Sept. 20, 1932. F. W. ELLYSON 1,878,833

TUBE RECEPTACLE WITH AUTOMATIC CLOSURE

Filed April 9, 1929

FIG. I.

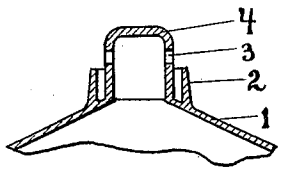


FIG. II.

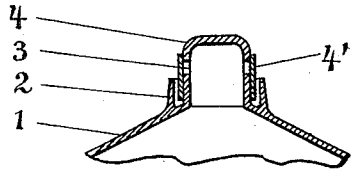


FIG. III.

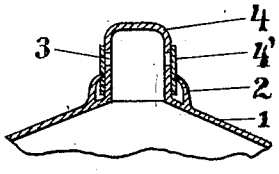
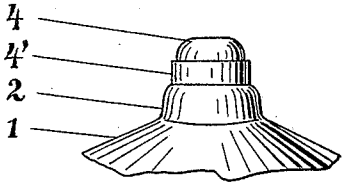


FIG. IV.



Inventor:
Frederick W. Ellyson
by James Allen
Attorney.

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UNITED STATES PATENT OFFICE

FREDERICH WASHINGTON ELLYSON, OF ST. POLTEN, AUSTRIA

TUBE RECEPTACLE WITH AUTOMATIC CLOSURE

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The present invention relates to an automatically closing tube receptacle which is both simpler in its construction and cheaper in manufacture than the already known tube receptacles with automatic closure and at the same time is equally reliable in action as the ordinary tubes with screw cover. In the tube receptacle according to the present invention a pressure on the tube causes the contents to issue from the outlet, which may be of any desired form, either round or elongated, and may be situated either at the apex or the side of the tube head, in the direction of said outlet and at no other point but at said outlet.

The closure member of the tube according to the present invention consists of a simple elastic sleeve valve or of a cap, spring-held and movably arranged on the neck of the tube, said member being so mounted or guided that a pressure on the tube will, without further manipulation, force the contents from the outlet, and on cessation of this pressure the tube will be immediately and automatically closed or sealed; further, a deviation of the outflowing contents from the desired and prescribed direction of flow is entirely prevented. If, for instance, the closure member consists of an elastic sleeve valve covering the outlet, this confinement of the direction of flow may be attained by a constriction of said sleeve behind or below the outlet, said constriction at the same time serving to keep the sleeve in place. In the case of an elastic sleeve the constriction can be made either internally or externally; internally, for instance, by a sharp edged projection or thickening of the tube neck, thus stretching the sleeve at this point; or externally, by a tie or bind, which may be created in various ways.

The accompanying drawing illustrates several forms of a tube receptacle with automatic closure according to the present invention.

In the form shown in vertical section in Figs. I, II and III and in a side view in Fig. IV, the tube neck 4 is closed at the top and provided with two or more lateral outlets 3. A sleeve 4′ of india rubber or other suitable resilient material serves as automatic closure member for the outlet holes 3. The sleeve 4′ is held in place by a collar or claws 2, which may advantageously be made in one piece with the body of the tube; after the sleeve 4′ has been pushed over the neck of the tube, the sharp rim of said collar or ends of said claws are bent inwards so as to press the sleeve against the tube neck immediately below or behind the outlet holes 3, as shown in Fig. III; by this means the sleeve is secured in its position and at the same time the interstice between tube neck and sleeve made tight; thus, when the tube is pressed, the contents will flow out through the holes 3, pushing the elastic sleeve aside and thus issuing between neck top and sleeve, but will be prevented, by the constriction of the sleeve through collar 2, from flowing backwards between the lower part of the tube neck and the sleeve. After cessation of the pressure on the tube the elasticity of the sleeve will cause it to again automatically close the outlet.

In the case of tube receptacles, the contents of which would have a deleterious effect on india rubber, or vice versa, the india rubber sleeve may with advantage to coated internally with an indifferent material, such as tinfoil, cork, impregnated silk or the like; such insulating coating must, however, be so arranged that it will in no wise impede the elastic opening and closing action of the sleeve proper.

Having now described my invention in detail I set forth my claims as follows and what I claim as new is:

1. In a tube of the character described adapted for holding plastic material, a nozzle secured at one end of the tube provided with lateral apertures and having a closed end, a yieldable closure member positioned about said nozzle and fitting tightly thereon normally to close said lateral apertures, and means mounted on the tube at a point spaced outwardly from said nozzle and engaging said closure member whereby to hold said member upon the nozzle against longitudinal movement.

2. In a tube of the character described

adapted for holding plastic material, a laterally apertured nozzle secured at one end of the tube, a yieldable closure member positioned about said nozzle and fitting tightly thereon normally to close the lateral apertures, and a flange carried by the tube and surrounding the lower part of the nozzle and closure member, said flange having its upper edge bent into engagement with the closure member to grip and hold the same on the nozzle.

FREDERICH WASHINGTON ELLYSON.