall is relieved, the pressure being on the material in the chamber 4 then being relieved and the wall due to its resiliency then also flexing out again into its normal cylindrical form. Further, it is found that except when thus opened, the slit 12 provides a very effective closure preventing the leakage of material therethrough as a result of the resiliency of the sponge rubber and its normal tendency to close the slit. Also as the material, for example, shoe dressing, passes out through the slit 12, the convex surface 10 of the sponge rubber provides a very effective distributing or applying means for the discharged material, adapted to distribute the latter smoothly as the surface 10 is rubbed over the surface to be treated, as for example, the shoe illustrated in Figure 1. More particularly, the small cut cells on the applying surface tend to retain the desired minimum amount of liquid dressing, and provide a soft and effective, yet long wearing, spreading or applying surface which will smoothly distribute the material and will not mar the shoe surface, while the internal cells, being non-intercommunicating, will prevent absorption of the dressing and thereby effectively prevent either seepage through the member 2 during spreading of the dressing and subsequent rubbing or objectionable hardening of the surface 10 thereof when not in use.

Attention further is directed to the form of my invention shown in Figure 6, wherein improved cooperating distributing and applying means are provided which are especially adapted to use to provide further control of the flow when the device is used with a relatively thin fluid, such as, for example, any usual fluid used to clean fabrics, clothes or the like. These means herein are in the form of a suitable absorbent and continuous bottom cover 14, preferably formed of cloth such as cotton, and herein in the form of a hood or cap having a suitable draw string, not shown, and adapted to underlie the surface 10 and enclose the portion 6 of the member 6, and be provided with its draw string disposed when tightened within the slit 8. As a result of the use of this hood, it will be evident that the material passing out through the slit 12 will be further controlled and distributed in such manner as thereby to minimize either difficulty or waste due to careless or too severe flexing of the container 1. The continuous cloth surface provided under the surface 10 also makes it possible for a cloth-to-cloth rubbing effect to be obtained, such as is desired when cleaning fabrics or clothes or removing spots or the like. With such an additional controlling fabric disposed over the slit 12 and surface 10, it is also possible to use the device very effectively as a moistener for envelope flaps or the like. Further, the use of such a removable cloth rubbing surface also permits the rubber surface to be changed when soiled, or, there being only necessary to press back the portion 6 adjacent the slit 8 sufficiently to permit release of the draw string and the substitution of another clean hood.

In Figure 7, I have illustrated a further form of my invention which is especially adapted for use in a larger form for polishing windows, windshields, furniture, tiles, or the like. In this construction, a cleansing material containing chamber 15 having walls 15' is formed in a like sponge rubber member 16, and the bottom of the chamber is provided with a concave surface 17 and an axial more shallow opening 18 communicating with a slit 19 corresponding to that herebefore described. Further, in this construction, the outer face of the wall 15' of the chamber 15 carries a sleeve 20 formed of suitable material such as that used for the member 3, and having a flange 21 adapted to be received in a suitable corresponding annular opening in the outer wall of the chamber. Also an annular flange 22 is provided on the chamber wall 15' which is adapted to extend over the flange 21. An annular threaded portion 23 and adjacent annular abutment 24 are also preferably provided on the sleeve 20 to receive a threaded cover 25 preferably formed of like material to the sleeve 20 and having a threaded portion engaging the threaded portion 23 and also having a shoulder 26 adapted to compress the rubber flange 22 between the portion 25 and the flange 75.
Further, it will be understood that in this construction, I may also use, if desired, the removable cloth 14 heretofore described, the hood being connected over the reduced portion around the base of the bulb 32. When such an external rubbering surface of cloth is provided, it is also found possible if desired to reduce the thickness of the portion 35, as for example, by making both portions 32 and 35 of ordinary rubber, and making the portion 35 substantially thinner, although such a construction is not preferred.

In Figure 11, I have also illustrated a modified construction which may be used in connection with the constructions shown in Figures 16 and 9, if desired. Here, it will be noted that instead of having the surface around the bottom opening in the cut or slit 12 formed of sponge rubber, I Vulcanize the outer surface of the adjacent area as at 37 to form a shallow smooth rubber area around the slit, while leaving the remainder of the bottom distributing or applying surface of sponge rubber. In practice, however, this construction is not preferred although it may be used under certain conditions. As a result of my improved construction, it is made possible to obtain a very effective manner of dispensing and applying device. The action of the normally closed cut or slit is such as to prevent the escape of the material from the container during ordinary rubbing, while the sponge rubber effectually prevents seepage therethrough or the delivery of the material through any other path than the cut or slit, and also eliminates absorption and drying or caking such as would otherwise result from the impregnation of porous or absorbent materials by certain dispensed compositions. Also, my improved construction makes it possible for the user to effect any desired flow through the slit at any time by the application of varied pressure to the flexing portion to effect a controlled discharge through this slit. Further, when the material emerges through the slit it is also possible to distribute or apply it very effectively by merely rubbing with the applying surface around the slit. In practice, it will also be understood that the surfaces other than this bottom or applying surface, may be suitably smooth surfaced, or coated or glazed, but that the applying surface is left rough in order to provide an effective cleaning, roughing, or polishing face, except when the cloth 14 is used, or when abrasive is carried on the applying surface, when the latter may also be smooth if desired. Attention is further directed to the fact that the construction in its various forms is also adapted to be very inexpensively produced, while having long wearing qualities. These and other advantages will, however, be apparent to those skilled in the art.

While I have in this application specifically described certain forms which my invention may assume in practice, it will be understood that these forms are chosen for purposes of illustration and that the invention may be modified and embodied in other forms without departing from its spirit or the scope of the appended claims.

What I claim as new and desire to secure by Letters Patent is:

1. A combined dispensing and applying device having an elongated chamber therein for material to be dispensed, one end of said chamber being open, and an applying pad having an interior portion formed of non-absorbent sponge rubber material of substantial thickness extending a substantial distance into, attached to, and
5 closing said open end of said chamber, said pad also having a resilient sponge rubber exterior portion having normally closed slit forming outlet means therein normally maintained closed in all directions of movement of said device, said chamber being formed with resilient side walls compressible to open said slit, said exterior sponge rubber portion having a roughened rubbing surface formed around the outlet of said slit, and said device being generally tubular and having said chamber, pad and outlet means substantially coaxially disposed.

2. A combined dispensing and applying device having an elongated chamber therein for material to be dispensed, one end of said chamber being open, and an applying pad having an interior portion formed of non-absorbent sponge rubber having non-communicating cells and extending into, attached to, and closing one end of said chamber, and said pad also having a resilient sponge rubber exterior portion having a bottom surface comprising cut cells and having a normally closed slit forming outlet means communicating with said chamber and extending through said surface and normally maintained closed in all directions of movement of said device, said chamber being formed with resilient side walls compressible to open said slit.

3. A combined dispensing and applying device having a compressible container portion, open at one end, for material to be dispensed, and a closure member insertable in and closing the open end thereof having a resilient, non-absorbent sponge rubber applying portion of substantial thickness having non-communicating cells and a material spreading and smoothing surface having cut sponge rubber cells thereon and having extending through said surface normally closed outlet slit means through which material in said container portion is dispensed upon compressing said container portion for spreading by said surface.

4. In a combined dispensing and applying device, a resilient container member having a bottom aperture, and a resilient closure member closing said aperture and having normally closed slit means opening into the interior of said container member and being upon flexing and closing upon releasing the latter, said resilient closure member carrying a bottom material spreading and smoothing portion of substantial thickness having a roughened material applying face and said closure member including a transverse portion of non-absorbent sponge rubber comprising non-communicating cells and located between the upper and lower ends of said slit means and through which said material in said container is delivered by said slit means.

5. In a combined liquid dispensing and applying device, an elongated semi-rigid tube having adjacent one end resilient side walls adapted to be flexed between the fingers and also having at said end a bottom aperture, and a closure member having a resilient closure portion received in and closing said aperture and comprising sponge rubber having non-communicating cells and also having a bottom generally disc shaped resilient pad portion of substantial thickness also comprising sponge rubber having non-communicating cells and having a bottom rubbing surface and normally closed slit means surrounded by said rubbing surface and extending through said pad portion and opening through said closure portion into the interior of said tube and normally maintained closed by the resiliency of said pad portion in all bodily movements of said device during rubbing by said surface and opening and closing only upon flexing and releasing said resilient side walls of said tube.

6. In a dispensing device, a generally tubular container having a resilient lower open end portion having an annular and resilient bottom dispensing portion of sponge rubber closing said open end of said container and having a bottom rubbing surface of cut cells and also having an axially disposed normally open passage leading part way through said bottom portion, and a slit communicating with the bottom of said axial passage and leading to said rubbing surface and of such depth as normally to be closed by the resiliency of the material.

7. In a combined dispensing and applying device, a compressible container which is open at the bottom and having resilient non-expansible side walls and a chamber therein for material to be dispensed, and a bottom stopper and closure member attached to said side walls at the open bottom of said chamber comprising a body of sponge rubber having non-communicating cells and larger than said bottom opening and adapted to be compressed upon insertion therein and when therein normally held in compression by said container and having slit means extending through and terminating in the exposed surface of said sponge rubber and normally closed by the resiliency of said sponge rubber when said member is so normally compressed and openable when said resilient walls of said container are manually compressed.

8. In a dispensing and applying device, an applying portion having a slit therein adapted to dispense material through said portion, said applying portion being formed of non-absorbent sponge rubber having non-communicating cells and normally closing said slit therein by its resilience, and also having a rubbing surface transversely located relative to said slit and supplied through said slit and formed of exposed cut cells through which said slit extends.

9. In an applicator, a resilient stopper member having an upstanding annular portion for closing the open end of a receptacle and having an axial opening, and a generally horizontally disposed bottom disk shaped pad thereon and having slit forming outlet means therein receiving material through said opening and adapted to dispense material through said pad, said pad being formed of non-absorbent resilient sponge rubber having non-communicating cells normally closing the slit therein and having a roughened bottom material applying face.

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