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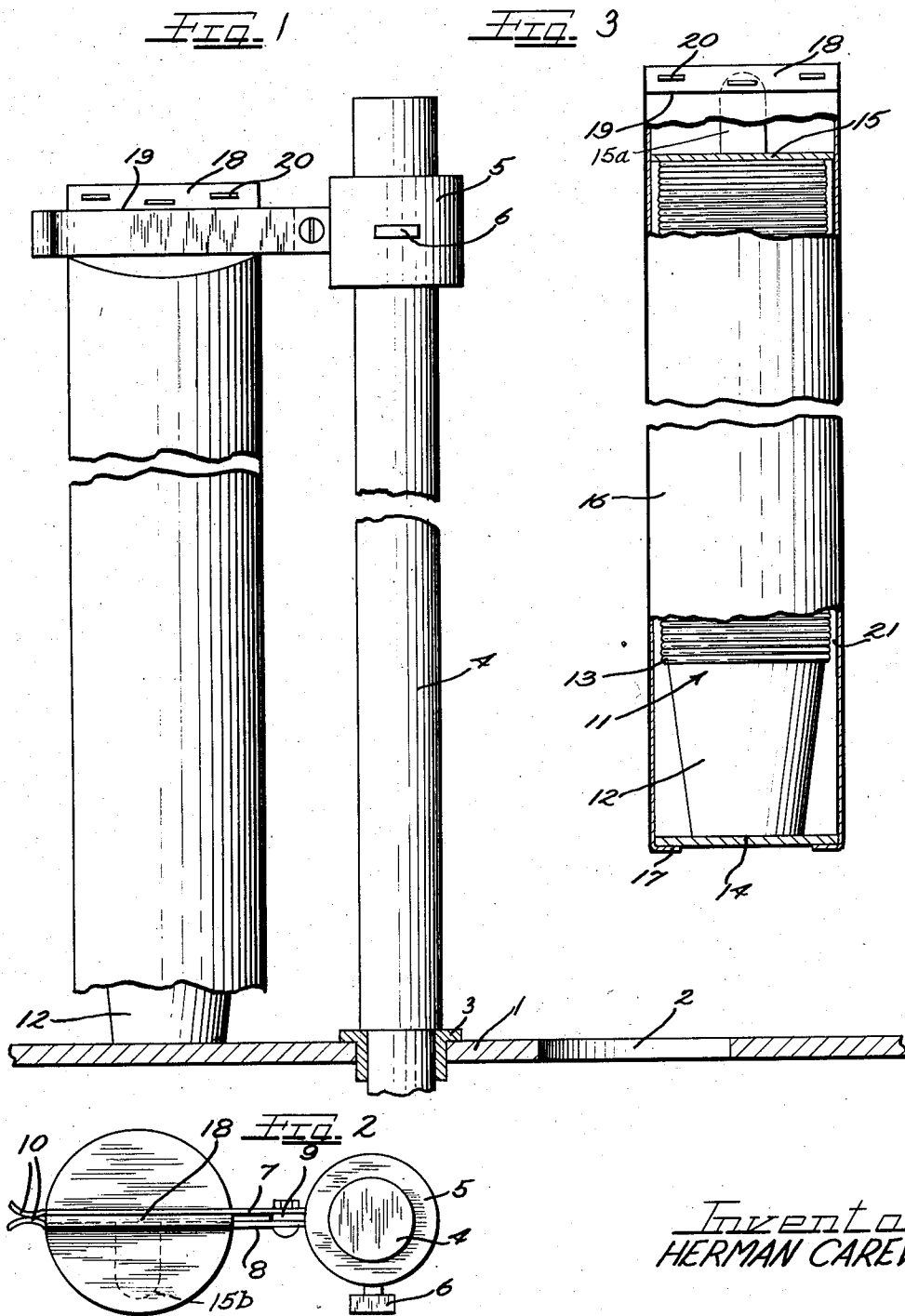
H. CAREW

2,889,923

CUP CARRYING PACKAGE

Filed Nov. 9, 1955

2 Sheets-Sheet 1



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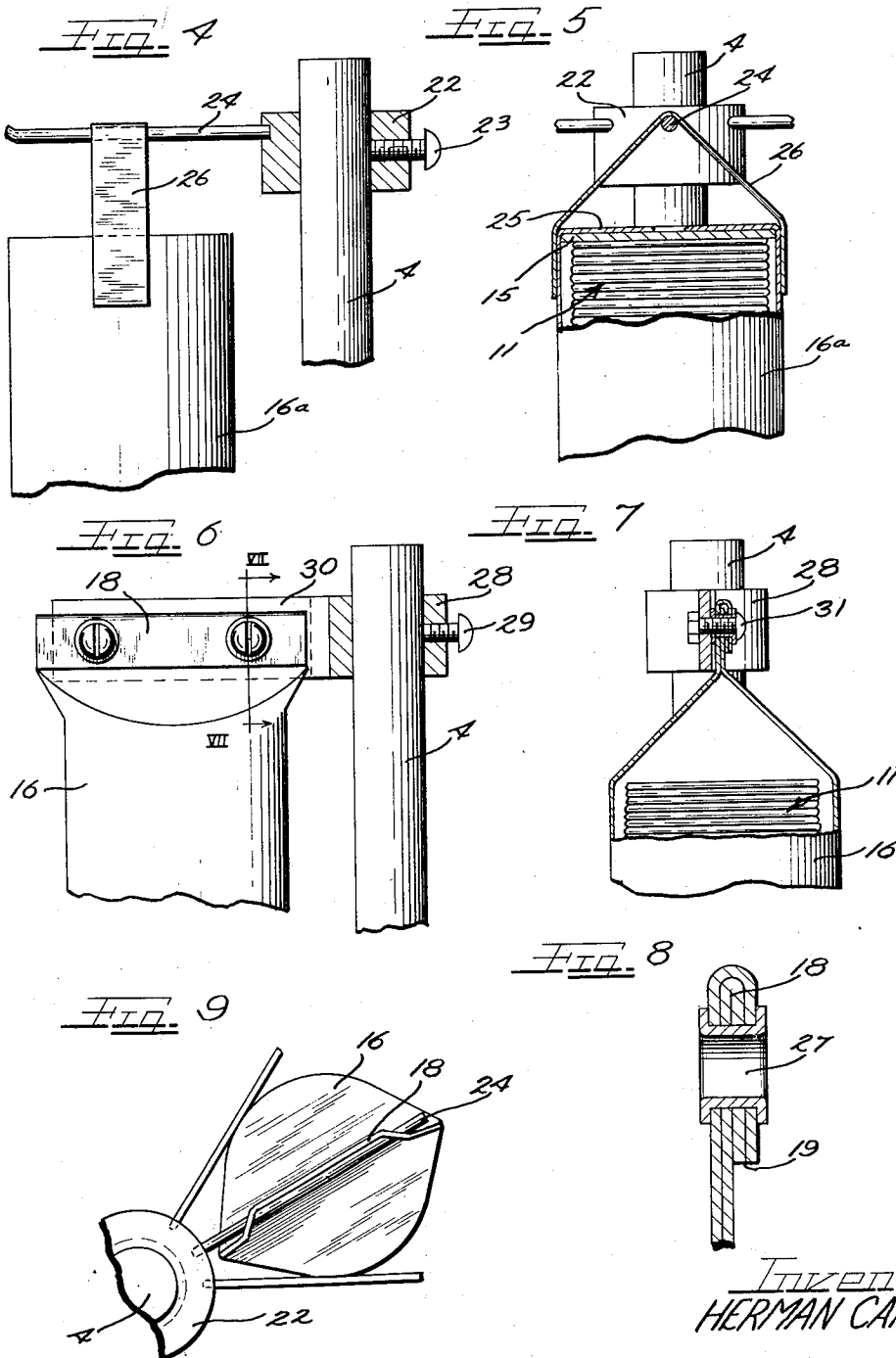
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CUP CARRYING PACKAGE

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Application November 9, 1955, Serial No. 545,919

1 Claim. (Cl. 206—56)

This invention relates to improvements in a cup carrying package, and more particularly to a package of paper cups, receptacles, containers, or the like, the casing of which package is easily removed and easily disposed of, the invention being highly desirable for use in connection with dispensing machines of various types, wherein a cup is dropped and then filled with a particular commodity, although the invention will have other uses and purposes as will be apparent to one skilled in the art. The instant application is a continuation-in-part of my copending application entitled Cup Carrying Package, filed October 21, 1952, Serial No. 316,048, which is a division of my prior application entitled Cup Carrying Structure for a Bulk Beverage Vending Machine, filed February 10, 1950, Serial No. 143,544, now issued in Patent No. 2,708,531, dated May 17, 1955.

Heretofore, paper cup packages as utilized in automatic beverage dispensing machines wherein a container would be deposited and filled with a predetermined amount of some beverage upon the deposition of a coin, and in other locations such as dairy plants wherein paper containers were dispensed and filled with some commodity for later sale to a retailer, as well as in various other locations, most frequently were stacked in nested relationship within a paperboard carton. The stack of cups in most cases was removed from the carton, thus leaving the cups exposed to the air in an unsanitary manner, and when servicing such machines to replenish the supply of cups, the elongated paperboard cartons were difficult to dispose of, especially if a number of such cartons were necessary to properly stock a cup handling apparatus. Also, such paperboard cartons as heretofore used were objectionably bulky, objectionably heavy, and added both to the space necessary as well as to the cost of shipping the paper cups from place to place.

The cost of servicing cup handling apparatus is a major factor both in regard to vending machines and in regard to use of such apparatus in manufacturing plants. The disposal of an empty paperboard carton really presented a serious problem since vending machines are frequently located in confined spaces, such as subway stations, theater lobbies, and the like, where disposal means are not readily available. Likewise, the disposal of such paper cartons would require an objectionable amount of space in a factory or manufacturing plant. Therefore, the disposal of such cartons assumes the significance of a separate procedural operation whereby the cost was objectionably increased. Further, where a machine employs a rotary supporting apparatus capable of handling a plurality of stacks of nested paper cups, it was heretofore necessary to remove all the stacks from the paperboard cartons so that they would be available for use. This violated certain sanitary requirements in various communities, and frequently resulted in the requirement that at least the uppermost if not more of the cups be destroyed prior to use since they were exposed to contamination from the air. In any event, in such apparatus, the rim beads of the cups or portions of the cups contacted by the mouth of a user

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are exposed at least within the interior of the machine, and dispensing or cup handling apparatus is not usually dustproof so that the whole stacks of the cups were subject to contamination prior to filling.

5 With the foregoing in mind, it is an important object of the instant invention to provide a package of paper containers which is simple to handle, and from which the outer closure need not be removed from cup handling apparatus until the last cup has been utilized.

10 Another object of the invention is the provision of a paper container package wherein a stack of nested paper cups are enclosed and fully protected, at least as to the portions thereof ultimately contacted by the mouth of a user, until the last cup of the stack is dispensed or filled.

15 It is also an object of this invention to provide a paper container package embodying a stack of nested paper cups enclosed by a flimsy wrapper, which is easily removed, crushed in the hands, and then will occupy only an extremely small space in a waste receptacle.

20 Still another object of the invention is the provision of a paper container package embodying a stack of nested paper cups enclosed by a flimsy wrapper in a dustproof manner, there being means provided to suspend the wrapper in proper position, as well as means provided to keep the wrapper expanded so as not to bind the cups but permit free gravitational movement of the cups from without the wrapper when the lower end of the wrapper is removed.

25 Still a further feature of the invention resides in the provision of a paper container package, embodying a stack of nested paper cups enclosed by a flimsy easily disruptable casing of materially greater cross sectional area than the maximum such area of any paper cup therein, and which encloses the paper cups in a dustproof manner, the casing carrying suspension means, and being so constructed that the bottom end of the casing may be torn off after the casing has been mounted in cup handling apparatus in position for use.

30 It is a further feature of the instant invention to provide a package of the character set forth herein embodying a stack of nested paper cups enclosed in a dustproof manner within a frangible easily disruptable casing of materially greater cross sectional area than the maximum such area of the paper cup, with means in the bottom of the casing to temporarily support the stack of cups, and similar means in the top of the casing to maintain the casing expanded after the removal of the bottom supporting means together with the end of the casing, so that all of the cups may freely gravitate from the casing, but the casing will cover all of the cups with the exception of the bottom cup and the main portion of that cup as well so that all cups are maintained in a sanitary condition until the moment of use.

35 While some of the more salient features, characteristics and advantages of the instant invention have been above pointed out, others will become apparent from the following disclosures, taken in conjunction with the accompanying drawings, in which—

40 Figure 1 is a fragmentary part elevational, part sectional view of cup handling apparatus diagrammatically illustrated to some extent, showing the same provided with a cartridge or paper container package embodying principles of the instant invention;

45 Figure 2 is a fragmentary top plan view of a portion of the structure of Fig. 1;

50 Figure 3 is a fragmentary part sectional, part elevational view of the paper container package itself;

55 Figure 4 is a fragmentary part sectional, part elevational view of container handling apparatus showing a paper container package of slightly different form mounted in operating position;

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Figure 5 is a fragmentary part elevational, part sectional view taken from the left side of Fig. 4;

Figure 6 is a fragmentary part sectional, part elevational view of the same general character as Fig. 4, but illustrating a paper container package of still different construction;

Figure 7 is a fragmentary transverse vertical sectional view with parts in elevation, taken substantially as indicated by the line VII—VII of Fig. 6, looking in the direction of the arrows;

Figure 8 is a fragmentary greatly enlarged vertical sectional view through the upper portion of the container package only and taken in the same location on line VII—VII of Fig. 6; and

Figure 9 is a fragmentary top plan view illustrating a different manner of mounting the package of Figs. 6, 7 and 8 in or on cup handling apparatus.

As shown on the drawings:

The instant invention is highly desirable for use with the commonly called flat bottom paper drinking cups, although the invention may be utilized with paper containers and receptacles of various and sundry sizes and shapes, such as the so-called heavy duty receptacles for packaging of cottage cheese and similar products, as well as for other types of paper drinking cups. Usually, however, for cup handling apparatus wherein cups are dispensed and then almost immediately filled with some commodity, flat bottom paper cups are desirable because of their stability, and so the instant invention is illustrated and described herein in connection with that form of paper cup.

With reference now to Figs. 1 to 3 inclusive of the drawings, there is diagrammatically indicated a cup handling apparatus embodying a table or platform 1 having a cup discharging opening 2 therein, and equipped centrally with a bearing sleeve or the equivalent 3. A rotary support, such as a hollow shaft 4, driven by any suitable means not shown, extends upwardly through the bearing sleeve 3. At the top of the support 4 a collar 5 embraces the support and is held in a desired position of elevation by a set screw 6 or equivalent means.

In this instance, the container package supporting arrangement projects laterally from the collar 5 and embodies a pair of confronting spring blades 7 and 8 suitably mounted on an integral projection 9 on the collar 5. As best seen in Fig. 2, the outer extremities of the spring blades 7 and 8 are preferably bent inwardly and then outwardly as indicated at 10 to contact each other and yet provide a flared notch between the blades for the ready reception of the top portion of a container package.

In Fig. 3 a paper container package is illustrated prior to mounting on cup handling apparatus. The package is shown as it is made in the cup manufacturing plant, as it is utilized for transportation, and as it remains until mounting on the cup handling apparatus.

The package embodies a stack of nested paper containers of the flat bottom type, the stack being generally indicated by numeral 11. Each container comprises a flat bottom, not visible in the drawings, an upwardly and outwardly sloping side wall 12, and a roll rim bead 13 around the mouth of the cup. The cups nest one within the other so that the rim beads come substantially in contact with each other, or these rim beads may be spaced slightly apart, if so desired, depending upon the structure of the cup and possibly upon the character of dispensing mechanism utilized to deliver one cup at a time from the stack.

Underneath the lowermost cup of the stack is a relatively stiff supporting member 14, and in the illustrated instance this supporting member is in the form of a cardboard disk. A similar member 15 is disposed over the top of the uppermost cup. The cups and the disks are enclosed in an air tight manner within a casing 16, and this casing is of a flimsy, frangible, easily disruptable material, such as relatively lightweight paper. The cas-

ing 16 is flexible and much thinner than either of the disks 14 and 15. The lower marginal portion of the casing 16 is preferably turned under the bottom disk 14 as indicated at 17, and secured to that disk by a cementitious substance or in an equivalent manner to effect a positive seal. The casing extends above the upper disk 15 and then is brought together, and reversely folded upon itself to provide in effect a transverse suspension bar 18 having a shoulder on one side as indicated at 19. The folds of the upper end of the casing may be held together by any suitable means such as staples 20.

Now it is to be especially noted as clearly seen in Fig. 3 that both disks 14 and 15 as well as the flimsy casing 16 are all of a materially greater cross sectional area than the maximum such area of any paper cup in the stack. Thus when the flimsy wrapper is fully expanded by virtue of the disks 14 and 15, there is a definite space 21 between the casing and the rim beads of the cups. The cups are clearly not bound by the casing 16, but are merely loosely enclosed in that casing so as to maintain necessary sanitation.

When it is desired to utilize the container package above described, it is a simple expedient to slide the upper portion of the casing between the spring blades 7 and 8 until the bent portions 10—10 contact each other outside the edge of the supporting fold 18. The shoulder 19 at the bottom of the fold may rest on top of one of the blades 7 or 8, and the entire package is thus suspended from the blades. After suspending the package in proper position for use, it is a simple expedient for the operator to press his thumb nail or the like into the casing above the bottom disk 14, and with a snap-like tearing movement rip off the lower end of the casing and remove the disk 14 simultaneously. In fact, the tearing off of the end of the casing is more of a shearing action by virtue of the lower disc causing the disruption of the casing after the insertion of the operator's thumb nail just above the disc. The disc thus insures a substantially straight severance of the casing wall. This permits the stack of cups to freely drop within the casing as shown in Fig. 1 of the drawings wherein the lowermost cup is resting upon the platform 1. When the cups move around the platform 1 until the dispensing opening 2 is reached, the cups may freely enter that opening. There is nothing to interfere with the gravitational drop of the stack of cups, and the upper disk 15 maintains the casing expanded, so that there cannot be any drag upon the upper one or several cups so that they might inadvertently and unintentionally remain within the casing after the dropping of the remainder of the stack.

As seen in Figs. 2 and 3 the upper disk 15 has a tongue 15a struck therefrom along a line of cut 15b. This tongue is upwardly turned to project into the supporting fold 18 wherein it is engaged by one of the fastening elements 20 to eliminate any possibility of this disc dropping while the cups are gravitating from the casing.

After the cups have been utilized or all of them have dropped out of the casing, it is a simple expedient to remove the casing, crumple it up into a small wad, and deposit it in substantially any form of waste receptacle. Until the last cup is removed from the casing or has dropped therefrom, the cup is maintained in a sanitary condition by virtue of the casing enclosing the major portion of every cup at all times. No portion of a cup that will ultimately come into contact with the lips of a user is exposed until almost the exact moment of use. Further, there are no perforations within the casing so as to admit dust prior to the tearing off of the lower end of the casing, and therefore a number of packages may be stored in a vending machine or stored adjacent other cup handling apparatus without danger of contamination of the cups.

In Figs. 4 and 5 I have shown a somewhat different

construction for the upper portion of the container package. In this instance, a post 4 as above described may be utilized in the cup handling apparatus, and on the top of that post is a collar 22 held in proper position by a set screw 23. Extending outwardly from the collar is a single rod 24. The casing is the same as above described in all details except the top portion. As seen in Fig. 5, the top marginal portion of the casing 16a is laid over the top of the upper disk 15 and secured thereto by cementitious material or in equivalent manner, all as indicated at 25. The upper disk, of course, stiffens the upper end of the structure, and it is a simple expedient to adhesively secure a strap 26 of paper or equivalent material to the upper side wall of the casing 16a. Then the strap 26 may be hung over a protruding arm 24 so as to suspend the container package. Otherwise, the operation when it is desired to use the package is the same as above described.

In Figs. 6, 7 and 8 I have illustrated a still different form of upper construction for the container package. In this instance, the same casing 16 as first described herein is utilized, and the upper end thereof is brought together and reversely folded upon itself to provide a heavy supporting fold 18. In this particular instance, however, the shoulder 19 formed on one side of that fold is not made use of in order to suspend the package. On the other hand, one or more, and in the illustrated instance there are two, spaced apertures provided in the suspension fold 18. Further, in the illustrated instance each of these apertures may be provided with a hollow rivet 27 therethrough which serves to maintain the fold 18, and stiffen the same. Such a construction may be mounted in container handling apparatus in several ways. One of these ways is illustrated in Figs. 6 and 7 wherein a supporting post 4 is provided at the top with a collar 28 held in proper position by a set screw 29. A flat arm 30 extends from that collar and this arm is apertured at spaced points to accommodate a bolt and nut assembly 31 of which the bolt extends through a hollow rivet 27 in the supporting fold of the package. It is a simple expedient, therefore, to remove the bolt assemblies, place the package in position, and tighten the bolt assemblies through the respective hollow rivet 27 and the package is mounted.

In Fig. 9 I have illustrated a still different form of mounting this type of container package. In the instance of Fig. 9, the same mounting or supporting structure as seen in Figs. 4 and 5 is illustrated, and it is a simple expedient to thread the fold 18 over one of the rods 24 by simply passing the aperture in the supporting fold 18 over the rod from one side of the fold, then bending the fold and passing the other aperture over the rod from the opposite side, as clearly seen in Fig. 9.

Otherwise, the operation of the package illustrated in Figs. 6 to 9 inclusive is the same as above described in connection with Figs. 1 to 3 inclusive.

From the foregoing, it will be apparent that the instant invention may be provided in various structural forms, particularly at the top thereof, for suspending the packages in different types of apparatus. It will also be apparent that I have provided a simple form of container package, that is light in weight, and that embodies a casing that is easily disposed of. It will further be apparent that the casing is so constructed as to preserve adequate sanitation of the cups prior to mounting in container han-

dling apparatus, and will adequately preserve that same sanitation as to all lip contacting portions of the cups until the last cup gravitates free from the wrapper or casing.

It will be understood that modifications and variations may be effected without departing from the scope of the novel concepts of the present invention.

I claim as my invention:

In a sanitary package of paper cups especially adapted for mounting in a dispensing machine and including a substantial stack of nested paper cups of the flat bottom sloping sidewall type, a substantially airtight tubular casing of greater length than the stack of cups enclosing the cups and of an inside diameter cross-sectional area greater than the maximum diametrical cross-sectional area of the lip ends of the cups, said casing comprising a lightweight tearable imperforate substantially airtight paper flimsy relative to the cups, a relatively rigid disk over the uppermost cup in the stack and of a diameter equal to the inside diameter of the paper casing and serving to maintain the upper portion of the casing against inward collapsing so as to remain in spaced relation to the cups, the upper end portion of the paper casing being sealed in airtight relation over said disk, means on the upper end of the casing to coact with suspension means in a dispensing machine, and a second relatively rigid disk engaged within the bottom end of the casing and supporting the flat bottom of the lowermost cup in the stack and having its marginal portion extending laterally substantially beyond the bottom end of said lowermost cup so that there is a substantial free space above said marginal portion alongside the bottom end of the lowermost cup, the lower end of the paper casing being secured in airtight relation to the bottom of said lower disk, the top and bottom sealed relation of the casing and its imperforate substantially airtight structure assuring sanitary enclosure of the stack of cups, the lower end portion of the paper casing just above the lower disk and about said free space being tearably disruptable by insertion of a person's thumb nail with the lower disk acting substantially as a shearing guide and insuring a substantially straight severance of the lower end of the casing in alignment therewith in tearing off the end of the casing to permit the stack of cups to drop down from the casing freely as assured by the upper disk maintaining the casing against collapsing and in expanded oversize relation to the descending cups while a maximum length of the casing remains protectively about the cups, the upper end of the casing being in the form of an upwardly projecting folded suspension bar, said upper disk having a tongue projecting upwardly and secured in said bar.

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