Dec. 7, 1943. K. T. BUTTERY 2,335,914

CUP PACKAGE AND CARTON THEREFOR

Filed Feb. 2, 1942 2 Sheets-Sheet 1

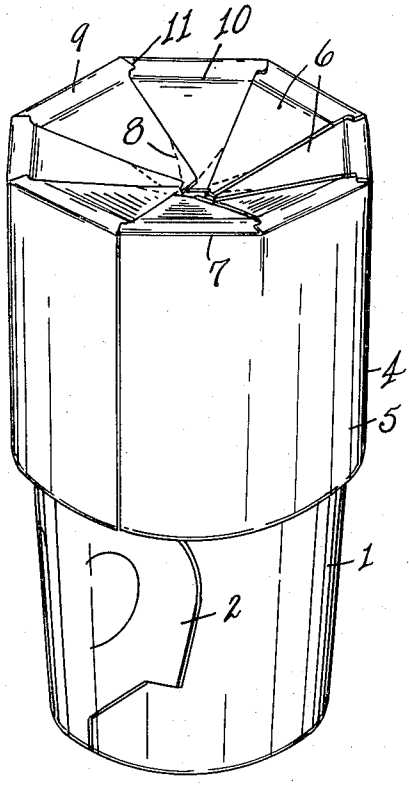


Fig. 1.

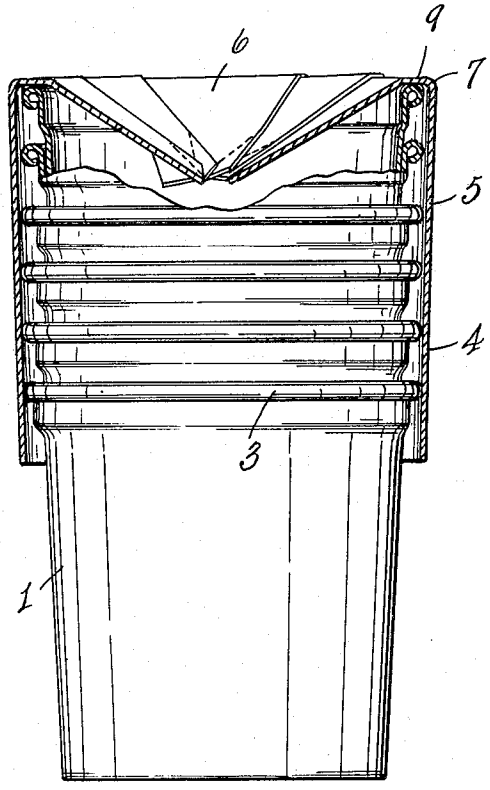


Fig. 2.

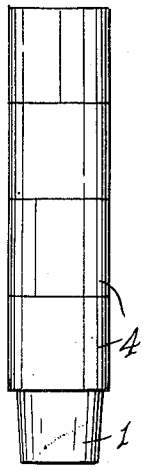


Fig. 4.

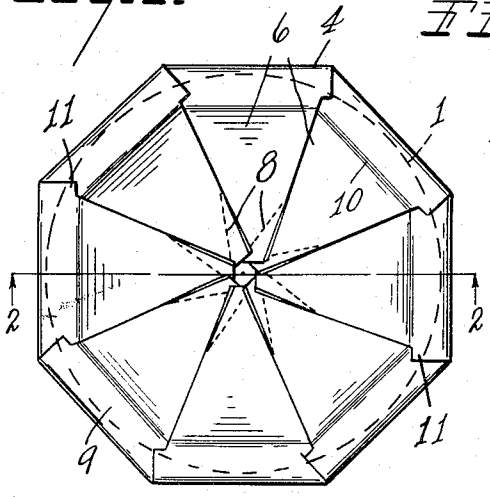


Fig. 3.

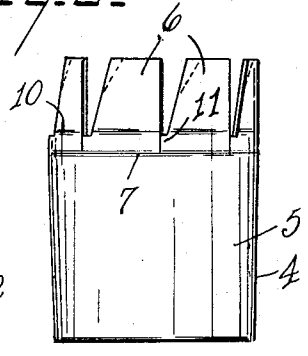


Fig. 5.

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CUP PACKAGE AND CARTON THEREFOR

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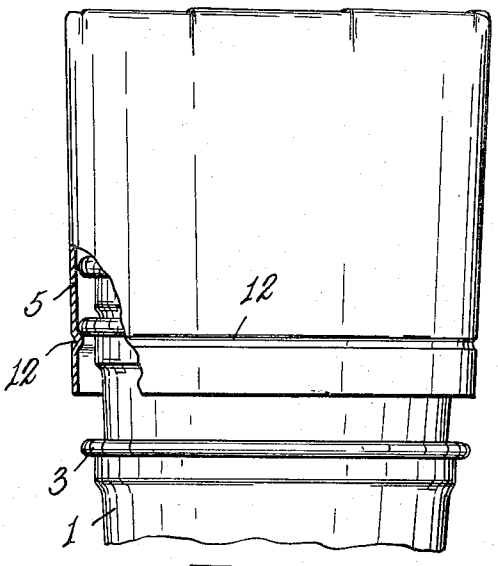


Fig. 6.

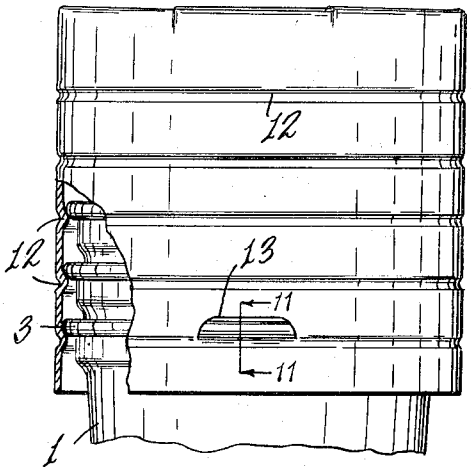


Fig. 10.

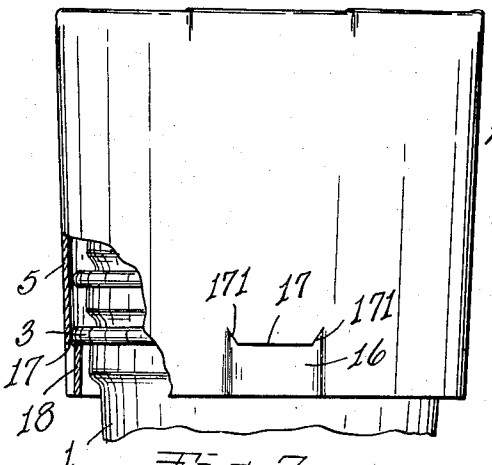


Fig. 7.

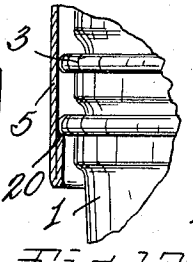


Fig. 12.

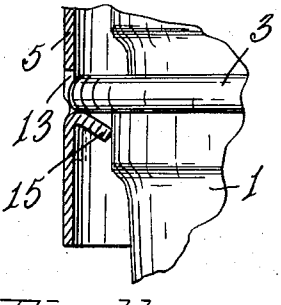


Fig. 11.

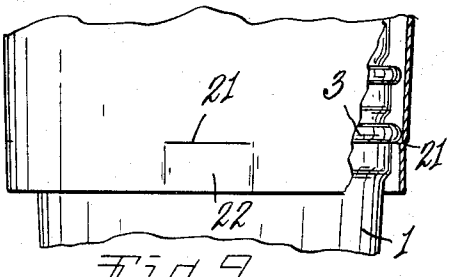


Fig. 9.

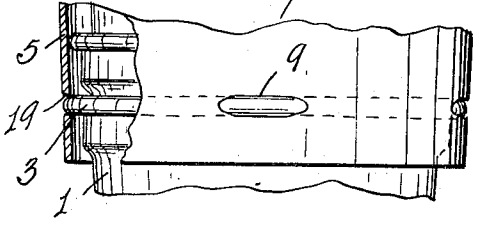


Fig. 8.

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CUP PACKAGE AND CARTON THEREFOR

Kenneth T. Buttery, Kalamazoo, Mich., assignor to Sutherland Paper Company, Kalamazoo, Mich., a corporation of Michigan

Application February 2, 1942, Serial No. 429,256

11 Claims. (Cl. 206—56)

This invention relates to improvements in cup packages and cartons therefor.

The main objects of this invention are:

First, to provide a carton for a plurality of nested paper cups from which the cups may be withdrawn one by one, the carton being provided with a closure which permits the assembling of a plurality of similar cartons into a shipping package or into a compact form for storage.

Second, to provide a package unit for nested paper cups or receptacles well adapted as a retail package and which is very economical, effectively retains the cups for handling while permitting their easy withdrawal one by one.

Third, to provide a package unit for paper receptacles which permits the convenient handling of a plurality of cups, at the same time one in which the rim portions are protected until the cups are withdrawn from the carton.

Fourth, to provide a structure having these advantages in which a stack of nested cups may be quickly inserted in the carton, the carton closed and a plurality of similar cartons assembled with one carton of the assembled group in end to end relation with the bottom container of one carton nested within a carton on which it is superimposed.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is defined in the claims.

Preferred embodiments of the invention are illustrated in the accompanying drawings, in which:

Fig. 1 is a perspective view of a package unit of paper cups embodying the features of my invention.

Fig. 2 is a side elevation partially in vertical section on a line corresponding to line 2—2 of Fig. 3 of the package unit of Fig. 1.

Fig. 3 is a plan view of a closed carton showing the normal relation of the closure parts after a series of the package units has been assembled in a stack.

Fig. 4 is a side elevation illustrating the assembled or stacked relation of a plurality of the package units or filled cartons.

Fig. 5 is a side view of the carton of Figs. 1 to 4 inclusive with the top closure flaps in open position.

Fig. 6 is a side elevation partially in section and broken away of a slightly modified form or embodiment of my invention and illustrating the manner of withdrawing the bottom cup.

Fig. 7 is an elevational view partially in section and partially broken away showing a modified form of means for releasably retaining the cups within the carton.

Fig. 8 is a fragmentary view partially in section and partially broken away showing a further modification in the cup retaining means.

Fig. 9 is a fragmentary side elevation partially in section showing a modified form of detent or retaining means for the cups.

Fig. 10 is a further embodiment or modification of the cup retaining means in which the wall of the carton is provided with a plurality of internal annular beads and internal retaining lips in cooperation with the bottom bead.

Fig. 11 is an enlarged fragmentary view partially in vertical section on line 11—11 of Fig. 10.

Fig. 12 is a fragmentary view partially in section of another form of cup retaining means.

In the accompanying drawings, I have shown my invention as embodied in structures designed for packaging paper cups, but it will be understood that the term "cups" is used in this specification and in the accompanying claims as a matter of convenience and the particular design or purpose of the cup or container is unimportant with the exception that my improvements are especially adapted for tapered cups or containers—that is, cups or containers that may be nested.

In the accompanying drawings, the paper cup 1 is of the tapered type having a collapsible handle 2 and provided with a bead-like rim 3. It will be understood, however, that the particular details of the cup form no part of this invention except that the full advantages of my invention are only attained when the cups are of a character which permits their compact nesting or arrangement in stacks.

In the structure illustrated, the cartons 4 are designed to receive six cups, this being a convenient package for retail trade and also for handling in the various situations where paper cups are used or desirable.

In the preferred embodiment shown in Fig. 1, the carton comprises the downwardly tapered tubular body 5 of proper diameter to receive the stack of nested cups—in this case six, the diameter at the lower end being such as to retainingly engage the rim 3 of the lower cup with the body of the cup projecting from the open bottom of the carton, so that it may be grasped for withdrawing from the carton.

I am aware that dispensing cartons have been provided in which stacks of cups and other suitable containers are arranged within the carton and designed to be withdrawn one by one.

At the top, the carton body 5 is provided with

a plurality of segmental closure flaps 6 designed to be folded inwardly to closure position with one edge of each closure flap overlapping the edge of an adjacent closure flap—see Fig. 1.

In practice, the cartons are formed with the closure flaps upstanding as shown in Fig. 5, and a flexing score or hinge line 7 formed at the union of the flaps with the side wall of the body 5 of the carton. After the stack of nested cups have been inserted from the open top of the carton, these flaps 6 are folded inwardly successively into their overlapping closure relation and it is found in practice that this operation may be very rapidly performed by hand although mechanical means might be provided if desired.

At their inner ends, the closure flaps preferably have diagonally disposed weakened lines 8—that is, the weakened lines 8 are disposed diagonally relative to their overlapping edges and this is found to facilitate their collapsing inwardly for purposes which will be pointed out.

The portions 9 of the closure flaps overlie the rim of the top cup of the stack and there may be provided a second flexing line or zone 10 at the inner side of these portions 9 although the mere act of folding the flaps inwardly and compressing them into an inwardly inclined relation which prevents their springing out from their closure position tends to break the stock at this point. The parts 9 are preferably provided with projecting portions 11 at one end which overlap the adjacent portion 9.

With these closure flaps folded inwardly providing a closed assembled package unit, a series of package units may be assembled in a stack as shown in Fig. 4, the projecting bottom cups of one package unit being thrust into the top of a similarly filled package unit which depresses the closure flaps within the top cup of the stack. However, when one of the units is withdrawn from another, the closure flaps through their inherent resiliency spring up to closed position so that a plurality of the package units may be stacked together for shipping with the bottom of one unit resting upon the top of the unit upon which it is superimposed as shown in Fig. 4 and the units separated as desired for retail purposes or for use or convenience in transportation.

As stated, in the preferred embodiment shown in Figs. 1 to 5, the cartons are tapered and when properly tapered the cups are effectively retained. However, if desired, retaining means may be formed in the wall or body of the carton.

In the embodiment shown in Fig. 6, the retaining means is in the form of an annular internal bead 12 with which the lower cup engages.

In Fig. 10, there is a vertically spaced series of these internal beads and they serve the additional function of making the wall of the carton more rigid. If desired, the engaging means may be further amplified by slitting the wall at 13 and turning in the tongue-like portions 15.

In Fig. 7, the retaining members 16 are formed by providing slits 17 having upwardly inclined ends 171 and striking in the annularly spaced portions 18. This provides cam-like portions at the ends of the struck-in detent 16.

In the embodiment shown in Fig. 8, the retaining means is provided in the form of slots 19.

In the embodiment shown in Fig. 12, the lower end of the body 5 is turned inwardly providing an annular ledge-like portion 20, while in Fig. 9 slits 21 are provided in spaced relation to the bottom of the carton and portions 22 struck inwardly to provide the retaining means.

In all of these figures, the primary function of the retaining means is to insure that the cups shall be releasably retained.

I have not illustrated my improvements in adaptations for various types of cups or containers as it is believed that these disclosures will enable those skilled in the art to embody my invention according to the particular design or shape of the cup or container. It will be understood that the scope of the invention is pointed out in the appended claims and that, as stated, the term "cups" is herein used as comprehending containers.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A package unit comprising a plurality of tapered nested cups provided with rims, and a tubular carton open at the bottom receiving and embracing the rims of the nested cups with the lower cup of the stack projecting from the lower end of the carton permitting grasping thereof for withdrawal, said carton having a top closure comprising a plurality of segmental closure flaps hingedly connected to the top edge of the carton and foldable inwardly over the stack of cups with one longitudinal edge of each closure flap overlapping the edge of an adjacent closure flap, said closure flaps having diagonally disposed flexing lines of perforations at the inner ends of their overlapping edges facilitating their being collapsed inwardly, said closure flaps also having transverse flexing zones at the inside of the rim overlapping portions thereof, and being depressible within the top cup of the stack within the carton to receive the projecting bottom cup of a superimposed package unit whereby a plurality of package units may be assembled in stacked relation with the lower edge of the carton of one unit resting upon the top of the carton of the adjacent lower unit.

2. A package unit comprising a plurality of tapered nested cups provided with rims, a tubular carton open at the bottom receiving and embracing the rims of the nested cups with the lower cup of the stack projecting from the lower end of the carton permitting grasping thereof for withdrawal, said carton having a top closure comprising a plurality of segmental closure flaps hingedly connected to the top edge of the carton and foldable inwardly over the stack of cups with one longitudinal edge of each closure flap overlapping the edge of an adjacent closure flap and being depressible within the top cup of the stack within the carton to receive the projecting bottom cup of a superimposed package unit whereby a plurality of package units may be assembled in stacked relation with the lower edge of the carton of one unit resting upon the top of the carton of the adjacent lower unit.

3. A package unit comprising a plurality of tapered nested cups provided with rims, a tubular carton open at the bottom receiving and embracing the rims of the nested cups with the lower cup of the stack projecting from the lower end of the carton permitting grasping thereof for withdrawal, the wall of the carton being provided with an internal annular rib for releasable retaining engagement with the rim of the lower cup of the stack, said carton having a top closure comprising a plurality of segmental closure flaps hingedly connected to the top edge of the carton and foldable inwardly over the stack of cups into overlapping relation and depressible within the top cup of the stack within the carton to receive

the projecting bottom cup of a superimposed package unit whereby a plurality of package units may be assembled in stacked relation with the lower edge of the carton of one unit resting upon the top of the carton of the adjacent lower unit.

4. A package unit comprising a plurality of tapered nested cups, and a tubular carton open at the bottom receiving and removably retaining the stack of cups with the lower cup of the stack projecting from the lower end of the carton permitting grasping for withdrawal, said carton having a top closure comprising a plurality of segmental closure flaps hingedly connected to the top edge of the carton and foldable inwardly over the stack of cups with one longitudinal edge of each closure flap overlapping the edge of an adjacent closure flap, said closure flaps having diagonally disposed flexing lines of perforations at the inner ends of their overlapping edges facilitating their being collapsed inwardly, said closure flaps being depressible within the top cup of the stack within the carton to receive the projecting bottom cup of a superimposed package unit whereby a plurality of package units may be assembled in stacked relation with the lower edge of one unit resting upon the top of the carton of the adjacent lower unit.

5. A package unit comprising a plurality of tapered nested cups, and a tubular carton open at the bottom receiving and removably retaining the stack of cups with the lower cup of the stack projecting from the lower end of the carton permitting grasping for withdrawal, said carton having a top closure comprising a plurality of segmental closure flaps hingedly connected to the top edge of the carton and foldable inwardly over the stack of cups with one longitudinal edge of each closure flap overlapping the edge of an adjacent closure flap, said closure flaps being depressible within the top cup of the stack within the carton to receive the projecting bottom cup of a superimposed package unit whereby a plurality of package units may be assembled in stacked relation with the lower edge of one unit resting upon the top of the carton of the adjacent lower unit.

6. A package unit comprising a plurality of tapered nested cups, and a downwardly tapered tubular carton open at the bottom receiving and removably retaining the stack of cups with the lower cup of the stack projecting from the lower end of the carton permitting grasping for withdrawal, said carton having a top closure comprising a plurality of closure flaps separately hingedly connected to the top edge of the carton and foldable inwardly over the stack of cups into overlapping closure forming relation, said closure flaps being yieldably collapsible within the top cup of the stack within the carton when the projecting bottom cup of a similar superimposed package unit is inserted therein and act to return to closure position when the units are separated.

7. A package unit comprising a plurality of tapered nested cups, and a tubular carton open at the bottom receiving the stack of cups with the lower cup of the stack projecting from the lower end of the carton permitting grasping for withdrawal and having internal cup retaining means, said carton having a top closure comprising a plurality of closure flaps separately hingedly connected to the top edge of the carton and foldable inwardly over the stack of cups into overlapping closure forming relation for sanitary protection of the interior of said cups, said closure flaps being yieldably collapsible within the top cup of the stack within the carton when the projecting bottom cup of a similar superimposed package unit is inserted therein and act to return to closure position when the units are separated.

8. A carton for a stack of tapered nested cups provided with rims comprising a tubular body open at the bottom and adapted to receive and removably retain a stack of nested cups with the lower cup of the stack projecting from the lower end of the carton permitting grasping for withdrawal, said carton having a top closure comprising a plurality of segmental closure flaps separately hingedly and resiliently connected to the top of the closure and foldable inwardly over the stack of cups and into edge overlapping relation to each other, said closure flaps being depressible within the top cup of a stack to permit the insertion of the projecting bottom cup of a similar superimposed carton into the top of the carton whereby a plurality of cartons with stacks of nested cups therein may be assembled in stacked relation with the lower edge of one carton resting upon the top of the carton on which it is superimposed.

9. A carton for a stack of tapered nested cups, comprising a tubular body open at the bottom receiving and removably retaining a stack of cups with the lower cup of the stack projecting from the lower end of the carton permitting grasping for withdrawal, said carton having a top closure comprising a plurality of closure flaps separately hingedly and resiliently connected to the top edge of the carton and foldable inwardly over a stack of cups into closure forming relation and collapsible within the top cup of a stack within the carton when the projecting bottom cup of a similar filled superimposed carton is inserted therein, whereby a plurality of filled similar cartons may be assembled in stacked relation and are frictionally retained in such relation.

10. A carton for a stack of tapered nested cups provided with rims, comprising a tubular downwardly tapered body open at the bottom adapted to receive and embrace a stack of nested cups with the lower cup of the stack projecting from the lower end of the carton permitting grasping thereof for withdrawal, said carton having a top closure comprising a plurality of segmental closure flaps foldable inwardly over the stack of cups into overlapping relation and yieldably depressible within the top cup of the stack therein.

11. A carton for nested cups comprising a downwardly tapered tubular carton open at the bottom receiving and removably retaining the stack of cups with the lower cup of the stack projecting from the lower end of the carton permitting grasping for withdrawal, said carton having a top closure comprising a plurality of closure flaps collapsible inwardly over the stack of cups into closure forming relation and yieldably collapsible within the top cup of the stack within the carton when the projecting bottom cup of a similar filled carton is inserted therein, said closure flaps returning to closure position when the inserted cup is withdrawn.

KENNETH T. BUTTERY.