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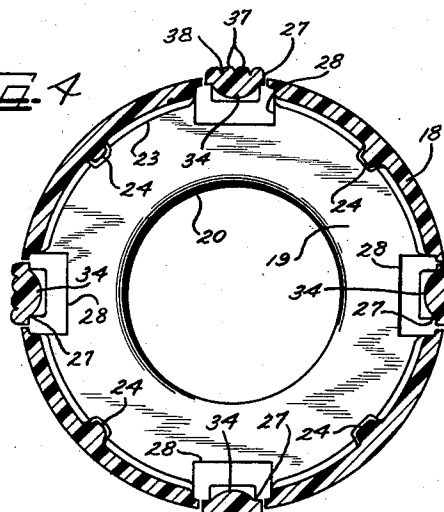
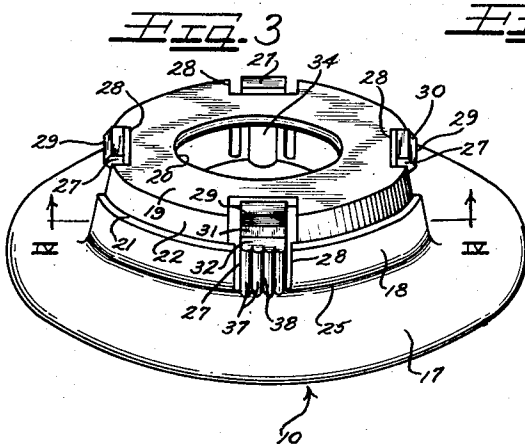
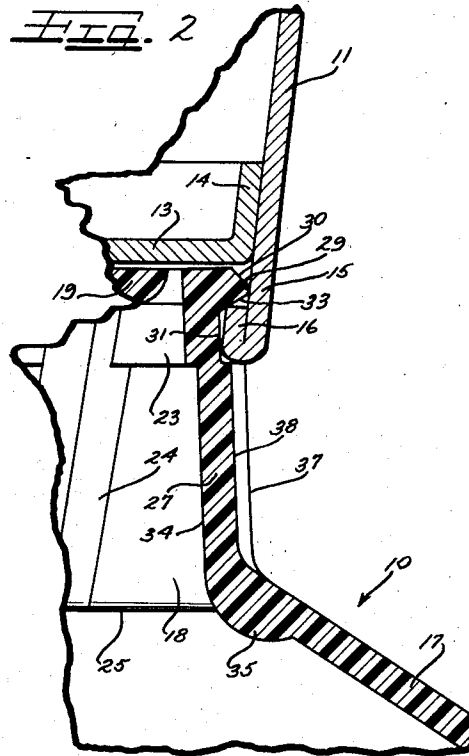
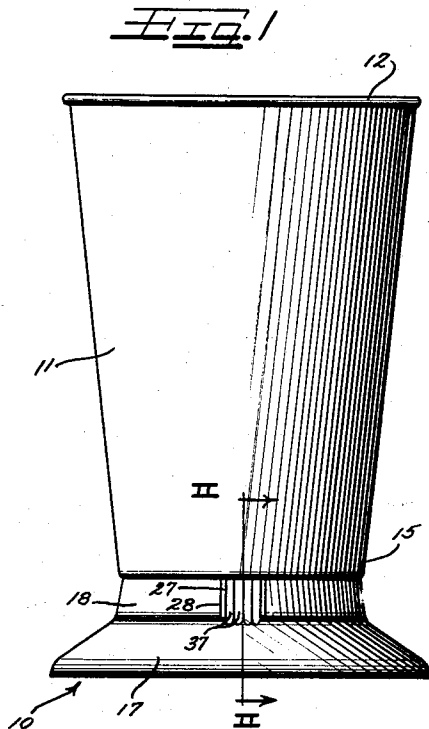
H. L. BENNETT ET AL

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BASE-TYPE HOLDER FOR PAPER CONTAINERS

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2 Sheets-Sheet 1



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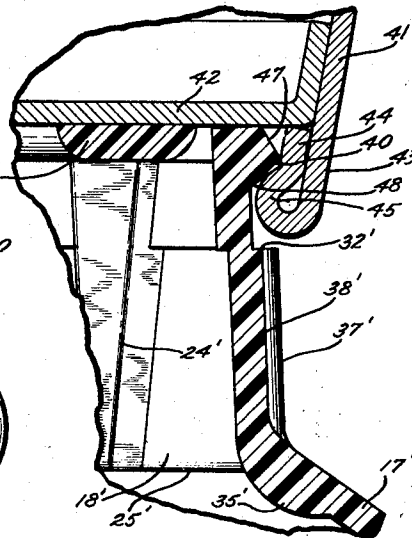
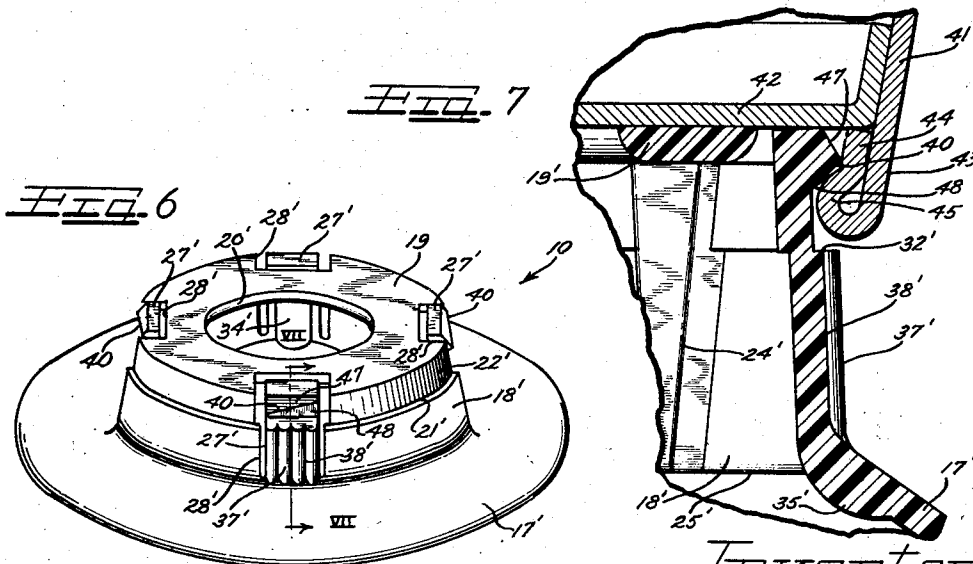
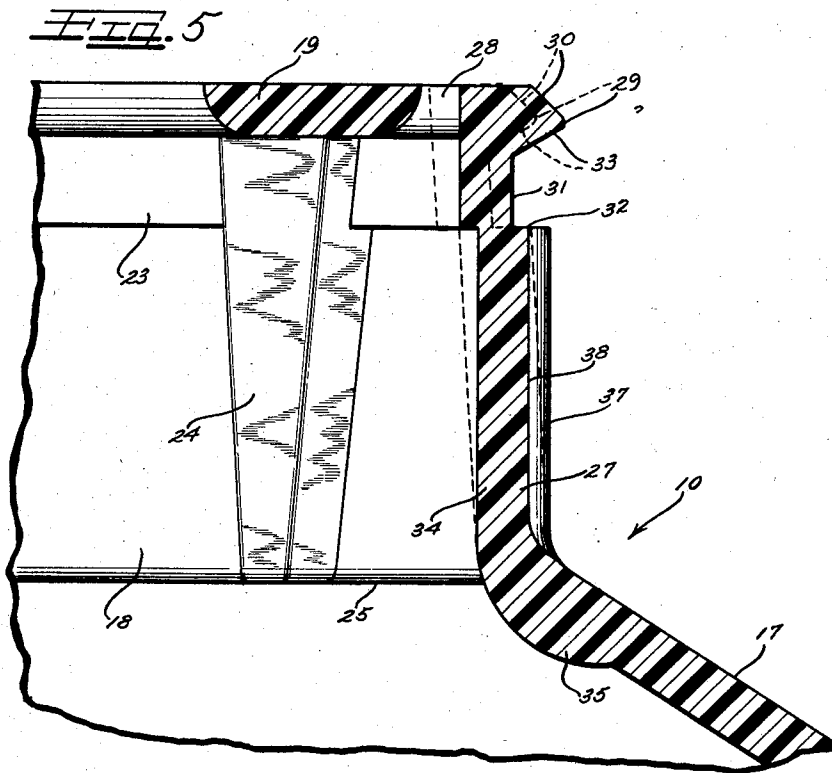
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2,910,219

BASE-TYPE HOLDER FOR PAPER CONTAINERS

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12 Claims. (Cl. 229—1.5)

The present invention relates to improvements in base-type holders for paper containers and more particularly to a paper cup holder for quick assembly and removal of the cups.

The present invention is a continuation-in-part of our application Serial No. 379,235 filed September 9, 1953, and now Patent No. 2,805,017.

An important object of the present invention is to provide an improved, lightweight paper cup holder of the kind that is adapted for interengagement in press-on relation with the skirted bottom end of a paper cup.

Another object of the invention is to provide an improved paper container and more particularly paper cup holder which is especially advantageously made from a moldable thermo-setting type of plastic material.

A further object of the invention is to provide an improved paper container holder of the base engagement type provided with novel resilient retaining finger or arm structure for releasable interengagement with the base flange or skirt structure of a paper container such as a cup.

Still another object of the invention is to provide in a base-type paper container holder improved self-adjustable readily adaptable retaining means interengageable with the base flange or skirt structure of paper containers.

Other objects, features and advantages of the present invention will be readily apparent from the following detailed description of certain preferred embodiments thereof taken in conjunction with the accompanying drawings, in which:

Figure 1 is a side elevational view of a paper cup and holder assembly embodying features of the invention;

Figure 2 is an enlarged fragmentary vertical sectional detail view taken substantially on the line II—II of Figure 1;

Figure 3 is a pictorial illustration of the base type holder of Figures 1 and 2;

Figure 4 is a transverse sectional detail view taken substantially on the line IV—IV of Figure 3;

Figure 5 is a substantially enlarged fragmentary vertical sectional view similar to Figure 2 but showing the base structure without the cup;

Figure 6 is a pictorial illustration of a holder embodying a modification; and

Figure 7 is an enlarged fragmentary sectional detail view taken substantially on the line VII—VII of Figure 6 and showing the holder assembled with a cup.

A base type holder 10 embodying features of the invention (Fig. 1-5) is adapted to support a paper container such as a disposable cup 11 of the type provided with a generally inverted conical wall having at the top or lip thereof a rolled bead rim 12. On its bottom portion, the cup 11 is provided with a flat bottom wall 13 which in this instance has an upturned continuous circumscribing flange 14 suitably secured by adhesive cementing or otherwise to the inside surface of the cup body wall spaced a limited distance above the lower extremity of such wall. If preferred, of course, the attach-

2

ment flange 14 of the bottom wall may be disposed in depending relation instead of upstanding. The body wall portion of the cup 11 extends below the bottom 13 and provides a depending skirt 15 in this instance defined by a reversely and upwardly inturned marginal flange portion 16 which, as best seen in Fig. 2, terminates short of the bottom 13 on the inside of the skirt 15 and defines therewith a radially inwardly opening groove.

The holder 10 is especially adapted to be molded from a thermoplastic or thermosetting plastic material. On its lower portion the holder 10 comprises a flaring base 17 having a maximum base diameter to afford substantial lateral stability support substantially precluding tipping of the base and cup assembly even though the cup may be full of liquid or other heavy contents. Upstanding from the flaring base 17 of the holder is a wall portion 18 which may be cylindrical but is preferably slightly upwardly tapering and adapted to fit supportingly within the body skirt 15 of the cup 11.

On its top, the upstanding body portion 18 of the holder has a reinforcing, upwardly facing integral top wall portion 19 (Figs. 3 and 4) which may be engaged as a supporting shoulder by the bottom wall 13 of the cup. Centrally the top 19 is preferably provided with an aperture 20 through which a finger or thumb may be inserted to eject the cup from the holder after use when desired.

Since various cups due either to deliberate design or manufacturing variables may have the depending skirt portion 15 longer or shorter relative to the bottom wall 13 of the cup, the upstanding body wall portion 18 of the holder is preferably provided with a skirt edge engageable upwardly facing outer peripheral shoulder 21 adjacent to the top 19 but spaced therebelow a sufficient distance to enable telescopic insertion of an upstanding portion 22 above the shoulder 21 into the skirt 15 a sufficient distance to assure full assembly of the holder and cup. In Figure 2, the lower edge of the skirt 15 at juncture of the flange 16 therewith is shown as engaged against the shoulder 21, but it will be appreciated that the bottom wall 13 of the cup could just as well be seated against the holder top 19. In order to maintain the wall thickness of the holder as thin as practicable for purposes of economy and lightweight, there is a compensating inward overhanging formation of the upper portion of the upstanding body wall 18 coincident with the inseting of the upper cup skirt telescoping portion 22, as seen at 23 in Figures 2, 4 and 5.

For additionally reinforcing the vertical wall portion 18 of the holder, so as to enable especially thin wall construction, the inner side of such wall is provided with suitable circumferentially spaced portions thereof with vertical reinforcing ribs 24 which, as best seen in Fig. 5, are of gradually increasing width from their lower ends where they join a juncture reinforcing rib 25 of the flaring base 17 and the upstanding wall 18 to the upper ends of the ribs where they are joined integrally with the adjacent inner side of the margin of the top 19.

For enabling press-on self-adjusting or equalizing, substantially positive interengagement with the cup skirt 15, the holder is provided with a plurality of generally upwardly extending resilient retaining fingers 27 located in respective vertical slots 28 in the upright body wall portion 18 of the holder and running out through the top 19. Each of the fingers 27 is integrally joined to the uppermost portion of the base 17 and more particularly in line with the juncture 25. Each of the retaining fingers 27 has a head portion adjacent to and preferably within the plane of the upper surface of the top 19 and providing a radially outwardly projecting cup skirt gripping lug 29. In each instance the gripping lug 29 normally projects to a larger diameter than the telescoping holder wall portion 22 and to a larger diameter than at least

3

the inside diameter of the underturned cup skirt flange 16. Hence, upon axial relative assembly movement of a cup with the holder, the lower edge of the skirt 15 engages upon downwardly sloping lead or cam surfaces 30 on the lugs 29 and resiliently deflects the retaining fingers radially inwardly until the tips of the lugs 29 enter into gripping engagement with the inwardly presented surface of the underturned skirt flange 16 and where there is a groove above the upper edge of the underturned flange ultimately snaps into such groove into a generally interlocking relation as best seen in Figure 2. Immediately below the respective lugs 29 is an undercut recess 31 defined at its lower side by an upwardly facing shoulder 32 preferably coplanar with the cup edge engageable shoulder 21. On its underside, each of the lugs 29 is preferably formed with a downwardly sloping and generally downwardly facing undercut shoulder 33 engageable cammingly with the edge of the cup flange 16 and facilitating camming out of the lug 29 during ejection of the cup from the holder.

In order to enhance the strength of the retaining fingers 27 while nevertheless affording therein substantial resilient deflectability, the inner sides of the respective fingers are provided with respective vertically extending reinforcing ribs 34 of substantial width and running into and merging with the upper portion of the holder base 17 as shown at 35. On the outer sides of the fingers, they are provided with a plurality of vertically extending alternate ribs 37 and flutes 38. Through this arrangement, resilient deflectability of the fingers inwardly is enhanced by the ribs and flutes 37 and 38, while radially outward deflectability of the fingers is substantially resisted by the substantial reinforcing inner ribs 34 thereof. At the same time the fingers are endowed with a high compression resistance and thus resistance to bending under compression forces. In Figure 5 is shown how the retaining fingers are flexible from a normal outward projection of the retaining lugs 29 thereof to a radially inwardly resiliently deflected position, on comparing the full and dash outline positions shown.

In Figures 6 and 7 a slight modification is shown wherein all of the details of the holder may be substantially the same except for the specific structure of the retaining lugs of the retaining fingers. Accordingly, similar primed reference numerals are used to show substantial identity of detail in the holder 10' of Figures 6 and 7 with the holder 10 of Figures 1 to 5. In the holder 10' the retaining fingers 27' have retaining lugs 40 which are disposed on generally spiral angles so that assembly with the skirt portion of a cup can be effected by a twisting or turning spiral assembly movement. Such an arrangement is highly desirable where a cup skirt is provided that has a more or less beaded or thick arrangement, more or less as shown in Figure 7 where a cup 41 provided with a bottom wall 42 has a skirt 43 with an inwardly and upwardly turned flange 44 that presses up against the bottom of the cup bottom 42 and may join the lower end of the skirt on a generally beaded arrangement as shown at 45. With such an arrangement it is desirable to insert the telescoping portion of the holder with a generally screw action as enabled by the helically slanted lug projections 40. On their upper sides the lug projections 40 are provided with lead-in cam surfaces 47, respectively, for much the same reason, and functioning as the cam surfaces 30 of the lugs 29. On their lower sides the lug projections 40 have undercut cam surfaces 48 which are for substantially similar purposes as the undercut flange surfaces 33 of the lugs 29.

It will be observed in Figure 7 that the bottom wall 42 of the cup rests upon the top 19'. On the other hand, the lower edge of the skirt 43 might rest upon the shoulder 21' where the skirt is longer in relation to the bottom wall 42.

It will be understood that modifications and variations

4

may be effected without departing from the scope of the novel concepts of the present invention.

We claim as our invention:

1. A holder for a flexible flat bottomed paper cup having an annular depending skirt below the cup bottom, said holder including a lower stable support base of substantial diameter and a smaller diameter upstanding central body portion with the upper portion thereof adapted for telescopic reception within the cup skirt, said upper portion of the upstanding body having a top wall of substantial area adapted for opposition to the cup bottom, said upstanding body portion and said top having vertical slots of substantial width with resilient retaining fingers projecting upwardly therein from the bottom of the slots and resiliently flexible radially, said fingers being provided at their upper ends with radially outwardly projecting lugs that are engageable retainingly with the cup skirt upon telescoping of said upper portion of the body of the holder within the skirt.

2. A holder for a flexible flat bottomed paper cup having an annular depending skirt below the cup bottom, said holder including a lower stable support base of substantial diameter and a smaller diameter upstanding central body portion with the upper portion thereof adapted for telescopic reception within the cup skirt, said upper portion of the upstanding body having a top wall of substantial area adapted for opposition to the cup bottom, said upstanding body portion and said top having vertical slots of substantial width with resilient retaining fingers projecting upwardly therein from the bottom of the slots and resiliently flexible radially, said fingers being provided at their upper ends with radially outwardly projecting lugs that are engageable retainingly with the cup skirt upon telescoping of said upper portion of the body of the holder within the skirt, said lugs of the fingers having upper downwardly sloping cam surfaces to facilitate insertion thereof into the cup skirt.

3. A holder for a flexible flat bottomed paper cup having an annular depending skirt below the cup bottom, said holder including a lower stable support base of substantial diameter and a smaller diameter upstanding central body portion with the upper portion thereof adapted for telescopic reception within the cup skirt, said upper portion of the upstanding body having a top wall of substantial area adapted for opposition to the cup bottom, said upstanding body portion and said top having vertical slots of substantial width with resilient retaining fingers projecting upwardly therein from the bottom of the slots and resiliently flexible radially, said fingers being provided at their upper ends with radially outwardly projecting lugs that are engageable retainingly with the cup skirt upon telescoping of said upper portion of the body of the holder within the skirt, said retaining finger lugs having on the lower side thereof sloping cam surfaces to facilitate interengagement with the cup skirt and also to facilitate ejection of the cup from the holder.

4. A holder for a flexible flat bottomed paper cup having an annular depending skirt below the cup bottom, said holder including a lower stable support base of substantial diameter and a smaller diameter upstanding central body portion with the upper portion thereof adapted for telescopic reception within the cup skirt, said upper portion of the upstanding body having a top wall of substantial area adapted for opposition to the cup bottom, said upstanding body portion and said top having vertical slots of substantial width with resilient retaining fingers projecting upwardly therein from the bottom of the slots and resiliently flexible radially, said fingers being provided at their upper ends with radially outwardly projecting lugs that are engageable retainingly with the cup skirt upon telescoping of said upper portion of the body of the holder within the skirt, said lugs having upper downwardly sloping cam surfaces to facilitate assembly with the cup skirt and lower upwardly sloping cam surfaces

5

to facilitate interengagement with the cup skirt and also ejection of the cup from the holder.

5. A holder for a flexible flat bottomed paper cup having an annular depending skirt below the cup bottom, said holder including a lower stable support base of substantial diameter and a smaller diameter upstanding central body portion with the upper portion thereof adapted for telescopic reception within the cup skirt, said upper portion of the upstanding body having a top wall of substantial area adapted for opposition to the cup bottom, said upstanding body portion and said top having vertical slots of substantial width with resilient retaining fingers projecting upwardly therein from the bottom of the slots and resiliently flexible radially, said fingers being provided at their upper ends with radially outwardly projecting lugs that are engageable retainingly with the cup skirt upon telescoping of said upper portion of the body of the holder within the skirt, said retaining fingers having vertical reinforcing ribs comprising a rib of substantial mass on the inner side and a plurality of smaller ribs separated by flutes on the outer side of the fingers.

6. A holder for a flexible flat bottomed paper cup having an annular depending skirt below the cup bottom, said holder including a lower stable support base of substantial diameter and a smaller diameter upstanding central body portion with the upper portion thereof adapted for telescopic reception within the cup skirt, said upper portion of the upstanding body having a top wall of substantial area adapted for opposition to the cup bottom, said upstanding body portion and said top having vertical slots of substantial width with resilient retaining fingers projecting upwardly therein from the bottom of the slots and resiliently flexible radially, said fingers being provided at their upper ends with radially outwardly projecting lugs that are engageable retainingly with the cup skirt upon telescoping of said upper portion of the body of the holder within the skirt, said upper telescoping portion of the body having at the lower juncture thereof with the remainder of the body an upwardly facing shoulder against which the edge of the skirt is adapted to seat where the length of the skirt is greater than the length of said telescoping portion.

7. A holder for a flexible flat bottomed paper cup having an annular depending skirt below the cup bottom, said holder including a lower stable support base of substantial diameter and a smaller diameter upstanding central body portion with the upper portion thereof adapted for telescopic reception within the cup skirt, said upper portion of the upstanding body having a top wall of substantial area adapted for opposition to the cup bottom, said upstanding body portion and said top having vertical slots of substantial width with resilient retaining fingers projecting upwardly therein from the bottom of the slots and resiliently flexible radially, said fingers being provided at their upper ends with radially outwardly projecting lugs that are engageable retainingly with the cup skirt upon telescoping of said upper portion of the body of the holder within the skirt, the inner side of the upstanding body portion being provided with a series of circumferentially spaced vertical reinforcing ribs intermediate said slots and joined to the underside of the top wall.

8. A holder for a flexible flat bottomed paper cup having an annular depending skirt below the cup bottom, said holder including a lower stable support base of substantial diameter and a smaller diameter upstanding central body portion with the upper portion thereof adapted for telescopic reception within the cup skirt, said upper portion of the upstanding body having a top wall of substantial area adapted for opposition to the cup bottom, said upstanding body portion and said top having vertical slots of substantial width with resilient retaining fingers

6

projecting upwardly therein from the bottom of the slots and resiliently flexible radially, said fingers being provided at their upper ends with radially outwardly projecting lugs that are engageable retainingly with the cup skirt upon telescoping of said upper portion of the body of the holder within the skirt, said top wall having a central aperture for facilitating ejection of a cup from the holder.

9. In a holder for interengagement with a skirted cup, a holder body having an upstanding circular portion for telescoping within a cup skirt and provided with generally radially outwardly projecting generally spiral lug structure for enabling interengagement within the cup skirt by a generally screw action, said lug structure being provided on the upper end portions of resilient fingers.

10. In a paper cup and holder assembly, a paper cup having a depending skirt below a bottom wall provided with a return-bent paper flange on the inner side thereof with the upper edge of the flange adjacent to the bottom wall and a generally bead-like juncture of the flange with the skirt, the holder comprising a stabilizing wide base and a central upstanding body portion provided with generally spirally arranged retaining lug structure normally of a larger diameter than the inside diameter defined by said bead and interengaged with said bead and over the bead by a relative screwing assembly action to interengage the lug structure with the underturned flange.

11. In a hollow shell paper cup supporting holder, a flaring base portion, a central upstanding cup supporting portion having an upper part thereof for telescoping insertion within a lower skirt of a paper cup, said part having a top wall of substantial area, said upstanding portion and said top wall having respective circumferentially spaced slots therein with integral retaining fingers projecting upwardly from the lower ends of the slots and with the upper portions thereof in substantial clearance relation to the adjacent portion of the top wall so that the fingers are resiliently flexibly movable radially inwardly, the fingers having on the upper end portions thereof radially outwardly projecting retaining lugs that normally project radially outwardly beyond the adjacent diameter of the upstanding portion and are engageable within the cup skirt under resilient radially inward flexure of the fingers to adjust the same to the engaged inside diameter of the skirt and with the clearance with respect to the top wall enabling the resilient adjusting flexure of the fingers.

12. A holder for a flexible flat bottomed paper cup having an annular depending skirt below the cup bottom, said holder including a lower stable support base of substantial diameter and a smaller diameter upstanding central body portion with the upper portion thereof adapted for telescopic reception within the cup skirt, said upper portion of the upstanding body having a top wall of substantial area adapted for opposition to the cup bottom, said upstanding body portion and said top having vertical slots of substantial width with resilient retaining fingers projecting upwardly therein from the bottom of the slots and resiliently flexible radially, said fingers being provided at their upper ends with radially outwardly projecting lugs that are engageable retainingly with the cup skirt upon telescoping of said upper portion of the body of the holder within the skirt, at least certain of said lugs being disposed on generally spiral angles so that assembly with the cup skirt can be effected by a twisting or turning spiral movement.

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