

April 4, 1950

K. C. HAMILTON

2,503,045

SPUTUM CUP

Filed Oct. 31, 1946

2 Sheets-Sheet 1

Fig. 1.

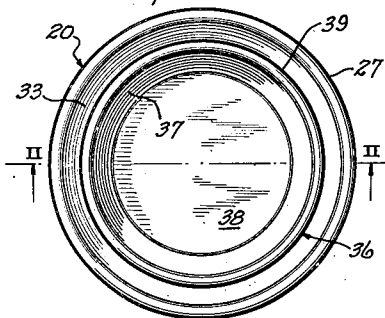


Fig. 3.

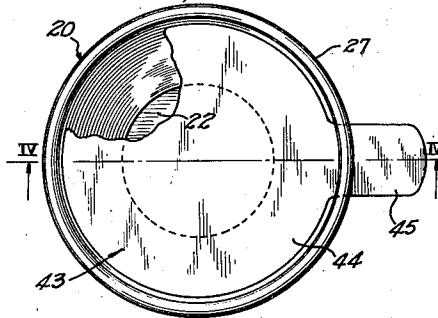


Fig. 2.

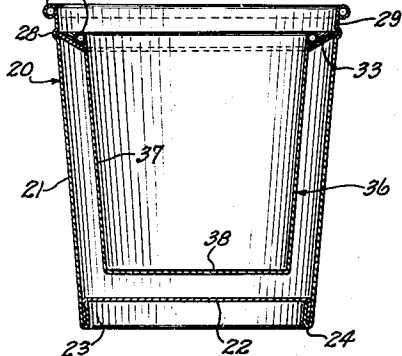


Fig. 4.

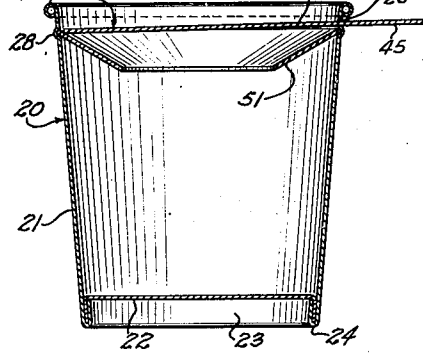


Fig. 5.

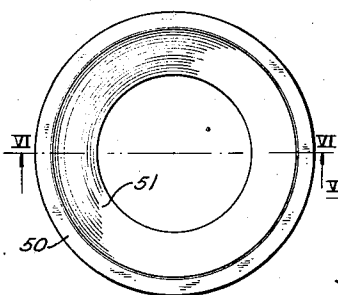


Fig. 7.

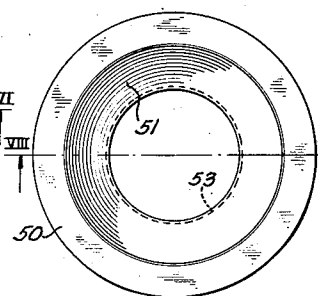


Fig. 9.

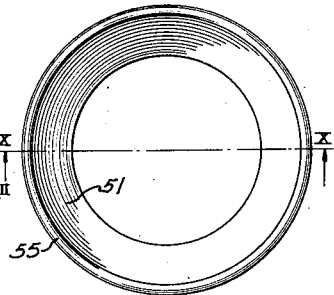


Fig. 6.



Fig. 8.



Fig. 10. INVENTOR.
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Fig. 13.

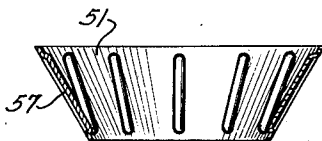
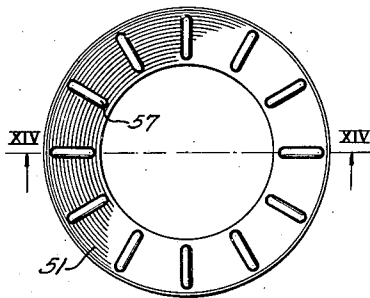


Fig. 14.

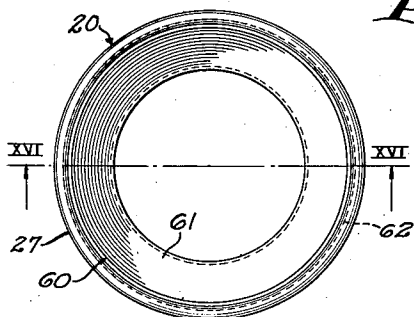


Fig. 15.

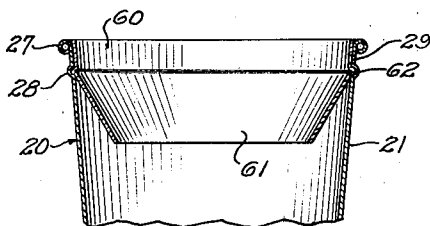


Fig. 16.

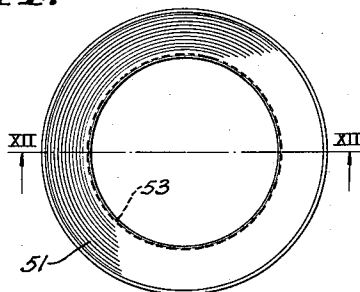


Fig. 11.

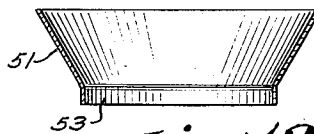


Fig. 12.

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UNITED STATES PATENT OFFICE

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SPUTUM CUP

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2 Claims. (Cl. 4-267)

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This invention relates to improvements in receptacles made of paper and in which at least some portions of the receptacle are applicable to any one of a plurality of uses.

Paper receptacles, intended for a particular use of limited extent only, cannot be made at such cost as to be economically available to the public. However, if the receptacle is so designed that the various parts thereof may be made in quantity and assembled in different ways to perform any one of a number of functions, the manufacturing cost of such receptacles can be minimized to the advantage of the consuming public. Distribution of such special purpose receptacles to the public requires also that the receptacle be so designed as to minimize the space necessary for shipping and storing. And the receptacles should be so designed as to require only a minimum of time and effort in assembly for any one of the special uses to which the receptacle may be put.

It is therefore one object of the present invention to provide a paper receptacle of which the elements may be so assembled as to be available for a plurality of special uses.

Another object of the invention is to provide a paper receptacle in which a number of the same basic elements are employed in various combinations with other elements to adapt the receptacle to a variety of particular uses.

Another object of the invention is to provide a paper receptacle adaptable to a number of special uses and in which various parts are so designed as to be severally adaptable for shipping and storing in nested relation.

And a further object of the invention is to provide a paper receptacle adaptable to particular uses and in which the parts are so designed as to be capable of assemblage in various combinations by the user with sufficient permanence and with a minimum of effort to serve the particular use desired.

Objects and advantages, other than those set forth above, will be apparent from the following description when read in connection with the accompanying drawings, in which:

Fig. 1 is a top plan view of one embodiment of the invention;

Fig. 2 is a cross section taken on a vertical plane including line II—II of Fig. 1;

Fig. 3 is a top plan view of another embodiment of the present invention;

Fig. 4 is a cross section taken on the vertical plane through line IV—IV of Fig. 3;

Fig. 5 is a modified embodiment of one element of the structure shown in Figs. 1 to 4;

Fig. 6 is a cross section taken on the vertical plane through line VI—VI of Fig. 5;

Figs. 7 and 8, 9 and 10, 11 and 12, 13 and 14 are similar to Figs. 5 and 6 and show further

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modifications of the same element of the structure shown in Figs. 1 to 4;

Fig. 15 is a top plan view of a modified form of two elements of the present invention; and

Fig. 16 is a cross section taken on a vertical plane through line XVI—XVI of Fig. 15.

Generally, the present structure comprises a receptacle of the paper cup type formed to receive, in semi-permanent relation, a hollow member of generally frusto-conical shape capable of functioning as a support or a baffle and a partial closure for the open end of the receptacle. When functioning as a support, such member receives and retains an inner container of a shape similar to and a size smaller than the receptacle, in substantially uniformly spaced relation to the wall and bottom of the receptacle. A cover of generally circular or disk-like form, and with a tab extending therefrom may be applied to the container, the disk portion of the cover seating in the receptacle and on the support-baffle member and the cover tab projecting through a slot in the receptacle side wall to aid in retaining the cover in place and to serve as a handle for pivotal movement of the cover in the slot.

Referring particularly to the drawings, the reference numeral 20 generally designates an open-ended receptacle formed with a side wall 21 and a bottom 22, the side wall being frusto-conical in shape and formed with an inwardly flanged portion 23 at one end to co-act with the remainder of the side wall in providing a space for receiving a flange 24 on the bottom 22. The surfaces defining the bottom flange-receiving space and the surfaces of the bottom flange are coated with adhesive and are pressed together to form a liquid-tight joint and to provide a suitable base for the receptacle as is usual. The receptacle side wall 21 is rolled outwardly at the open or lip end to form an outwardly extending bead 27 at the lip of the receptacle. A groove 28 is formed in the receptacle side wall, a relatively small distance below the line of contact of the edge of the bead with the receptacle side wall and in the interior surface of the side wall, to provide space for a slot 29 of a width equal to the thickness of the cover generally referred to above.

The receptacle side wall groove 28 is of such width as to receive therein the edge of a substantially annular member 33 which is "dished" or frusto-conical. The member 33 is preferably of such thickness as to have a material strength and of such diameter that the larger or peripheral edge thereof is retained in seated position in the groove 28 even though considerable unseating force is exerted on the member. The member 33 supports an open-ended inner container 36, preferably similar in shape to and smaller than the receptacle and including a side wall 37 and a bottom 38 and having the open

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end provided with a lip bead 39 extending outwardly from the container side wall. The member 33 is preferably of such width only that the container 36 will be spaced from the receptacle side wall 21 by the same distance as the inner container bottom 38 is spaced from the receptacle bottom 22. The container lip bead 39 provides a flange-like portion of sufficient strength to support the container and its contents suspended from the support member 33. Aside from the preferable form and size described, the inner container may be of any construction desired, as, for example the well-known plaited or pleated cup with a unitary side wall and bottom. In the construction above described, the space between the receptacle and the container may be filled with a refrigerant, such as solid carbon dioxide (so-called "dry ice") while the container is filled with food to be sold in frozen condition, or such space may be filled with a heat radiating solid while the container is filled with food to be eaten while hot.

A cover generally designated 43 is formed with a circular or disk-like portion 44 and a tab 45 extending therefrom. The disk portion is preferably made of such size as to fit into the open end of the receptacle and to rest on the support member 33 when the cover tab portion 45 is extended through the slot 29 in the receptacle side wall 23. If the cover is to be used only once during the life of the present device, the cover may be made relatively close-fitting in the receptacle and the tab serves only as a locating and holding means, while if the cover is to be used repeatedly during the life of the device, the cover is fitted loosely in the receptacle and the tab 45 serves as a handle by which the cover is pivoted in the slot 29.

When the device is to be used, for example, as a sputum cup in a tuberculosis sanitarium, the inner container 36 is omitted, the member 33 functions only as a baffle member and is preferably made with a smaller opening than when the device is used with the inner container. The baffle seats in the receptacle side wall groove sufficiently closely to prevent leakage of liquid between the edge of the baffle and the receptacle groove, if the device is accidentally upset. The device is particularly suitable for use as a sputum cup because it requires little space for storage of the component parts, is readily assembled, is self-sustaining and covered when in use, and is disposable as a whole whenever desired. Hence, there is no need for a holder which must be sterilized daily.

For some purposes, the baffle member is preferably made as shown in Figs. 5 to 14 inclusive. In Figs. 5 and 6, the member is formed with a flange 50 extending at right angles to the vertical axis through the baffle, and the baffle wall 51 is formed at a different angle to the vertical baffle axis than disclosed above, for example, at an angle to the vertical axis of sixty degrees as compared with the thirty degrees angle shown in Figs. 2 and 4. Further, some uses of the baffle require that the wall be formed with a cylindrical portion 53, as shown in Figs. 7, 8 and 11, 12 in which the cylindrical portion serves to stiffen the frusto-conical portion of the baffle and prevents distortion thereof. When it is desired to obtain the highest possible degree of seating and sealing of the baffle in the receptacle side wall groove 28, the baffle is formed with a bead 55 at

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the larger baffle end the bead being slightly larger in size than the groove 28 but conforming in shape thereto, and thus increasing the area of baffle surface bearing in the groove. When a greater rigidity in the vertical axial direction is required in a baffle than can be obtained in the structures described above, a series of flutes 57 are formed in the baffle, as shown in Figs. 13 and 14. The flutes of course, may be variously arranged and formed within the scope of the present invention.

The maximum holding and sealing of the support-baffle member 33 is obtained when such member is formed with a substantially cylindrical end portion 60 and a conical wall portion 61, with a peripheral rib 62 extending outwardly from the juncture of the cylindrical and conical wall surfaces. Such cylindrical baffle portion and rib are also preferably made slightly larger than and conforms in shape with that portion of the receptacle and with the receptacle wall groove in which the cylindrical baffle portion and the rib, respectively, are to be seated. Hence, the groove and the rib and the receptacle and baffle wall surfaces which are in frictional engagement, provide greatly increased surface areas for holding the baffle in the receptacle and provide a greatly improved seal against leakage between such surfaces as compared to the embodiments previously described.

Although but a few embodiments of the present invention have been illustrated and described, it will be apparent to those skilled in the art that various changes and modifications may be made therein without departing from the spirit of the invention or from the scope of the appended claims.

I claim:

1. In a paper receptacle, an open-ended receptacle having an internal groove in the side wall thereof adjacent the open end of the receptacle and a slot in the side wall between the groove and the open receptacle end, a baffle member of generally frusto-conical shape seating at its larger periphery in the receptacle side wall groove, and a cover having a disk portion fitting into the receptacle to lie on the baffle and having a tab extending from the disk portion for extension through the receptacle side wall slot.

2. The combination with an open-ended receptacle having a snap-in baffle positioned in a groove in the side wall of the receptacle, of a slot in said wall above said groove, and a cover seated on said baffle and having a tab extending through said slot, said cover being pivoted upwardly when said tab is depressed.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
317,997	Hollet	May 19, 1885
1,027,924	Starr	May 28, 1912
1,031,648	Johnson	July 2, 1912
1,217,599	Hill	Feb. 27, 1917
1,497,159	Porter	June 10, 1924
2,167,111	Hamilton	July 25, 1939
2,171,748	Hamilton	Sept. 5, 1939
2,339,665	Alman	Jan. 18, 1944