Sept. 14, 1954 M. A. BROWN 2,689,062

CUP DISPENSING DEVICE

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Fig. 1.

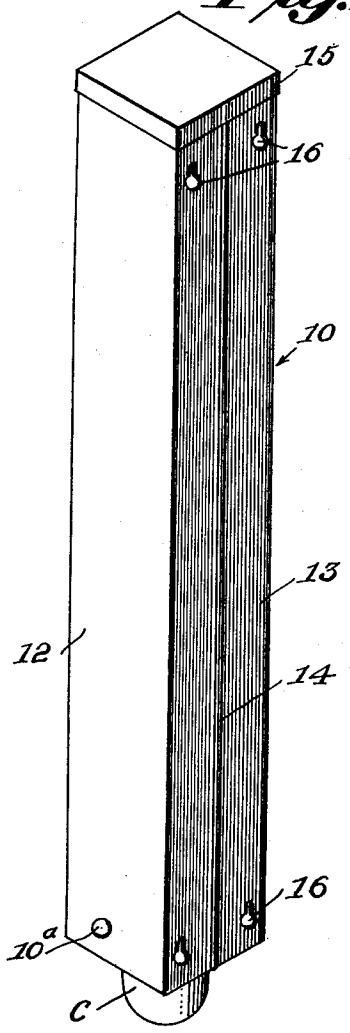


Fig. 2.

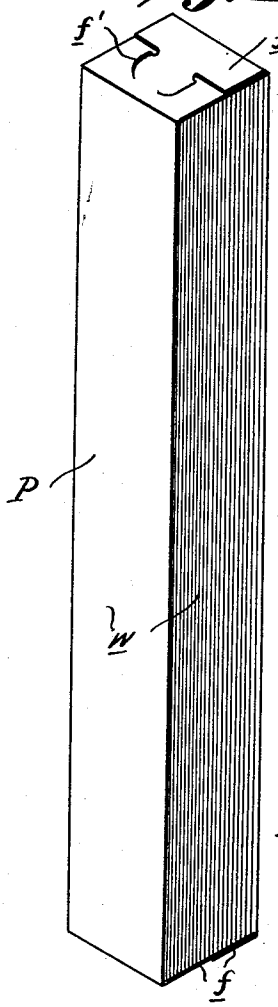
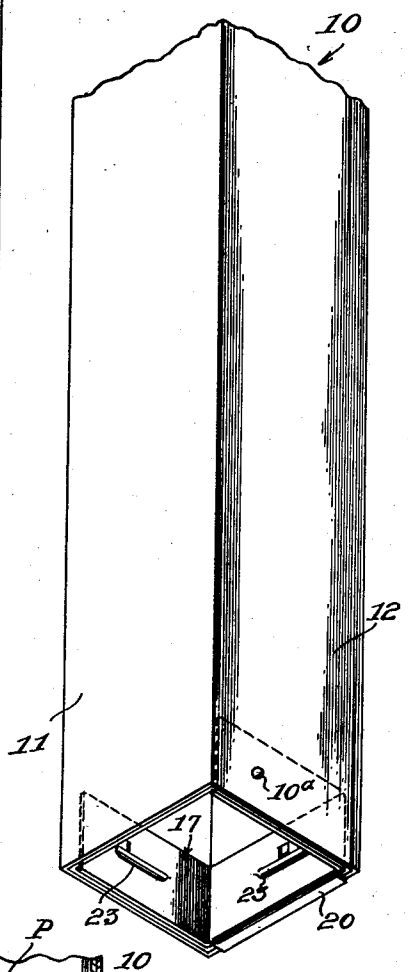
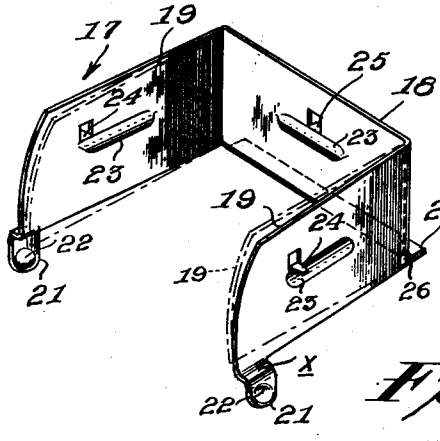


Fig. 3.





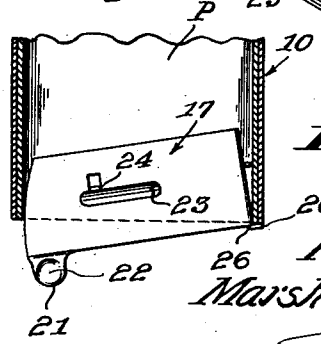


Fig. 8.

Fig. 4.

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CUP DISPENSING DEVICE

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Fig. 7.

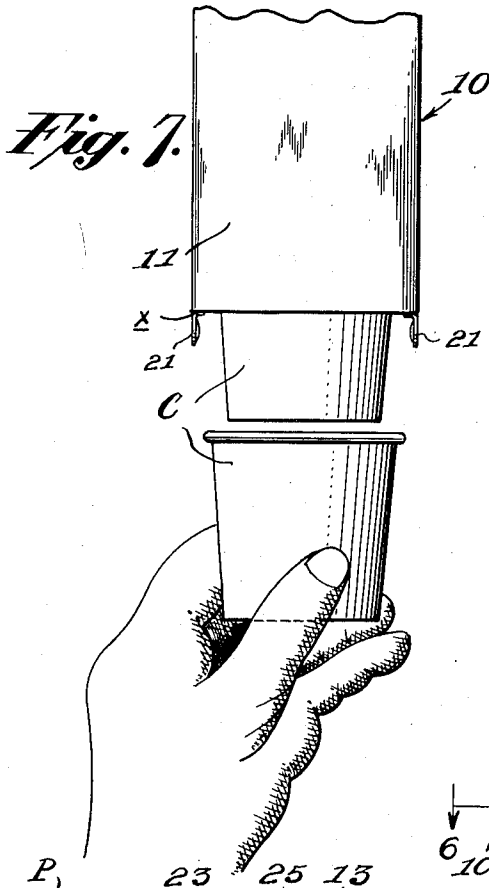
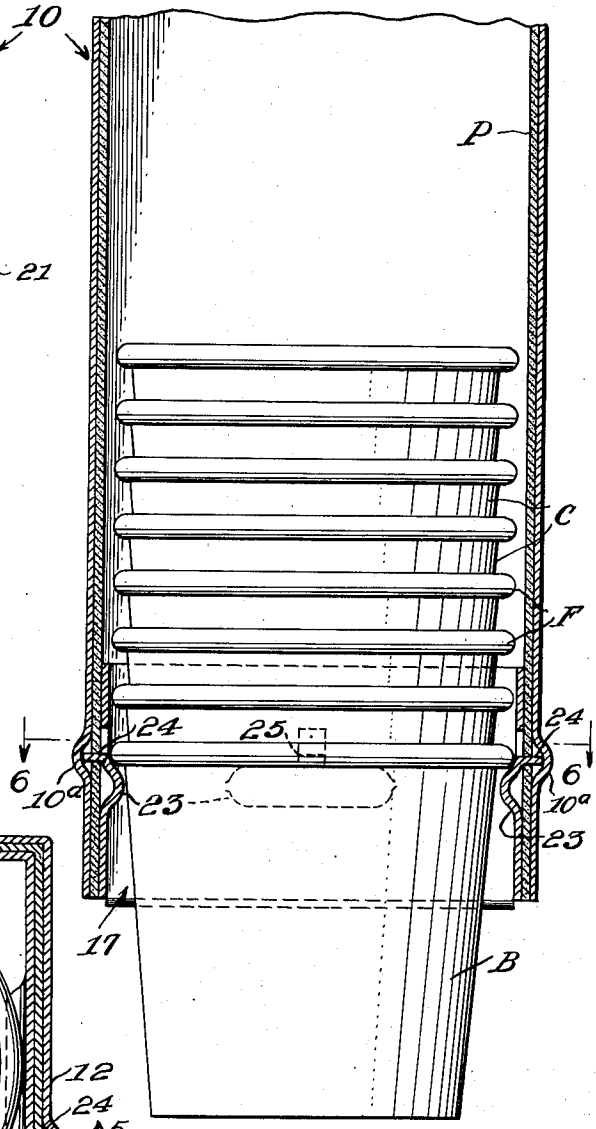


Fig. 5.



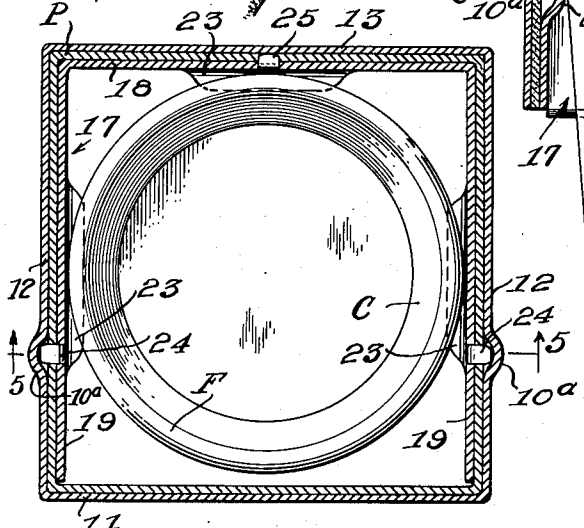


Fig. 6.

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CUP DISPENSING DEVICE

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Application March 18, 1952, Serial No. 277,257

3 Claims. (Cl. 221—197)

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This invention relates to a cup dispensing device.

More particularly my invention relates to an attachment for a paper carton which cooperates therewith in releasably supporting the same within a cup dispensing receptacle while retaining a stack of cups therein for successive release of the cups from the supported end of the stack.

An object of the invention is, therefore, to provide a device which is readily positionable within the lower open end of a paper carton having a stack of cups therein which is provided with means operative in such position to interlock therewith and retain the stack of cups within the carton for ready release of the successive lowermost cups of the stack.

A further object of the invention is to provide an elongated tubular relatively rigid dispensing receptacle for receiving a paper carton of stacked paper cups through the lower open end thereof, together with a resilient deformable member removably positionable within the lower open end of the carton and including tensioned means yieldably urging adjacent walls of the carton into firm frictional contact with the rigid member; and wherein the resilient member is provided with stack retaining and cup releasing means.

A still further object of the invention is to provide a cup dispensing device whereby the cups are individually grasped and released while the remaining cups of the stack are shielded against hand contact therewith whereby maximum sanitation is attained.

A still further object of the invention is to provide a cup dispensing device which is of substantially the same volume as a standard carton of stacked cups and which is capable of support from a wall, thereby requiring a minimum of space.

A still further object of the invention is to provide a dispensing receptacle having rigid walls for embracing and enclosing the usual cardboard carton of nested paper cups and supporting same against longitudinal as well as lateral outward flexing of the carton walls when the lower end of the cardboard carton is torn off or otherwise removed for the successive removal of the cups therefrom; together with an opposing resilient stack retaining and cup releasing member removably insertable into the lower open end of the carton, and cooperating with the walls of the paper carton and relatively rigid receptacle for locking the open end of the carton within the open ended receptacle.

In the drawings:

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Fig. 1 is a perspective view as observed from the intersection of one side and the rear walls of the carton supporting casing of the cup dispensing receptacle;

Fig. 2 is a perspective view of a carton of stacked paper drinking cups as such articles are at present commercially packaged;

Fig. 3 is an enlarged fragmental perspective view as observed from the lower open end of the receptacle casing and showing the cup carton telescoped therewithin and locked thereto by the removably stack retaining and cup releasing member in cooperative position with the open end of the carton;

Fig. 4 is a perspective view of the combined stack retaining and cup releasing member apart from the carton;

Fig. 5 is an enlarged vertical section view as observed in the plane of line 5—5 on Fig. 6;

Fig. 6 is a horizontal sectional view as observed in the plane of line 6—6 on Fig. 5;

Fig. 7 is a fragmental side elevational view showing a paper cup being dispensed; and

Fig. 8 is a vertical sectional view of the lower end portion of the casing and inserted carton and showing in particular the disposition of the cup releasing and carton locking member preparatory to operative disposition thereof within the concentric open ends of the carton and surrounding receptacle.

Referring now specifically to the drawings, the invention comprises a metallic or other rigid form of cup dispensing receptacle the casing or body 10 of which is of elongated generally tubular form to snugly receive a standard carton of stacked cups which is generally of rectangular cross section. This receptacle is open at opposite ends for the insertion and removal of cartons and includes a front wall 11, opposite side walls 12 and a rear wall 13. As shown in Fig. 1 the rear wall may include a central vertical seam and reenforcing rib 14 interconnecting adjacent longitudinal edges thereof, the receptacle being preferably formed from a single sheet of aluminum or polished steel.

As stated above the lower end of the casing 10 is open and the otherwise open top may be provided with a removable cover 15. The rear wall 13 is preferably provided with bayonet slots 16 adjacent the upper and lower ends of the casing for releasable engagement with nails or other headed securing means for removable support of the casing on a wall or the like.

The casing is further provided with laterally aligned inwardly opening recesses 10a in the side

walls 12 for a purpose later referred to as is also indicated above. The shape and dimensions of this casing 10 both longitudinally and transversely thereof are such as to snugly receive the commercial paper carton of stacked drinking cups indicated at P in Fig. 2.

The paper carton P comprises side walls *w* and is usually closed at each end by overlapping flaps *f*, certain of which are equipped with interengaging means *f'*; as is clearly indicated in Fig. 2.

Such a usual type of paper carton P encloses a stack of nested paper drinking cups C, each of which includes a frusto-conical body portion B and a top outwardly projecting bead F. In their stacked position within the carton P these cups have their frusto-conical body portions in telescoped engagement, as is indicated in Fig. 5.

The invention further includes a stack retaining and cup releasing member 17, which as shown in Fig. 4, is in the form of a U-shaped band of resilient sheet metal or the like including a bight 18 and opposed leg portions 19.

As is indicated in full lines in Fig. 4 the legs 19 of the member 17 are normally in slightly diverging relation away from the bight 18. The length of the bight 18 however, is substantially equal to the internal transverse dimensions of the carton when supported within the casing 10. Accordingly such legs will be substantially normal to the bight as indicated by dot-and-dash lines in Fig. 4, i. e. when the member 17 is operatively positioned within the carton.

The normally diverging resilient legs 19 will accordingly be under tension in the applied position of the member 17, which will result in a yieldable frictional contact between the legs and the opposite side walls of the carton as well as between the carton walls and those of the relatively rigid casing 10.

To assist a user in assembling and locking a carton P within the casing 10, the member 17 is preferably provided with a locating flange 20, projecting outwardly from the lower edge of bight 18, as a bent extension thereof, immediately below the plane of the lower edge of the member. This flange is thus adapted to first engage the lower edges of companion walls of the casing 10, and the carton P, as is particularly shown in Figs. 5 and 8, and to which reference will be later made.

The member 17 is preferably further provided with finger engageable tab extensions 21, in the form of downward and outwardly projecting free end portions of the legs 19, for a purpose later to appear. As shown these tabs are preferably dished, as at 22, for finger surface conformation therewith. This stack retaining and cup releasing member 17 is further provided with a plurality of inwardly directed cup flange engageable rib-like projections 23. These projections are preferably of arcuate cross section and they may be desirably formed by indenting the sheet material of the bight 18 and legs 19 inwardly, as is more clearly indicated in Figs. 5 and 6. These projections are also preferably of substantial length there being one located intermediate the ends of bight 18 and one intermediate the ends of each leg 19.

The member 17 is further provided with an outwardly directed locking prong 24 which is located adjacent the projection 23 on each leg 19, and a shorter outwardly directed retaining prong 25 on the bight 18, adjacent the projection 23 thereon.

These prongs are preferably provided by punching out the sheet material of the member 17, as is clearly indicated in Figs. 4, 5 and 8.

The legs 19 of the member 17 preferably have their free end edges on convex arcs whose centers are at points 26 Figs. 4 and 8, for reasons later to appear. These free end edges may also be formed straight as indicated in dotted lines in Fig. 3 in which showing the finger holding and compressing tab extension are also eliminated.

While the present invention comprises primarily a stack retaining and cup releasing means for cooperation with the lower open end of a paper cup carton, it also includes as an operative part thereof means for releasably retaining itself within the open end of such a carton and at the same time locking the carton to the inner walls of an enclosing receptacle, so as to be supported thereby, all as is clearly shown in Fig. 5.

In the use of the invention therefore a paper carton P containing a stack of nested cups C of commercially packed form is altered to the extent only of having the lower end flaps *f* thereof cut or torn away in order to provide an open lower end in the carton.

The open ended carton will preferably be inverted when removing the flaps to prevent escape of the cups therefrom and the carton may then be telescoped within the casing 10 of a cup dispensing receptacle.

The stack retaining and cup releasing member 17 may next be inserted within the open end of the paper carton P, immediately upon opening of same and before the carton is telescoped within a supporting receptacle or afterwards, as one prefers. This latter method, which is preferable, will now be described.

The resilient U-shaped member 17, will then be grasped and compressed between the thumb and forefinger by engaging the two tab extensions 21. The normally diverging leg portions 19 will thus be forced toward each other and the member then positioned as in Fig. 8 with the flange 20 engaging the lower edge of the casing back wall 13, as well as the lower edge of the companion wall of the carton.

While thus holding the member 17 compressed it may then be easily moved into the open end of the carton by pivotal movement about points 26. Now it will be noted that the convex front ends of the legs 19 will clear the front walls of the casing and carton upon such inward pivotal movement of the member 17, until the shoulders *x* on tab extensions 21 abut the lower front edge portions of the side walls of the superposed carton and casing. The member 17 is then in operative position relative to the lower edges of the carton. During this movement the rear relatively short prong 25 will be caused to partially penetrate the rear wall of the paper carton. The member 17 having been now fully positioned within the open ends of the carton, as in Fig. 3, thumb and finger pressure on lugs 21 may be released with a resulting lateral outward movement of the legs 19 into forcible frictional contact with opposite inner walls of the carton P.

Upon such outward movement of the legs 19 the relatively long prongs 24 will be caused to penetrate entirely through opposite walls of the carton and their free ends will enter the aligned casing recesses 10*a*.

It will be seen from the foregoing that the prongs 24 and 25 removably secure the member 17 to the carton walls in position to retain the stack of cups and releasably support the lowermost cup of the stack. It will also be seen that

the prongs **24** further function to secure and/or lock the carton P and member **17** against axial movement within the casing **10**.

As is clearly shown in Fig. 5, the elongated ribs or projections **23** are engaged by the lower edge of the bead F of the lowermost cup C. Such projections accordingly retain the entire stack of cups in position within the open bottom carton.

The casing **10** may be suspended from a wall or other support by suitable means engageable within the key hole slots **16** in which arrangement and with the structure in the position of Fig. 5, the cup releasing and dispensing operation is carried out as illustrated in Fig. 7, i. e., by merely grasping the lower end of the lowermost cup C, which projects from the lower ends of the open bottom casing and carton.

While the projections **23** normally retain the stack of cups in position, substantially little effort is required to release the lowermost cup upon downward axial pull thereon, for the reason that the paper head F will readily yield to such downward pressure and thereby pass the rounded projections **23** without damage to either.

While the structure in its preferred form includes the outer rigid supporting casing **10** it is nevertheless to be understood that the resilient stack retaining and cup releasing member **17** may be advantageously used within the usual paper cup carrying carton alone. In such instance, the prongs **24** may be of the same length as prong **25**.

While I have disclosed my invention in accordance with a preferred structural embodiment thereof, such is to be considered as illustrative only and not restrictive, the scope of the invention being defined in the subjoined claims.

What I claim and desire to secure by U. S. Letters Patent is:

1. A cup dispensing device comprising a generally U-shaped resilient member having a bight portion and two leg portions normally diverging from said bight portion, a cup retaining means comprising projections on each of said legs and bight portions and extending inwardly therefrom and adapted to engage and retain the cups in proper position for the dispensing thereof, a securing means comprising outwardly directed penetrating prongs having free ends adapted to penetrate the walls of a carton containing the cups to retain said resilient member in operative position with the cups, a flange extending outwardly from the lower edge of said bight portion for initially engaging the lower edge of a wall of the carton upon the insertion of said member into the carton, the free end edges of said leg portions being arcuate in concentricity to points in the line of juncture of the flange and bight portion, and finger engageable tabs extending downwardly from the legs adjacent the free ends thereof.

2. A resilient paper cup retaining and dispensing member for removable operative disposition within the lower open end of a paper carton having a stack of nested flanged paper cups supported therein, said member comprising a bight portion and leg portions normally diverging from said bight portion, a flange extending outwardly from the lower edge of said bight portion for initially engaging the lower edge of a wall of the carton, the free end edges of said leg portions being arcuate in concentricity to points in the line of juncture of the flange and bight portion, and finger engageable tabs extending downwardly from the legs adjacent the free ends thereof.

3. A cup dispensing device comprising an elongated rigid tubular casing telescopingly receiving an elongated paper carton adapted to contain a stack of nested flanged drinking cups therein with the lower end of the carton open, a generally U-shaped resilient member removably engageable within the open lower end of the carton, said resilient member having a bight portion and leg portions normally diverging from the bight portion thereof, cup flange engaging and retaining means projecting inwardly from the resilient member, outwardly extending carton wall penetrating prongs on said leg portions securing said resilient member in the open end of the carton, said casing having inwardly opening laterally aligned recesses in opposed walls thereof receiving said outwardly extending prongs therein by reason of the normally diverging disposition of said legs thereby retaining said carton and resilient member in operative position within said casing.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,454,783	Yetter	May 28, 1923
2,562,599	Buttermann	July 31, 1951