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K. C. HAMILTON

2,167,111

SPUTUM CUP

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Fig. 1.

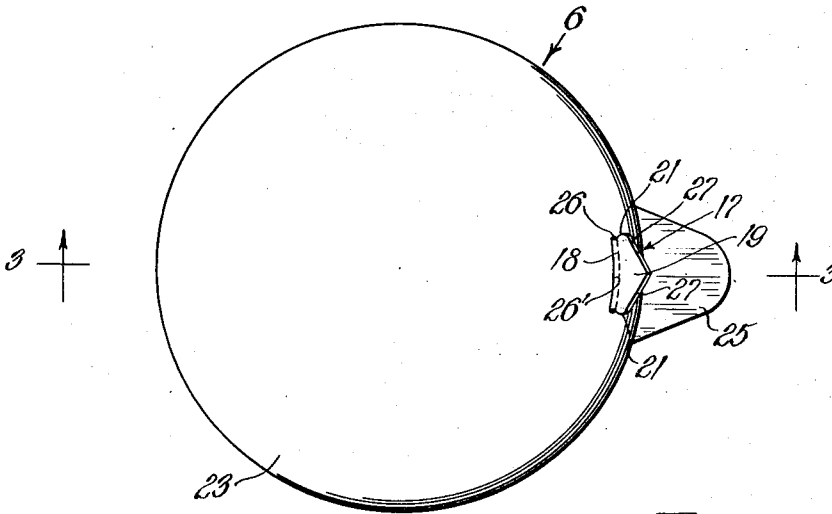


Fig. 2.

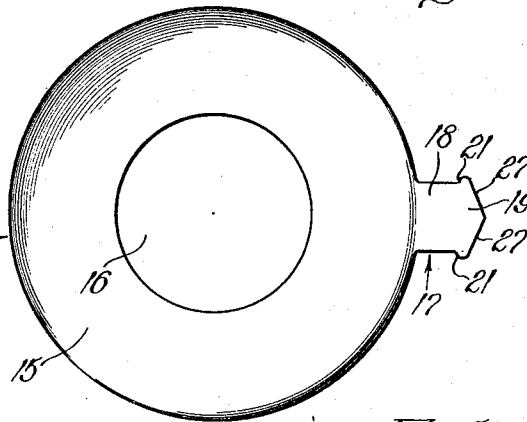


Fig. 4.

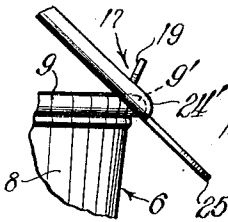


Fig. 3.

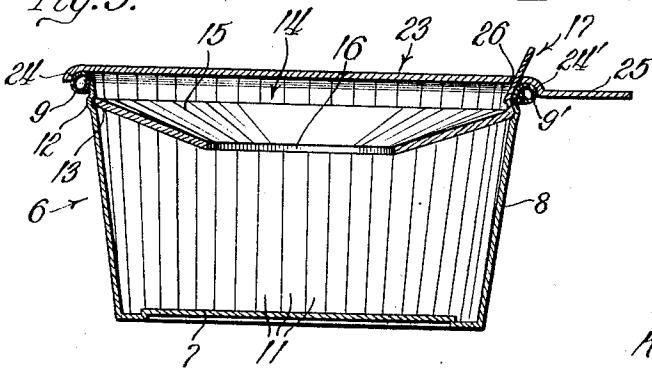
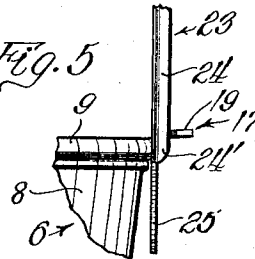


Fig. 5



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UNITED STATES PATENT OFFICE

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SPUTUM CUP

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3 Claims. (Cl. 4—271)

My invention relates generally to a sputum receptacle for receiving the sputum of invalids and persons having contagious diseases, colds and the like. More particularly, the invention has to do with a miniature cup which may conveniently be employed in hospitals, the sick-room, and when traveling, for the purpose described.

Broadly, the principal object of the present invention resides in forming a cup of the character described from paper-like material, suitably reinforced against radial deformation, and provided with a cover effective for completely closing the top of the cup.

More specifically, another object of the present invention resides in providing, in a cup and cover of the character described, novel means establishing a pivotal connection for opening and closing movements of the cover with respect to said cup.

Another object of the invention resides in providing, in a cup of the character described, novel retaining means associated with said cup and cover, and operable to maintain the pivotal connection between said cup and cover in operative engagement during the opening and closing movements of said cover.

Still another object of the invention resides in providing, in a cup of the character described, retaining means carried by said cup and operatively connected to said cover for the purpose described, said connection between said cover and cup being in the form of a limited lost-motion connection, whereby said cover will have translatory movement with respect to said retaining means during a portion of the movement of said cover.

A still further object of the invention resides in providing, in a cup of the character described, inherently resilient retaining means carried by said cup and operatively connected to said cover in the manner and for the purpose described, said retaining means having a normal position unaffected by said cover during a portion of the opening movement thereof, and being movable from such normal position by said cover during another portion of the opening movement thereof, whereby, when the pressure incident to cause opening movement of said cover is removed therefrom, the inherent resiliency of said retaining means will cause it to return to its normal position, and thereby return said cover to its closed position with respect to said cup.

Other objects and advantages of the invention reside in certain novel combinations and arrange-

ments of parts as will hereinafter more fully be set forth and claimed.

In describing my invention, reference is had to the accompanying drawing wherein I have illustrated the preferred physical embodiment thereof, and in which:

Figure 1 is a plan view of a sputum cup embodying the principles of the present invention;

Figure 2 is a plan view of a baffle for said cup, such baffle having formed integrally therewith the inherently resilient retaining means above referred to;

Figure 3 is a vertical sectional view through the cup of Figure 1, taken substantially along the plane of the line 3—3 thereof;

Figure 4 is a fragmentary elevational view of the cover and cup showing the relative position of the retaining means and the means establishing the pivotal connection between the cover and cup during the initial opening movement of said cover; and

Figure 5 is a view similar to Figure 4, showing the relative positions of the parts referred to in the description of such latter figure, when the cover is in fully opened position.

Referring now in detail to the drawing, cup 6 of the present invention is conveniently, though not necessarily, formed of paper. Such paper is preferably opaque, or more or less translucent, either waxed or unwaxed, and in any event waterproof. Also, paper known as dry waxed or wet waxed, bleached or unbleached may be employed.

The cup, conveniently formed by suitable dies from a single circular disk of material, comprises a bottom wall 7 and an upwardly and outwardly inclined vertical wall 8, the upper marginal edge of this latter wall being rolled outwardly to provide the annular bead 9. Preferably, wall 8 is radially folded to provide plaits 11. These plaits may be box plaits or the ordinary plaits shown and, indeed, in the broader aspects of my invention, the cup may be formed without plaiting. However, the plaits are of importance in the matter of simplicity of manufacture and also give strength and rigidity to the cup. That is, the plaits provide reinforcing ribs of appreciable rigidity and resilience which, in conjunction with bead 9, render the cup self sustaining. In addition, the plaits resist radial deformation of the cup and serve, when the baffle hereinafter described is applied to the cup, to maintain proper operative engagement between certain cooperating elements of the baffle and cup. Immediately below bead 9, inclined side wall 8 of the cup is provided with an outwardly pressed annular bead

12 forming an inwardly directed channel 13 for the reception of baffle 14.

Baffle 14 is formed of relatively stiff paper, or some other such suitable material, and, as shown, is of inverted substantially frusto-conical shape, having the upwardly and outwardly inclined wall 15 and the substantially centrally disposed opening 16. Preferably, baffle 14 is of a diameter closely approximating the internal diameter of wall 8 adjacent bead 12, so that it is necessary to force the baffle into the cup under pressure until such time as the peripheral edge of the baffle snaps into channel 13. On its outer periphery, baffle 14 is provided with an integrally formed and outwardly extending horizontally disposed tab 17. Such tab comprises a shank 18 of relatively short length and narrow width, the tab terminating in a slightly enlarged head 19 forming shoulders 21. Prior to forcing the baffle into the cup, the tab may be bent to the upwardly and slightly outwardly inclined position shown, or it may so be bent by the operation of forcing the baffle into the cup. As shown, tab 17 projects for a short distance above the cup for cooperation with a cover member 23.

Cover member 23 is also preferably formed of relatively stiff paper and is provided with an outwardly and downwardly rolled peripheral flange 24 for the reception of bead 9. Such flange has a relatively snug, but not especially tight fit, with the bead, the cover being thereby centered with respect to and secured to the cup. A horizontally disposed tab formed integrally with the peripheral edge of flange 24 extends radially outwardly of the cover and forms a handle 25. Adjacent handle 25, and immediately inwardly of flange 24, the cover is provided with a slot 26. This slot has a length and width only slightly greater than the width and thickness, respectively, of shank 18 of tab 17. However, the length of slot 26 is slightly less than the distance measured transversely across head 19 between the outer edges of shoulders 21. Preferably, head 19 of tab 17 is spear-shaped, being provided with the inclined edges 27. The tab 17 is engaged in slot 26 by disposing cover 23 in a plane substantially parallel to the plane of one of the inclined edges 27 and passing such edge of head 19 through the slot. The cover may then be moved transversely with respect to tab 17 to engage beneath the shoulder 21 which has passed through the slot, after which the cover may then be rotated downwardly, with respect to tab 17 and, by a slight pressure, the slot be made to pass over the outer edge of the opposite shoulder. Cover 23 is adapted to have translational movement with respect to shank 18 and, as the length of slot 26 is less than the distance between the outer edges of shoulders 21, such movement of the cover is limited by the shoulders 21 engaging over the portions of the cover at opposite ends of the slot.

The cover may be moved from its closed position to its open position with respect to the cup by applying downward pressure upon handle 25. During initial opening movement of the cover, the portion 24' of flange 24 adjacent handle 25, will pivot about portion 9' of bead 9, until such time as the cover reaches a position where, as shown in Figure 4, it is disposed at an angle of substantially 45° with respect to the cup. At such point, the cover, which has had the front slot defining edge 26' merely riding along shank 18 of tab 17 by reason of slot 26, contacts shoulders 21 of the tab. Upon continued downward movement of the handle, flange 24 contin-

ues to pivot about bead 9 but, during this latter movement, the engagement of cover 23 with shoulders 21 of the tab will serve to bend such tab outwardly and downwardly about bead 9. When the cover is in fully opened position, the tab 17 will then be disposed in the position shown in Figure 5 of the drawing. Tab 17 has a certain amount of inherent resiliency, and has a tendency to return to its normal substantially vertical position when bent therefrom to a position such as that shown in Figure 5. Therefore, when the cover is in its fully opened position and pressure is released from handle 25, the tab will return to its normal position, and thereby automatically move cover 23 to its normally closed position.

While a preferred embodiment of my invention has been illustrated and described, by way of example, it will be obvious that changes may be made therein within the spirit and scope of the invention. I do not, therefore, limit my invention to the precise form herein disclosed, except in so far as it may so be limited in the appended claims.

I claim:

1. In combination, a cup having an outwardly rolled peripheral bead substantially circular in cross-section, a cover having a depending peripheral flange shaped conformably to and engaging about said bead providing a pivotal connection for opening and closing movements of said cover, and an inherently resilient retaining member associated with said cover and cup and maintaining the pivotal portion of said bead and flange in operative engagement during the movements of said cover, said retaining member abutting said bead and having a portion bendable from a normal position over and in conformance with the curvature of said bead during the opening movement of said cover, whereby the inherent resiliency of said member will return it to its normal position and the cover to its closed position.

2. In combination, a cup having an outwardly rolled peripheral bead substantially circular in cross-section, a cover having a slot and provided with a peripheral flange engageable with said bead, a portion of said bead and flange establishing a pivotal connection for opening and closing movements of said cover, a baffle carried by said cup, and a substantially vertically disposed inherently resilient tab carried by said baffle and engaging in the slot in said cover to maintain the pivot portion of said bead and flange in operative engagement during the movements of said cover, said tab abutting said bead and having a portion bendable from its normal vertical position over and in conformance with the curvature of said bead during the opening movement of said cover, whereby the inherent resiliency of said tab will return it to its normal vertical position and the cover to its closed position, and said tab providing a handle for said baffle to facilitate removal of the baffle from the cup.

3. In combination, a cup having an outwardly rolled peripheral bead substantially circular in cross-section, a cover having a peripheral flange engageable with said bead and a slot disposed adjacent said flange, a portion of said bead and flange establishing a pivotal connection for opening and closing movements of said cover, a baffle carried by said cup, an inherently resilient tab carried by said baffle and disposed in a normally substantially vertical position for engaging in the slot in said cover to maintain the pivot portion of said bead and flange in operative engagement

5 during movements of said cover, said tab abutting said bead and said cover having translational movement only with respect thereto during the initial opening movement of said cover, and shoulders formed on said tab and engageable with said cover during the latter portion only of the opening movement of said cover to bend said

tab from its normal vertical position over and in conformance with the curvature of said bead, whereby the inherent resiliency of said tab will return it to its normal position and the cover to its closed position.

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