

April 9, 1940.

J. A. BENDER
DISPENSING DEVICE
Filed Sept. 21, 1937

2,196,379

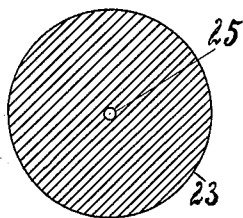


FIG. IV.

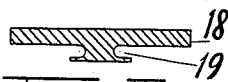


FIG. III.

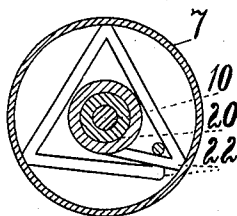


FIG. II.

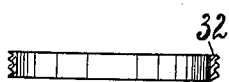


FIG. VIII.

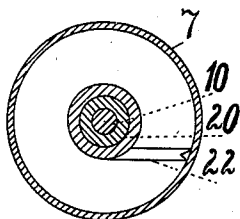


FIG. XII.

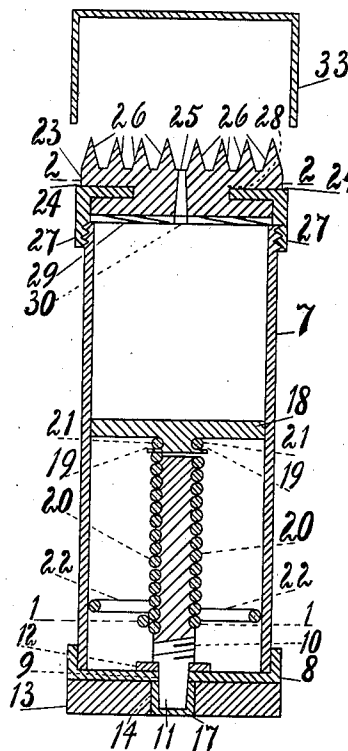


FIG. I.

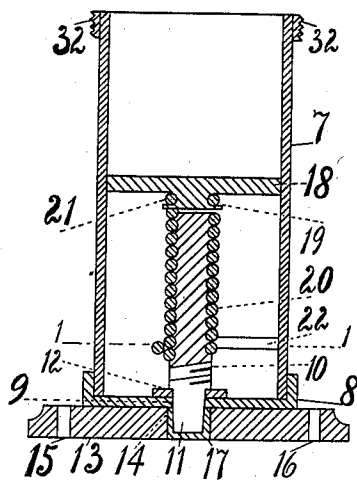


FIG. XI.

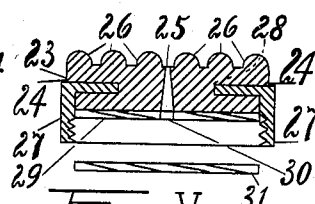


FIG. V.

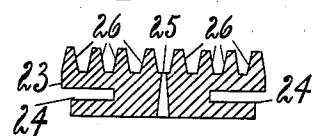


FIG. VI.

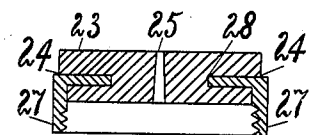


FIG. VII.

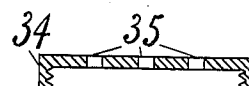


FIG. IX.

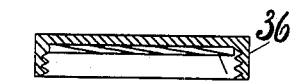


FIG. X.

Jacob Armin Bender

UNITED STATES PATENT OFFICE

2,196,379

DISPENSING DEVICE

Jacob Armin Bender, North Bergen, N. J.

Application September 21, 1937, Serial No. 164,863

3 Claims. (Cl. 221-79)

This invention relates to devices for dispensing soft, semi-fluid as well as granulated materials, such as cosmetic preparations, facial cream, salve, soap, powders, etc., onto a surface, in many instances, and more especially to a dispensing device for applying cosmetic preparations to the skin.

A major object of my invention is to produce a dispensing device wherein the material to be dispensed may be kept, conveniently disposed of and readily discharged at will by a simple mechanism.

Another major object of my invention is to produce a device of this character which will quickly dispense a desired quantity of material, clean and fresh, free of accumulated particles of dirt and germs.

Another major object of my invention is to produce a device of this character wherein the operating mechanism is enclosed so as not to interfere with normal operation and can be maintained in sanitary condition.

Another major object of my invention is to produce a device of this character which is designed of a minimum number of component parts which will permit various combinations wherein the parts can be quickly assembled and replaced with ease and facility so that the device may be employed in a wide range of uses.

Another major object of my invention is to produce a number of interchangeable massage brushes, elastic pads, fittings, perforated caps, closures, etc., which can be quickly attached to the dispensing device, firmly held in place, removed and renewed with the greatest of ease.

Another object of the invention is to produce a device of this character which is extremely simple in construction, easy to operate, neat in appearance, durable, efficient, convenient in its use and inexpensive to manufacture.

With these and other objects and advantages in view, the invention consists in the features of construction, combinations and arrangement of parts as will be more fully described in detail hereinafter, illustrated in the accompanying drawing, which discloses the preferred embodiment of my invention.

Now referring to the drawing:

Figure 1 is a longitudinal sectional view through a dispensing device embodying a preferred form of the invention.

Figure 2 is a transverse sectional view through the dispensing device taken on the line 1-1 of Fig. 1, showing a preferred arrangement of the end portion and the loop of the connecting piece.

Figure 3 is a cross-sectional view of a preferred form of a one-piece piston.

Figure 4 is a transverse sectional view through the massage brush taken on the line 2-2 of Fig. 1.

Figure 5 is a longitudinal cross-section of another preferred example of an interchangeable massage brush, fitting, perforated washer, and a full face washer, showing the full face washer in removed position.

Figure 6 is a longitudinal cross-sectional view of another preferred example of an interchangeable massage brush when detached, showing the circumferential groove and another preferred shape of teeth.

Figure 7 is a longitudinal cross-sectional view of a preferred form of an interchangeable elastic pad held in the fitting.

Figure 8 is a cross-sectional view of a preferred form of a connecting ring for attachments to the ends of the tubular member, chiefly for tubing of an unthreadable nature.

Figure 9 is a cross-sectional view of a preferred form of an interchangeable perforated cap, a full face washer is shown in removed position so that the perforated cap may be employed for dispensing purposes, the perforated cap serves as a closure when the full face washer is replaced into the cap.

Figure 10 is a cross-sectional view of an interchangeable closure and a liner.

Figure 11 is a longitudinal sectional view of another preferred form of a modified construction of my device.

Figure 12 is a transverse sectional view taken on the line 1-1 of Fig. 11, showing another preferred but simplified form of the loop of the connecting member.

Throughout the several views in the drawing forming a part of this specification like numerals designate like parts.

Referring to the drawing in detail, the numeral 7 designates a tubular member of suitable shape in which the material to be dispensed is placed. A retainer 8 is formed with a suitable opening 9. The retainer 8 is preferably detachably secured, forced-on or cemented to one end of the tubular member 7. A screw threaded part 10 has preferably a reduced and tapered end to provide a joining portion 11. The joining portion 11 carries a spring washer 12 and is rotatably mounted in the retainer 8. The spring washer 12 is intended to take up back slack and to retain a slight friction. A knurled handle part 13 is formed with an opening 14, and holes

15 and 16, Fig. 11. The opening 14 in the knurled handle part 13 engages the joining portion 11 of the screw threaded part 10. The knurled part of the handle is detachably secured to the joining portion 11 of the screw threaded part 10 by a snap-on or forced-on fastening member 17.

The holes 15 and 16 are suitably arranged in the handle of a mountable type of my device, when the handle part 13 serves as a base, likewise as shown in Fig. 11, so that the device can be conveniently mounted on to a work bench, wall, cabinet door, or other suitable place.

A one-piece piston 18 is preferably formed with a circumferential or part-circumferential groove 19. The one-piece piston 18 permits slidable movement in the tubular member 7, the leading edge and side of said one-piece piston makes a good fit with the inner surface of the tubular member.

A connecting piece or sleeve 20 is preferably formed of a single strand of wire suitably coiled and engages and cooperates with the screw threaded part 10. An eye 21 is formed at one end, being suitably shaped to snap into the groove 19 so that the one-piece piston 18 may be quickly and securely attached to the connecting piece 20. A spring arm or loop 22 at the other end provides means to prevent rotation of the connecting piece and may be of any approved shape. The spring arm or loop 22 is tensioned against the inner wall of the tubular member and provides an anchor like grip but permits sliding movement longitudinally of the tubular member when pressure is applied. In order to make a standard rigid structure of the coiled type of the connecting piece, the coiled portion may be prepared for a solder bath. During the course of soldering care should be taken so as not to interfere with the normal condition of the eye 21 and the spring arm or loop 22.

A massage brush or applicator 23 is formed with a circumferential groove 24. The massage brush or applicator 23 is preferably produced of resilient materials, such as rubber, fabric, etc., and has an axially disposed flap valve like dispensing outlet 25. The outer portion of the massage brush is formed with a plurality of teeth 26 which may be of suitable shape and stiffness. Preferred shapes of teeth of interchangeable massage brushes are shown in the drawing. A fitting 27 is formed with an aperture 28 and detachably engages the groove 24 of the massage brush 23. The fitting 27 is threaded to the opposite end of the tubular member from the retainer 8. The massage brush is firmly held in place and its dispensing outlet 25 communicates with the interior of the tubular member. A suitable liner 29 protects the massage brush against discoloration. The liner 29 has an opening 30 which communicates with the dispensing outlet 25. The tubular member may be sealed by a suitable full face liner 31, shown in Figs. 5, 9, 10.

An externally threaded connecting ring 32, shown in Figs. 8, 11, serves as a convenient connecting means in order the tubular member is to be produced of unthreadable materials, such as bakelized paper, fibre, plastics, etc. The connecting ring 32 may be forced on or cemented on to both ends of the tube.

The rear end portion of the massage brush or applicator is enclosed and confined in the fitting, and the enlarged outer free end portion is protected against accumulation of germs, particles of dirt or foreign matter by a cover or cap 33 posi-

tioned upon the prepared peripheral portion of the fitting 27 when the device is not in use.

An interchangeable dispensing cap member 34 is formed with discharge openings 35 which is intended for special dispensing purposes. The discharge openings 35 may be closed by the full face liner 31 so that the dispensing cap member 34 may be utilized as a closure. An interchangeable closure 36 may be employed when material is to be kept in the device for any considerable period of time.

These attachments increase utility of the dispensing device. The component parts may be readily disassembled and easily reassembled.

The filling of the tubular member 7 is accomplished on the removal of the fitting 27 which carries the massage brush or applicator 23 and the liner 29. After the one-piece piston 18 is brought to desired position, then the tubular member may be filled with facial cream, powder, etc. In this instance the dispensing device may be successfully operated after the fitting 27, the massage brush or applicator 23 and the liner 29 are replaced.

In operation, the tubular member 7 and the handle 13 are relatively rotated in contrary direction, this causes the one-piece piston 18 to move forward. Thus, a desired quantity of facial cream is forced through the outlet 25 onto the outer portion of the massage brush or applicator 23 ready for application.

It is to be understood that the form of my invention herewith shown and described is to be taken as a preferred example of the same and that various changes relative to the material, size, shape, combination and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. A dispensing device comprising a tubular member, a retainer detachably secured preferably forced on to one end of said tubular member, said retainer being formed with a suitable opening, a screw threaded shaft being formed with a joining portion and rotatably mounted in said retainer, a spring washer positioned upon said joining portion so as to retain a slight friction, a knurled handle being removably united with said joining portion of said screw threaded shaft by a snap-on or forced-on fastening member, a one-piece piston being formed with a circumferential groove the piston being fitted and movable in said tubular member, a connecting piece having a resilient eye clamped to said one-piece piston, said connecting piece spirally engaging said screw threaded shaft, a suitably shaped spring arm or loop being formed at the other end of said connecting piece affording a means to hold said connecting piece against rotation when said handle is rotated to move said connecting piece and said one-piece piston in said tubular member.

2. A dispensing device comprising a tubular member, a retainer being detachably secured to one end of said tubular member, said retainer being formed with a suitable opening, a screw threaded shaft being formed with a joining portion and rotatably mounted in said retainer, a spring washer being positioned upon said joining portion so as to retain a slight friction, an enlarged handle being removably connected with said joining portion of said screw threaded shaft by a snap-on or forced-on fastening member, means in said enlarged handle for mounting the device on to a surface, a one-piece piston being

formed with a circumferential groove and the piston being slidably fitted in said tubular member, a connecting piece having a resilient eye being clamped to said one-piece piston, said connecting piece spirally engaging said screw threaded shaft, means active upon the inner wall of said tubular member and said connecting piece to hold said connecting piece against rotation when said enlarged handle is mounted and said tubular member being rotated to move said connecting piece and said one-piece piston in said tubular member.

3. In a dispensing device a tubular member, a retainer being detachably secured to one end of said tubular member, said retainer being formed with a suitable opening, a screw threaded shaft being formed with a joining portion and rotatably mounted in said retainer, a spring washer being positioned upon said joining portion so as to retain a slight friction, an enlarged handle being

removably connected with said joining portion of said screw threaded shaft by a snap-on or forced-on fastener, means in said enlarged handle for mounting the device on to a surface, a one-piece piston being formed with a circumferential groove and the piston being slidably fitted in said tubular member, a connecting piece having a resilient eye being clamped to said one-piece piston, said connecting piece spirally engaging said screw threaded shaft, means active upon said connecting piece to hold same against rotation when said enlarged handle is mounted and said tubular member is rotated to move said connecting piece and said one-piece piston in said tubular member, and a connecting member preferably being forced or cemented on to the end of said tubular member thus facilitating the use of unthreadable tubing for desired connections.

JACOB ARMIN BENDER. 20