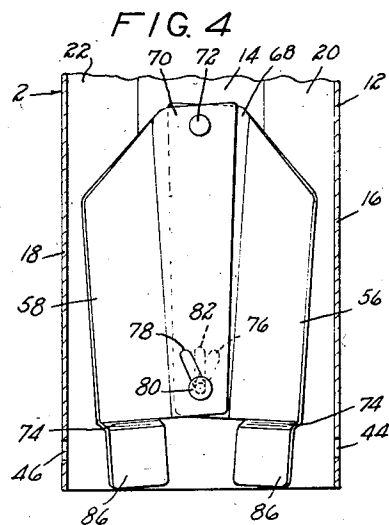
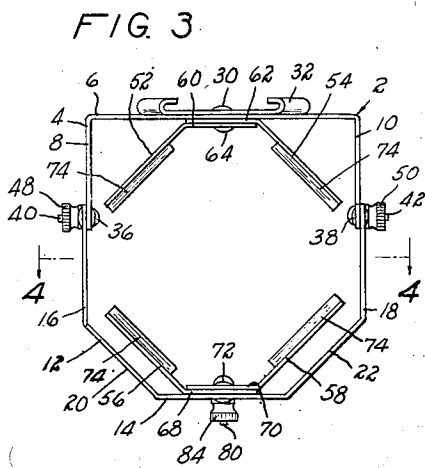
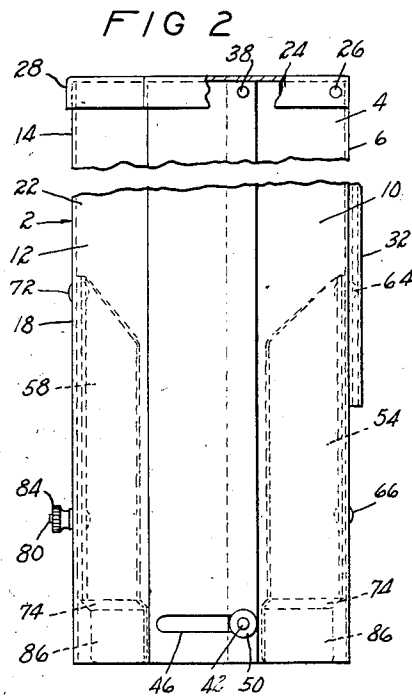
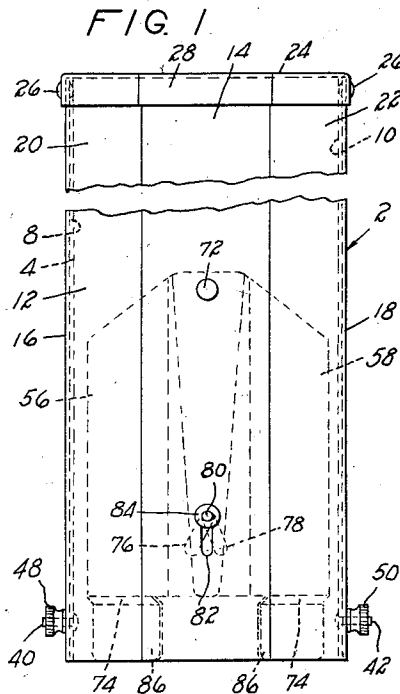


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P. A. STEPHENSON
ADJUSTABLE CUP DISPENSER

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ADJUSTABLE CUP DISPENSER

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4 Claims. (Cl. 221—44)

The present invention relates to dispensers for paper cups and the like.

The principal object of the invention is to provide an improved cup dispenser which is readily and conveniently adjustable to accommodate different sizes of cups.

Another object is to provide a cup dispenser having improved means for supporting cups of various sizes in the proper manner to enable simple and foolproof extraction of the cups one at a time.

Another object is to provide an improved cup dispenser of simplified and rugged construction, which is inexpensive to manufacture, attractive in appearance, and may be readily and easily installed in any convenient location.

Other objects will be in part obvious, and in part pointed out more in detail hereinafter.

The invention accordingly consists in the features of construction, combination of elements and arrangement of parts which will be exemplified in the construction hereafter set forth and the scope of the application of which will be indicated in the appended claims.

In the drawing:

Figure 1 is a front elevation view of a cup dispenser constructed in accordance with the present invention;

Figure 2 is a side view of the structure shown in Figure 1;

Figure 3 is a top view of the structure shown in Figure 1 with the cover plate removed; and

Figure 4 is an enlarged sectional view of a portion of the structure shown in Figure 3, taken on the line 4—4 thereof.

Referring to the drawing, a preferred embodiment of a cup dispenser constructed in accordance with the present invention includes an elongate hollow casing 2 which may be constructed of stainless steel sheet metal or the like. The casing is of two-piece construction, consisting of a channel-shaped rear case member 4 having a rear wall 6 and forwardly extending side walls 8, 10, and a complemental channel-shaped front case member 12 having a front wall 14 and rearwardly extending side walls 16, 18. The side edges of the front wall are preferably bent diagonally rearward to provide beveled corners 20, 22, which enhance the appearance of the dispenser.

The front and rear case members are arranged to accommodate a stack of nested cups therebetween, and the top of the casing is closed by a cover 24 hingedly connected by rivets 26 or the like to the rear case member 4. The cover 24 has downwardly projecting flanges 28 which enclose the upper edge of the casing 2, and thus permits cups to be easily loaded into the top of the dispenser but prevents the entrance of foreign material. The casing 2 is open at its bottom end, to permit the cups to be easily manually extracted one at a time.

The casing 2 is adapted to be mounted in a generally upright position and for this purpose there is secured to the rear wall 6 of the rear case member 4 by a rivet

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30 or the like a tapered clip 32 which is adapted to slip over a matching tapered bracket, not shown, mounted in any convenient location on a wall or other support. With this arrangement the dispenser may be readily taken down for reloading, cleaning, or the like.

The case members 4, 12 are hingedly connected together by rivets 36, 38 at their upper ends, and thus are relatively movable about a lateral axis. Front case member 12 is slightly wider than rear case member 4 so that the rearward edges of the side walls 16, 18 of the front case member overlap the forward edges of the side walls 8, 10 of the rear case member. The case members are thus arranged to telescope together at their lower ends during relative pivotal movement. To permit adjustment of the case members with any desired spacing of the front wall 14 and rear wall 6, side walls 8, 10 are provided with threaded studs 40, 42 which extend outwardly through horizontally disposed slots 44, 46 in side walls 16, 18. The case members may be clamped with their lower ends in any desired relative position by tightening knurled nuts 48, 50 on the threaded studs 40, 42. When adjusted for maximum spacing, front wall 14 and rear wall 6 are parallel.

A stack of cups is supported within the casing 2 by a plurality of elongate vertically disposed retainer plates 52, 54, 56, 58 provided on the inside lower portion of the casing. The retainer plates are arranged in two opposed pairs which may be identical in shape. The plates 52, 54 of the rearward pair are disposed in laterally spaced forwardly and outwardly extending relation, generally diagonally of the rear corners of the casing, and are supported in this position by flanges 60, 62 secured in overlapping relation to the rear wall 6 of rear case member 4 by a pair of vertically spaced rivets 64, 66. The plates 56, 58 of the forward pair are disposed generally opposite plates 52, 54, in laterally spaced rearwardly and outwardly extending relation, and generally parallel to beveled corners 20, 22. The forward plates 56, 58 have vertically extending overlapping flanges 68, 70 which are secured at their upper ends to the front wall 14 of front case member 12 by a rivet 72. The retainer plates are formed with seats or shoulders 74 adjacent their lower ends which are arranged to engage and support the bottom cup in the stack at equally spaced points about its brim. The shoulders 74 are preferably slightly downwardly inclined to permit easy extraction of the bottom cup, and are spaced close enough to the bottom of the casing so that the bottom cup protrudes sufficiently to be easily grasped for extraction. The upper edges of the retainer plates are beveled as shown in Figure 4, as to incline downwardly, and thus avoid obstructing downward flow of the cups in the casing.

To permit adjustment of the lateral spacing of the front pair of retainer plates 56, 58, the lower ends of the flanges 68, 70 are provided with oppositely inclined slots 76, 78 through which extends a stud 80 which is slidably accommodated in a vertical slot 82 in front wall 14. By moving the stud 80 up and down, the lower ends of the plates 56, 58 may be moved laterally toward or away from each other to adjust the spacing of the shoulders in these plates. The outer end of stud 80 is threaded to receive a knurled binder nut 84 which serves as a knob for adjusting the stud 80 and can be tightened to secure the plates 56, 58 with any desired lateral spacing.

It will thus be readily apparent that the cup dispenser described herein can be quickly and easily adjusted to accommodate cups of any desired brim diameter. By loosening nuts 48, 50 and pivoting the front case member 12 relative to the rear case member 4, the spacing of front wall 14 from back wall 6, and hence the spacing of the forward retainer plates 56, 58 from the rear

retainer plates 52, 54, can be adjusted to any desired value in accordance with the brim size of the cups to be supported. By loosening nut 84 and raising or lowering stud 80, the lateral spacing of the forward retainer plates 56, 58 can be adjusted to a value corresponding to the spacing of the forward pair from the rearward pair. Since the retainer plates and shoulders 74 are angularly disposed, the stack of cups supported by the shoulders will be centered automatically at a point such that the lowermost cup of the stack will be engaged by all of the shoulders 74 at points spaced about its periphery, and the stack of cups will thus be retained in the dispenser in a stable and secure fashion. Preferably, the retainer plates of each pair are perpendicular to each other as shown in Figure 3, and thus the several shoulders 74 will engage a stack of cups at equidistant points on its periphery. This provides optimum support as well as maximum range of adjustment. When the case members are pivoted together and the front retainer plates 56, 58 are swung closer together to accommodate smaller cups, the retainer plates are inclined to the vertical and thus provide a funnel effect which helps guide the cups down to proper seating engagement with shoulders 74.

The spacing of the shoulders should be adjusted so that when the lowermost cup is pulled downwardly to extract it from the casing, its brim is somewhat distorted by the shoulders 74, which separates it from the cup above and insures that only one cup at a time will be extracted. Each retainer plate has a lip 86 extending downwardly from the inner edge of its shoulder, which maintains the cup brim in somewhat distorted condition during its extraction and thus aids in preventing more than one cup at a time from being dispensed.

Thus there has been shown and described an improved cup dispenser which may be readily adjusted to accommodate cups of any desired size in the proper manner to support the cups in a stack firmly and securely within the dispenser, while insuring that cups can be easily and quickly extracted from the dispenser by hand, one at a time, and in a reliable and foolproof manner.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

I claim:

1. In a cup dispenser, a casing including upright front and rear case members adapted to enclose a stack of cups, means for mounting the front case member for adjustment forwardly and rearwardly relative to said rear case member, a pair of forwardly and outwardly inclined stiff first supports on said rear case member arranged to engage the bottom cup of said stack at spaced points on its brim, a pair of rearwardly and outwardly inclined stiff second supports mounted on said front case member for adjustments relative to each other and arranged to engage said bottom cup at points oppositely spaced from said first supports, means for adjusting the spacing of the supports of said pair of second supports in accordance with cup size, and means for securing said case members in an adjusted position to space said pair of first supports from said pair of second supports in accordance with cup size.

2. A cup dispenser for accommodating cups of different sizes comprising a casing including complementary upright front and rear case members pivotally connected at their upper ends and adapted to enclose a stack of cups, a pair

of rear retainer plates connected to said rear case member adjacent its lower end and having forwardly and outwardly inclined first shoulders engageable with the bottom cup of said stack at spaced points on its brim, a pair of front retainer plates pivotally connected to said front case member at its lower end and having rearwardly and outwardly inclined second shoulders adapted to engage said bottom cup at points oppositely spaced from said first shoulders, oppositely inclined slots in said front retainer plates, a stud vertically slidable in said front case member and engageable with said oppositely inclined slots to adjust the lateral spacing of said front retainer plates in accordance with cup diameter, means for locking said stud in vertically adjusted position, and means for adjusting the spacing of the lower ends of said case members in accordance with the lateral spacing of said front retainer plates.

3. In a cup dispenser, a casing including an elongate forwardly concave rear case member and an elongate rearwardly concave front case member pivotally connected at one end to the rear case member for adjustment relative thereto, said case members having telescoping sides and being adapted to receive a stack of cups therebetween, a pair of first retainer plates supported from the lower end of said rear case member and having laterally spaced diagonally forwardly extending seats, a pair of second retained plates supported from the lower end of said front case member and having laterally spaced diagonally rearwardly extending seats, said seats being arranged to support the bottom cup of said stack at spaced points about the rim thereof, means for adjustably mounting the retainer plates of one of said pairs of retainer plates for changing the lateral spacing therebetween to accommodate cups of different sizes, and means for securing said front case member in adjusted position relative to said rear case member for correspondingly adjusting the spacing of said pair of first retainer plates from said pair of second retainer plates in accordance with cup size.

4. In a cup dispenser, a casing including upright front and rear case members adapted to receive and enclose a stack of cups with the front case member mounted on the rear case member for adjustment forwardly and rearwardly relative thereto, a pair of forwardly and outwardly inclined rigid first supports carried by said rear case member arranged to engage the bottom cup of the stack at circumferentially spaced points on its brim, a pair of rearwardly and outwardly inclined rigid second supports mounted on the front case member for movement relative to each other and arranged to engage said bottom cup at circumferentially spaced points on the brim thereof generally diametrically opposite to the contact points of said first supports, means on the casing manually engageable exteriorly thereof for securing the front case member in adjusted position relative to the rear case member to correspondingly adjust the spacing of the pair of first supports from the pair of second supports in accordance with the cup size, means on said pair of second supports and said front case member manually engageable exteriorly of the casing to adjust and secure the supports of said pair of second supports relative to each other in accordance with cup size, and a lip depending from the inner edge of each of said supports for deflecting the brim of the bottom cup inwardly during withdrawal thereof from the dispenser to prevent removal of more than one cup at a time.

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