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TEST TUBE CLOSURE, PARTICULARLY FOR BACTERIOLOGICAL PURPOSES

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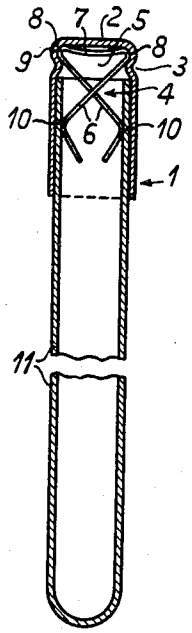

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TEST TUBE CLOSURE, PARTICULARLY FOR BACTERIOLOGICAL PURPOSES

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1 Claim. (Cl. 215—38)

The present invention relates to a closure of a test tube, particularly for bacteriological purposes. The novel closure is characterized by a closure cap and by at least one spring disposed therein for engaging the inner surface of the open end of the test tube when the cap is slipped thereon to thereby retain the cap on the test tube.

In the accompanying drawing a preferred embodiment of the invention is shown by way of a longitudinal section.

The closure shown in the drawing includes a closure cap 1 provided near its top or closed end 2 with an internal bead 3. A wire spring 4 disposed within the cap constitutes a loop 5 having a pair of arms 6 crossing each other. The central portion 7 of the wire loop is curved inwardly being laterally continued by protruding bent portions 8 which engage an internal annular groove 9 of the cap formed between the end 2 and the internal bead 3 thereof. The ends of the arms 6 of the wire spring are bent inwardly at 10.

When the cap 1 with the spring 4 inserted therein is slipped upon the open end of a test tube 11, the spring arms 6 which initially engage the inner surface of the cap 1 at 10 will be urged inwardly away from the walls of the cap 1 and will ride upon the internal walls of the test tube into the position shown in the drawing. Owing to the engagement of the wire spring with the internal surface of the test tube the cap 1 will be frictionally held in a position on the test tube in which the rim of the test tube abuts the internal bead 3 constituting an effective seal therewith reducing evaporation of any liquid contents of the test tube to a minimum. This advantage could not be obtained in the absence of the internal bead 3 because, in such event, the rim of the test tube would abut against the two curved portions 8 of the wire spring. Moreover, the internal bead 3 affords the advantage of bracing the spring arms 6 against the counterpressure exerted thereon by the wall of the test tube. As a result, the spring is less liable to relax.

Preferably the cap consists of thin sheet metal, e. g. sheet aluminum.

The novel closure affords such a seal of test tubes as is required for bacteriological purposes. Hence, it will no longer be necessary to close the test tubes by the conventional cotton plugs which must be discarded after use. The closure can be easily sterilized and is capable of repeated use.

The embodiment described hereinabove is capable of numerous modifications. Thus a plurality of spring leaves may be secured to the bottom of the cap although such structure for reason of the manufacture is not as advantageous as that described hereinabove with reference to the drawing.

Moreover the cap 1 may be provided with a small handle fixed to the center of the top 2 of the cap by a rivet. The internal head of the rivet would be accommodated by the curved central portion 7 of the spring 4.

While the invention has been described in connection with a preferred embodiment thereof, it will be understood that it is capable of further modifications, and this application is intended to cover any variations, uses, or adaptations of the invention following, in general, the principles of the invention and including such departures from the present disclosure as come within known or customary practice in the art to which the invention pertains, and as fall within the scope of the invention or the limits of the appended claim.

What I claim is:

A test tube closure comprising a cylindrical cap having an internal diameter substantially equal to the external diameter of a test tube so that the cap closely fits on a test tube, said cap having a longitudinal dimension greater than said diameter, an annular projection formed internally of said cap for limiting the downward movement of the cap onto the tube and sealing the top edge of the test tube, said projection being spaced from the top of said cap a sufficient distance to form a groove therebetween, a one-piece spring completely disposed in a vertical plane and having an intermediate portion and two downwardly depending legs, the joint portions connecting said intermediate portion and said legs being removably seated in said groove with said intermediate portion extending diametrically of said cap and being bowed under tension for resiliently retaining said joint portions in said groove, said legs being of such length that the spring is totally disposed within said cap, diametrically opposed portions of said legs being crossed so that upon deflection of said legs toward each other said joint portions are further forced into said groove whereby the cap may be used to lift the test tube even when full of liquid, the free ends of said legs being bent inwardly, and the upper wall of said projection engaging and limiting the movement of the upper ends of the legs whereby resistance to deformation of the spring is increased.

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