Oct. 21, 1952 C. L. ROY 2,614,687

PAPER CUP DISPENSER

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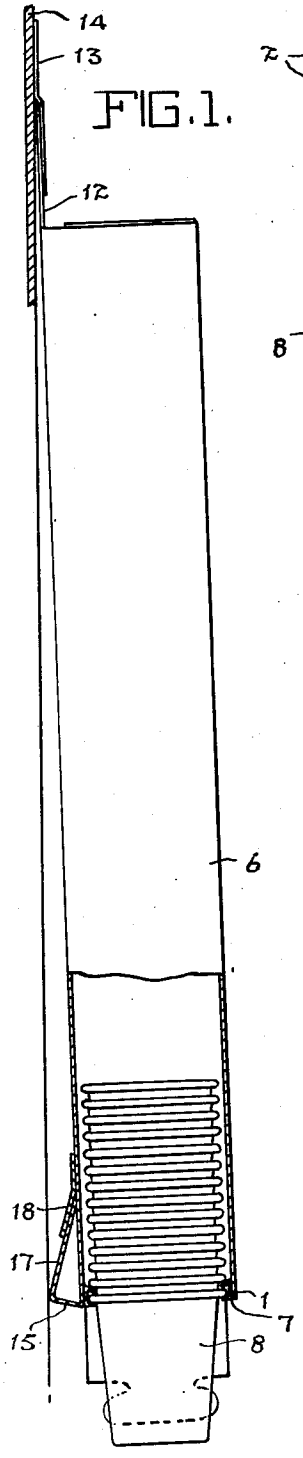


FIG. 1.

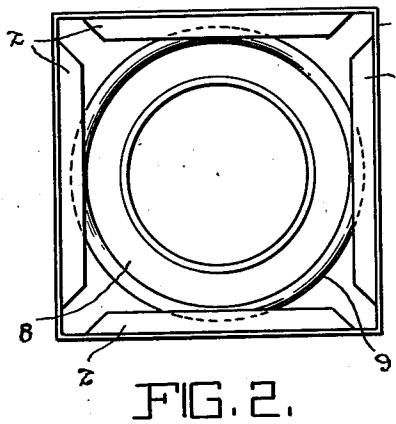


FIG. 2.

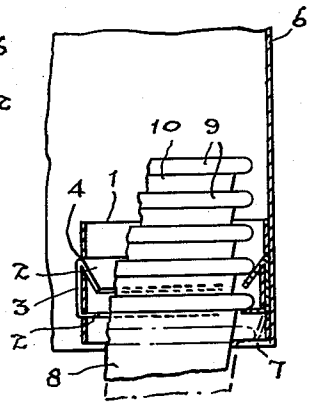


FIG. 3.

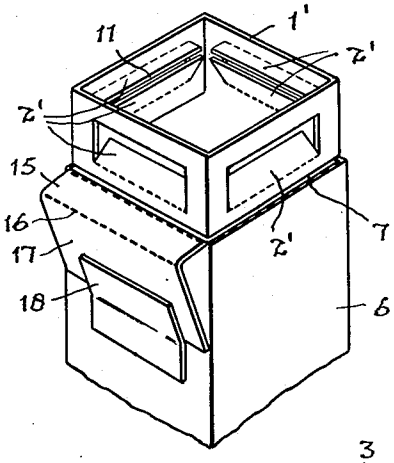


FIG. 4.

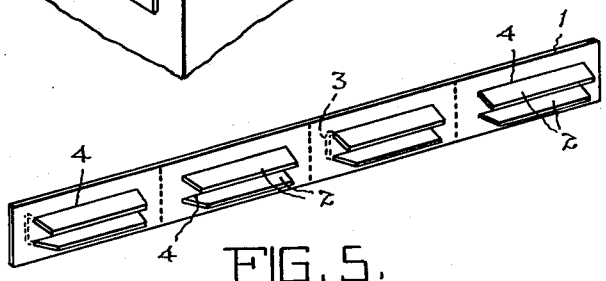


FIG. 5.

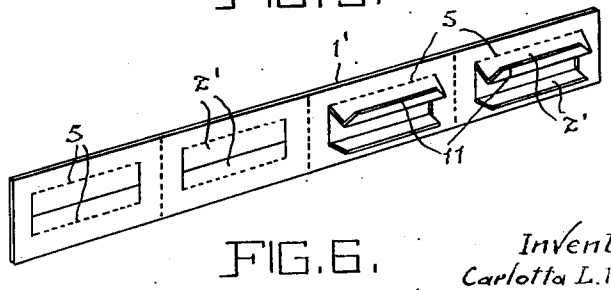


FIG. 6.

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PAPER CUP DISPENSER

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3 Claims. (Cl. 206—56)

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This invention relates to improvements in devices for dispensing nested articles, such as paper cups, ice cream cones and the like, and the principal object of the invention is to provide an extremely simple and inexpensive device which will have a very positive dispensing action, permitting and ensuring that only a single cup or article can be withdrawn at one time to eliminate wastage occurring with present dispensing devices.

A further and very important object is to provide a dispensing device which can be readily secured in the ordinary carton in which the nested articles are shipped whereby the shipping carton may be made at relatively little extra cost into a convenient dispenser having an improved dispensing action over and eliminating the necessity of current permanent dispensers.

A still further object is to enable an ordinary shipping carton in which my dispenser has been or may be incorporated to be supported conveniently for dispensing from any supporting surface without requiring any bracket or other holding means.

The principal feature of the invention consists in forming a dispensing device to fit within the end of a shipping carton and to present a novel arrangement of resilient lips to effect upon a downward pull on the bottom article the positive separation of the bottom article from the remainder of the stack before permitting it to be withdrawn, to ensure that the articles are dispensed individually.

A further important feature consists in providing the shipping carton, which incorporates or may incorporate my dispensing device, with a simple suspension means to secure it to a supporting surface and utilizing the end cover to form a support to hold the dispensing end of the carton clear of the supporting surface and convenient to the grip.

Referring to the accompanying drawings, Figure 1 is an elevational view of a normal shipping carton for paper cups modified for suspension in accordance with my invention with one wall partially broken away to disclose the dispensing lips maintaining the stack in the carton.

Figure 2 is an underside plan view of the dispensing end of the carton.

Figure 3 is a mid-vertical sectional view through the lower dispensing end of the carton illustrating clearly the dispensing action.

Figure 4 is a perspective view of the end of the carton and a dispensing device constructed with my invention in position to be inserted into the carton.

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Figure 5 is a perspective view of my dispensing device in strip form before being shaped for insertion into the carton.

Figure 6 is a view similar to Figure 5 but showing a modified form of dispenser strip.

Referring to the drawing, my dispensing device comprises a supporting strip 1 (Figure 5) from which projects pairs of lips 2 which preferably are formed of plastic or nylon sheeting but may be of any material exhibiting resilient characteristics.

In the form shown in Figure 5, these lips 2 are integral, being connected by the backing 3 and are inserted through slots 4 in the strip 1.

In the modification shown in Figure 6, the lips 2' are actually formed from the strip 1' which itself is a resilient material.

As seen from both Figures 5 and 6, the upper of the lips 2 is inclined downwardly while the lower of the lips is substantially horizontal or turned slightly upwardly, Figure 5, so that their planes intersect to define an acute angle therebetween, and when the strips 1 or 1' are formed by bending along the score lines 5 into the rectangular frame of Figure 4 ready for insertion into the carton 6 the pairs of lips are arranged in diagonally opposite relation.

My dispensing device may either be adhered to the carton blank adjacent the bottom end during the forming of the carton so that it may form a combined shipping medium and dispenser, or the dispenser may be purchased separately and inserted into the carton when received so that the carton then becomes a convenient dispenser. In either case the strips 1 or 1' are adhered within the carton at the bottom or dispensing end 7.

Alternatively, if the carton is formed itself from a material exhibiting resilient properties, the lips 2 may be stamped out directly from the carton blank to provide my dispensing action.

The particular carton illustrated is for the holding of a stack of nested paper cups 8 which are provided with the usual bead upper edges 9, and as will be seen from Figures 2 and 3 particularly the lips 2 project inwardly of the periphery of the bead edges 9 to frictionally engage the wall of the cups 8.

As clearly shown in Figure 3, the spacing 10 between the upper and lower lips provides a slot of sufficient width to receive and admit the bead upper edge 9 of a single cup.

In the dispensing action when the lowermost cup is pulled downwardly the upper downwardly inclined resilient lips 2 engaging the bead edge 9 at diametrically opposite points are deflected

inwardly, permitting the cup edge to pass beneath their lower edges 11, whereupon being suddenly released they recover resiliently outwardly to engage and grip the next successive cup.

Upon clearing the lower edges 11 of the upper lips 2 the bead edge of the cup being withdrawn enters the slot or spacing 10 where movement therefrom is strongly resisted by the lower substantially horizontal lips 2. The fact that the space 10 is sufficient to admit only one bead edge 9 prevents two cups from being drawn down at the same time, and as the lower lips 2 momentarily interrupt the downward movement of the cup being withdrawn the upper lips have sufficient time to recover upon being released to positively grip the succeeding cup. Due to the angular relation between the upper and lower lips and the cups, as shown particularly in Figure 3, with the angles defined between the upper lips and cup being less than the angles between the lower lips and cup, it will be obvious that the upper lips move through a smaller angle of deflection than the lower lips in dispensing thereby offering less resistance to the passage of the cup. Thus a pull on the cup which will withdraw it through the upper lips will not be sufficient to force it past the lower lips so that the cup movement will be positively interrupted as explained. This action ensures complete separation of the lowermost cup from the remainder of the stack, and as the downward dispensing movement is continued the lowermost lips, having served their purpose of interrupting movement sufficiently to permit the separation, yield to permit the bottom cup to be withdrawn.

The positive action of my dispensing lips in ensuring the separation of the lowermost cup before it completes its movement out of the carton prevents a number of cups from being withdrawn as occurs with present dispensing devices. Thus an important saving in present wastage is eliminated to enable full usage of each cup of the stack to be obtained.

For the convenience of the consumer it is desirable that the manufacturer incorporate a dispensing element or device in accordance with my invention directly in the carton 6 so that immediately upon opening the carton it can be used to dispense the contents.

To complete the carton 6 in accordance with my invention a tab 12, which may form one of the closures for the upper end of the carton, is provided with an adhesive layer or film 13 to secure the carton in an upright position to a suitable supporting surface 14. Additionally, one of the closures 15 for the lower end of the carton is scored to be bent at 16 and returned to the wall of the carton, as shown in Figure 1, to form a lateral projection holding the lower end of the carton 7 outwardly from the supporting surface so that the hand may conveniently encircle and grip the lowermost cup.

The ends 17 of the bent closure 15 may be returned under the flap 18 or into a suitable slot provided in the wall of the carton to maintain it in position.

To use the carton the lower end closures 15 are opened and the one closure bent to form the lateral projection described and the tab 12 is fastened to the supporting surface.

The weight of the stack of cups 8 will then force them downwardly against the upper lips 2 of the opposing lip pairs ready for dispensing as described, which, through my novel lip arrangement, ensures that each cup is drawn individually.

The simplicity of construction of the dispensing device will enable it to be incorporated into existing cartons at relatively little increase in cost, or the device may be sold separately to be inserted by the purchaser as a highly desirable low cost article.

While I have particularly described the action of the dispensing device in connection with paper cups, it will be appreciated that it may be utilized in the dispensing of any stack of nested articles, for instance, ice cream cones or the like. The downward incline of the upper opposing lips 2 will permit the lowermost article to move downwardly without rupturing or fracturing the wall of the article being dispensed and will quickly recover to grip the next successive article when the article being dispensed has passed its lower edges 11.

Where a bead is actually not provided on the article being dispensed the lower lips 2 will still exert sufficient friction pressure to provide an interruption in the downward movement of the article being dispensed to allow the upper lips to recover before the second article can be drawn therethrough.

While I have particularly described the preferred embodiment of my invention, it will be understood that various changes and modifications may be made in the illustrated construction without departing from the scope of my invention.

What I claim as my invention is:

1. A dispensing device for a stack of nested articles comprising opposing pairs of upper and lower cantilever snap acting lips, means to support said lips in operative position at the end of a container holding articles to be dispensed and including a dispensing opening, said lips being of a material having a spring flexibility appreciably greater than either of said container or the articles to be received therein to be dispensed and their cantilever arrangement permitting said lips to displace under spring tension under pressure from an article being dispensed without distortion of the article, the upper lip of each pair being inclined downwardly and the lower lip of each pair being substantially horizontal with respect to the plane of said dispensing opening and defining with the upper lip a space therebetween to receive the upper edge of a single article to be dispensed, the planes of said upper and lower lips defining an acute angle therebetween with the upper and lower lips engaging an article being dispensed at different contact angles and the angle between the upper lip and article being less than the angle between the lower lip and article whereby movement of an article being dispensed is resisted through a greater deflection angle by the lower lips than the upper lips.

2. A dispensing device for containers supporting a stack of nested paper cups or the like comprising a frame adapted for mounting at the dispensing end of a container and supporting opposing pairs of cantilever snap acting lips projecting inwardly thereof and arranged to engage cups to be dispensed adjacent the upper edge and on opposite sides thereof, said lips being of a material having a spring flexibility appreciably greater than the cups to be dispensed and with their cantilever arrangement permitting said lips to displace under spring tension under pressure from a cup being dispensed without distortion of the cup, each pair of lips comprising an upper

downwardly inclined lip and a lower substantially horizontal lip spaced from the upper lip and defining therebetween a slot to receive the rim of a single cup, the planes of said upper and lower lips defining an acute angle therebetween with the edges of said upper and lower lips engaging a cup being dispensed at different contact angles and the angle between the upper lip and cup being less than the angle between the lower lip and cup whereby movement of a cup being dispensed is resisted through a greater deflection angle by the lower lips than the upper lips.

3. A dispensing device for a stack of nested articles comprising a substantially rigid holder for the article stack presenting a rectangular opening of a size to permit passage of the articles to be dispensed downwardly therethrough, opposing pairs of cantilever lips of material having appreciably greater resiliency than the articles to be dispensed supported adjacent the sides of said opening to project inwardly of said opening to engage articles being dispensed, each of said lip pairs comprising an upper resilient lip folded downwardly and a lower resilient lip folded upwardly with respect to the sides of said opening, the planes of said upper and lower lips defining

an acute angle therebetween and the edges of said upper and lower lips being vertically spaced with the spacing being limited to support a single article therebetween, said upper and lower lips by virtue of the angularity therebetween engaging an article being dispensed in different angles of contact with the angle defined between the upper lip and article being the lesser restricting deflection of the upper resilient lip under dispensing to less than the lower lip whereby in dispensing an article is engaged by said lips at separate points of its travel with resistance to release offered by the lower lips being greater than the upper lips.

CARLOTTA LEATH ROY.

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