Pattern for forming a paper cup stack holder

In the pattern for forming a paper cup stack holder, the pattern is folded to form a holder body with top (32) and bottom (40) covers and a baffle edge (14). The holder body can be used to store and dispense paper cups (11), and is provided with a two-stage retaining structure (14,40) to ensure that only one paper cup (11) is dispensed at a time.
The present invention relates to the packaging and holding of a stack of paper cups, more particularly to a pattern for forming a paper cup stack holder.

Paper cups are extensively used nowadays. As paper cups are made of paper, they are light, small, stackable, and convenient to carry. Besides, they can be recycled. However, devices for packaging stacks of paper cups are generally plastic bags, plastic cylinders, etc., which are not environmental friendly. Moreover, the packaging has to be done manually, resulting in low packaging speed, long working hours, and possible contamination of the paper cups.

The primary object of the present invention is to provide a pattern for forming a paper cup stack holder to enable paper cups to be packaged in a holder made of paper, which is environmental friendly and which does not require manual packaging so as to reduce work hours and ensure cleanliness of the paper cups. The paper-formed holder enables a stack of paper cups to be neatly and uprightly held therein to facilitate transport and carrying.

Another object of the present invention is to provide a pattern for forming a paper cup stack holder that can be used for storing and dispensing paper cups and that has a two-stage retaining structure to ensure that only one paper cup is dispensed at a time.

The foregoing and other features and advantages of the present invention will be more clearly understood from the following detailed description and the accompanying drawings, in which,

Fig. 1 is a schematic view of the first preferred embodiment of the present invention in an unfolded state;
Fig. 2 is a schematic view of the preferred embodiment in an assembled state;
Fig. 3 is a perspective view of the first preferred embodiment in an assembled state;
Fig. 4 is a sectional view taken along line 4-4 of Fig. 3;
Fig. 5A is a schematic sectional view illustrating how cups are retained according to the present invention;
Fig. 5B is another schematic sectional view illustrating how the cups are retained according to the present invention;
Fig. 6 is a sectional view taken along line 6-6 of Fig. 3;
Fig. 7 is a schematic view of the second preferred embodiment according to the present invention in an extended state;
Fig. 8 is a perspective view of the second preferred embodiment in an assembled state;
Fig. 9 is a schematic view of the third preferred embodiment according to the present invention in an extended state;
Fig. 10 is a perspective view of the third preferred embodiment in an assembled state;
Fig. 11 is a schematic view of the fourth preferred embodiment according to the present invention in an extended state; and
Fig. 12 is a perspective view of the fourth preferred embodiment in an assembled state.

Referring to Figs. 3, 8, 10 and 12, a pattern for forming a paper cup stack holder according to the present invention includes a holder body sheet (20), a plurality of upper edge pieces (30), a top cover piece (32), a bottom cover piece (40), a retaining region (50), and a plurality of reinforcing pieces (60).

The holder body sheet (20) are provided with a plurality of equidistantly spaced apart longitudinal holder body folding traces (21). According to the number of folds, a holder body (10) can be folded into different polygonal shapes, such as the quadrilateral shape in Figs. 1 to 6, the hexagonal shape in Figs. 7 and 8, and the octagonal shape in Figs. 9 and 10. One of the lateral edges of the holder body sheet (20) is provided with an adhering piece (22), which is partitioned from the holder body sheet (20) by a longitudinal folding trace (24) and which is coated with an adhesive or glue so as to adhere to the inner side of another end edge of the holder body sheet (20) when the holder body (10) is folded into shape to thereby fix the shape of the holder body (10). The holder body sheet (20) is provided with a suspension hole dotted line (23) along which part of the holder body sheet (20) can be removed to form a suspension hole (17).

The upper edge pieces (30), which may be in any shape, are provided at a top end of the holder body sheet (20), and are partitioned from the holder body sheet (20) by an upper folding trace (31), whereby the upper edge piece (30) can be folded toward the inside of the holder body (10).

The top cover piece (32) has a shape identical to that of the end face of the holder body (10) and is provided at the top end of the holder body sheet (20). The shape of the top cover piece (32) corresponds to that of the holder body (10). The top cover piece (32) and the holder body sheet (20) are partitioned by a top cover folding trace (33), whereby the top cover piece (32) can be folded toward the upper edge pieces (30) and adhered thereto using adhesive or glue. The top cover piece (32) and the upper edge pieces (30) cooperatively form a top cover (12) of the holder body (10).

The bottom cover piece (40) is likewise identical to the shape of the end face of the holder body (10), and is provided at a bottom end of the holder body sheet (20). The shape of the bottom cover piece (40) corresponds to that of the holder body 10. The bottom cover piece (40) is partitioned from the holder body sheet (20) by a bottom cover folding trace (41). The open edges of the bottom cover piece (40) are respectively provided with enclosing pieces (42).
piece (40) is closed upon the holder body (10), the enclos-
ing pieces (42) are adhered to the outside of the holder body (10) to form a bottom cover (13) of the holder body (10). The bottom cover piece (40) is further provided with an annular tooth-shaped cutting trace (43) section and a retaining portion cutting trace (44). The part of the bottom cover piece (40) confined by the retaining portion cutting trace (44) can be pierced through to form a hole that allows extension of a finger to tear along the tooth-shaped cutting trace (43) so as to form a toothed piece (45) that is separated from the bottom cover sheet (40) but still with a portion thereof connected thereto in a hanging down state. The toothed piece (45) thus torn from the bottom cover piece (40) forms an opening (15) therein to facilitate removal of paper cups. The edge of the opening (15) is in the form of teeth.

The retaining region (50) is disposed proximate to the bottom end of the holder body sheet (20) and provided with upper and lower transverse folding traces (51) and slots (52) respectively corresponding to the holder body folding traces (21). Connecting pieces (53) are disposed between the slots (52). Each connecting piece (53) is centrally and transversely provided with a middle folding trace (54), and upper and lower portions thereof are respectively provided with equidistantly spaced apart slits (55). The middle folding trace (54) enables the connecting pieces (53) to be folded in halves. The two transverse folding traces (51) enable the folded connecting pieces (53) to be folded further toward the interior of the holder body (10). The upper and lower transverse folding traces are adjacent to each other. The connecting pieces (53) project from the inner wall of the holder body (10) in a folded state so as to form a baffle edge (14) for retaining the mouth of a paper cup (11). The slits (55) enable the connecting pieces (53) to form a plurality of separated movable pieces so as to enhance resilience of the structure. The enclosing pieces (42) of the bottom cover piece (40) shield the retaining region (50) when adhered to the holder body (10), secure the folded protrudent shape of the connecting pieces (53) and completely seal the holder body (10) to prevent entry of foreign objects from entering via clearances formed by the slots (52) into the holder body (10) to contaminate the paper cups (11). Adhesive may also be applied to the folded surfaces of the connecting pieces (53) to prevent disengagement.

The reinforcing pieces (60), which may be in any shape, are provided at the bottom end of the inner side of the bottom cover piece (40).

Referring to Figs. 11 and 12, the retaining region (50) may also be provided with two transverse folding traces (51) that extend across the holder body sheet (20). The middle of the two transverse folding traces (51) is further provided with a transverse middle folding trace (54). The upper and lower portions are provided with a plurality of equidistantly spaced apart triangular slits (56), whereby the holder body sheet (20) can be folded into a cylindrical holder body (10).

Based on the aforesaid construction, paper cup stack holders of different shapes can be formed, and the present invention is illustrated using the first preferred embodiment described above for the sake of brevity.

Referring to Figs. 4, 5A and 5B, a stack of paper cups (11) is disposed in the holder body (10). By opening the toothed piece (45) to form the opening (15), the paper cups (11) can thus drop down. The mouth of the lowermost one of the paper cups (11) retained by the baffle edge (14), with a part of the cup body exposed from the opening (15). The user can grip the exposed cup body and pull downwardly so that the mouth of the paper cup (11) passes through the baffle edge (14) and the opening (15) for use. The rest of the paper cups (11) will drop downward, with the mouth of the lowermost one retained by the baffle edge (14). If two paper cups (11) pass through the baffle edge (14) simultaneously, since the user applies a force to pull the lowermost paper cup (11), the lowermost paper cup (11) can be brought to pass through the opening (15), while the other one, although it will be pulled downward due to the pulling force, will be retained by the toothed edge of the opening (15). Thus, the present invention provides a two-stage retaining structure by virtue of the baffle edge (14) and the opening (15) to ensure that the paper cups (11) are pulled out one at a time.

In the present invention, paper cups can be disposed during the process of folding the pattern and adhering the same into the paper cup stack holder, without requiring manual packaging, which can reduce work hours and prevent possible contamination of the paper cups. The paper cup stack holder enables a stack of paper cups to be neatly and uprightly held therein to facilitate transport and carrying. When the paper cups in the paper cup stack holder have been used up, the latter can be recycled, which is environmental friendly.

Claims

1. A pattern for forming paper cup stack holder, characterized by:

- a holder body sheet (20) foldable into a holder body (10) in which a stack of paper cups (11) are disposed;
- a plurality of upper edge pieces (30) provided at a top end of said holder body sheet (20) and partitioned from said holder body sheet (20) by an upper folding trace (31) so as to enable folding of said upper edge pieces (30);
- a top cover piece (32) provided at said top end of said holder body sheet (20) and partitioned from said holder body sheet (20) by a top cover folding trace (33) so as to be foldable to adhere to said upper edge pieces (30) to thereby form
a top cover (12) of said holder body (10); a bottom cover piece (40) provided at a bottom end of said holder body sheet (20) and partitioned from said holder body sheet (20) by a bottom cover folding trace (41) so that said bottom cover piece (40) can be folded toward said holder body (10), said bottom cover piece (40) having open edges respectively provided with enclosing pieces (42) that can be folded and adhered to the outside of said holder body (10) so as to form a bottom cover (13) of said holder body (10), said bottom cover piece (40) being provided with an annular tooth-shaped cutting trace (43) section, along which part of said bottom cover piece (40) can be pierced to form an opening (15) with a toothed edge; and a retaining region (50) disposed proximate to said bottom end of said holder body sheet (20) and provided with upper and lower transverse folding traces (51) and slots (52) corresponding respectively to holder body folding traces (21) on said holder body (10), connecting pieces (53) being interposed between said slots (52), each of said connecting pieces (53) being centrally and transversely provided with a middle folding trace (54) so that said connecting pieces (53) can be folded in halves and project from the interior of said holder body (10) to thereby form a baffle edge (14).

2. A pattern for forming a paper cup stack holder as claimed in Claim 1, characterized in that said holder body sheet (20) is provided with a plurality of equidistantly spaced apart longitudinal holder body folding traces (21) so as to be folded into a polygonal holder body (10).

3. A pattern for forming a paper cup stack holder as claimed in Claim 1, characterized in that said holder body (10) is cylindrical in shape.

4. A pattern for forming a paper cup stack holder as claimed in Claim 1, characterized in that said holder body sheet (20) is provided with a suspension hole dotted line (23) along which part of said holder body sheet (20) can be pierced to form a suspension hole (17).

5. A pattern for forming a paper cup stack holder as claimed in Claim 1, characterized in that said bottom cover piece (40) is provided with a retaining portion cutting trace (44) along which part of said bottom cover piece (40) can be pierced to form a hole for extension of a finger therethrough.

6. A pattern for forming a paper cup stack holder as claimed in Claim 1, characterized in that said bottom cover piece (40) can be torn along said tooth-shaped cutting trace (43) to form a toothed piece (45), which can be pulled away to form said opening (15), said toothed piece (45) having a section connected to said bottom cover piece (40).

7. A pattern for forming a paper cup stack holder as claimed in Claim 1, characterized in that said connecting pieces (53) of said retaining region (50) are provided with a plurality of slits (55) to enhance resilience of movement of said baffle edge (14).

8. A pattern for forming a paper cup stack holder as claimed in Claim 1, characterized in that said connecting pieces (53) are folded in halves such that said upper and lower transverse folding traces (51) are adjacent to each other, said enclosing pieces (42) of said bottom cover piece (40) being adhered to said holder body (10) to shield said transverse folding traces (51).

9. A pattern for forming a paper cup stack holder as claimed in Claim 1, further characterized by a plurality of reinforcing pieces (60) provided at the bottom end of said holder body sheet (20) so as to be folded and adhered to the inner side of said bottom cover piece (40).

10. A pattern for forming a paper cup stack holder as claimed in Claim 1, characterized in that said connecting pieces (53) have adhesive applied to folded surfaces thereof to facilitate folding and adhering.
**DOCUMENTS CONSIDERED TO BE RELEVANT**

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<tr>
<th>Category</th>
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<th>Relevant to claim</th>
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<tr>
<td>Y</td>
<td>US 3 820 686 A (TYRSECK W) 28 June 1974 (1974-06-28) * column 1, line 23 - column 2, line 18 * * column 2, line 44 - column 3, line 21; figures 1-6 *</td>
<td>1-5</td>
<td>A47F1/08</td>
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<tr>
<td>Y</td>
<td>US 4 163 508 A (MANNOR ARDEN) 7 August 1979 (1979-08-07) * column 3, line 56 - column 4, line 2; figures 1-6 * * column 3, line 29 - column 3, line 32 *</td>
<td>1-5</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>US 1 633 983 A (DAWSON CECIL F ET AL) 28 June 1927 (1927-06-28) * page 1, line 4 - page 1, line 26 * * page 1, line 67 - page 1, line 85 * * page 2, line 64 - page 2, line 109; figures 1-7 *</td>
<td>1</td>
<td>A47F B65D</td>
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**TECHNICAL FIELDS SEARCHED** (Int.Cl.7)

- A47F
- B65D

The present search report has been drawn up for all claims

**PLACE OF SEARCH**
MUNICH

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15 February 2002

**EXAMINER**
Klintebäck, D
ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO. EP 01 12 5362

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on 15-02-2002.

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<th>Publication date</th>
<th>Patent family member(s)</th>
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<tr>
<td>US 3820686</td>
<td>28-06-1974</td>
<td>NONE</td>
<td></td>
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<tr>
<td>US 4163508</td>
<td>07-08-1979</td>
<td>NONE</td>
<td></td>
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<td>US 1633983</td>
<td>28-06-1927</td>
<td>NONE</td>
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