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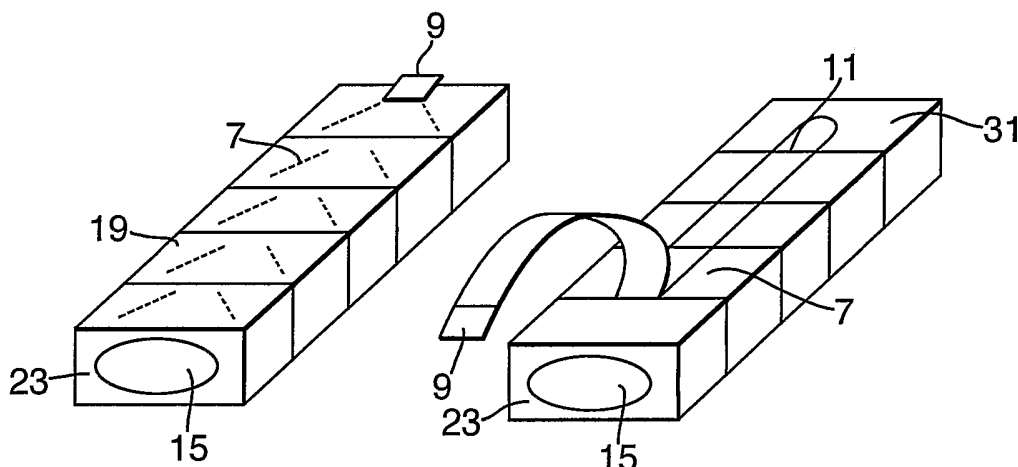
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(54) Title: PACKAGING OF MULTIPLE CONSUMER ARTICLES



(57) Abstract: An outer package (1) containing a plurality of consumer articles (13) arranged in an array (17), said outer package (1) comprising a flexible sheet material (19) wrapped and sealed around the array in a configuration which is adapted to the shape of the array so as to retain the arrangement of the array (17), and an easy open tear strip (21) contained within a single face of the outer package (1) and comprising tear zones arranged in sequential pairs (3), the zones within each pair (3) being mutually divergent in the direction of tearing separated by a gap corresponding to the tear strip (21) whereby the arrangement of the array (17) is retained after opening of the package via the tear strip.

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PACKAGING OF MULTIPLE CONSUMER ARTICLES

The present invention relates to packaging of multiple consumer articles.

5

It is an object of the present invention to provide an improved package for packaging multiple consumer articles e.g. home care and personal care products.

10 In one aspect the invention provides an outer package containing a plurality of consumer articles arranged in an array according to claim 1.

The invention advantageously allows convenient grouping of
15 individual articles (which may be packages) by packaging in an outer or a 'secondary' package which can be opened simply by tearing a strip of film.

Due to the mutual divergence of the zones within each pair
20 (where divergence is in the direction of tearing) narrowing or lateral tearing of the tear strip is avoided or is at least reduced. Regions of unweakened material between successive pairs strengthens the pack transversely, whilst divergence within the pairs prevents narrowing of the tear
25 strip.

A tear strip is advantageous in that it does not require the use of potentially dangerous sharp implements such as knives and minimises the risk of damage to the primary packaging by
30 eliminating the use of potentially sharp or dangerous objects. However, even though the action of tearing is

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involved, which is potentially quite disruptive when used on flexible packaging, this does not destroy the array due to the location of the lines of weakness. The user is thereby allowed access to an orderly array of articles after opening
5 and e.g. whilst stocking shelves, articles can be selected and then retrieved from an orderly array. The articles are less likely to be damaged since they remain in the orderly array even after the package is torn open. Even further the articles are more likely to remain in a orderly array even
10 after one or more articles have been removed.

An expensive and material intensive rigid outer container is not required to retain the array in order, since this is achieved by the flexible sheet in combination with array of
15 articles.

Due to the opening being within a single face, this means that when the pack is opened, only the material within the single face is affected.
20

To aid usage, visible and/or tactile indicia is preferably provided to instruct tearing in the required direction, i.e. in the direction of divergence.

25 The pairs may be arranged to provide two parallel columns of tear zones, defining a generally rectangular tear strip. Alternatively each successive pair may diverge so that the tear strip widens in the direction of tearing. The tear strip may comprise a combination of one or more parallel
30 columns of tear zones and one or more diverging columns.

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Preferably the opening mechanism is within a single face such that it does not extend to or beyond the perimeter of the single face. Therefore the opening mechanism does not interfere with any adjoining regions (e.g. edges) between adjacent faces of the package. This is advantageous in that all other faces are left intact after opening, which retains the integrity of the package.

There may be more than one opening mechanism, e.g. there may be an opening mechanism within two or more respective faces of the outer packaging. This gives the user the choice of which opening to select, according to the type of article. The location of the opening may differ according to whether the articles are to be removed from the outer package and placed on shelves for sale (in which case the face may be an upper or top face), or whether the outer package is to be used as a display package (in which case the face may be a side face).

A further advantage is that, even after opening because the package retains its integrity, the user can still handle e.g. carry the package without substantial disruption of the array of articles.

Preferably the flexible sheet material is a shrink wrap film. In this way the material is effectively shrunk to adapt to the shape of the array of articles. Suitable materials for this are PE and derivatives e.g. Low density polyethylene LDPE, medium density polyethylene MDPE, and high density polyethylene HDPE, ethylene vinyl acetate EVA, polypropylene PP, polyamide PA and ionomers thereof.

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However, the material might also be folded and sealed so as to adapt to the shape of the array.

5 The tear zones may comprise a line of perforations in the form of dashes and/or dots, and/or line of reduced thickness (of the material).

10 To aid the starting of this opening process, the package may include a label at the end of the perforation. The label is preferably attached e.g. by adhesive or heat sealing, to the tear strip material. Advantageously, part of the label remains free to act as a tab to facilitate grasping of the tear strip to use the easy open feature.

15 The advantage of including a label is that it acts to direct the user to the beginning of the tear strip and may have visual indicia to indicate to the user how to use the opening mechanism, and importantly the correct direction of tearing.

20 Advantageously, the tear zones are initially relatively close together negating the need for precise registration of the label with the beginning of the tear strip. The tear zones may diverge from such close proximity, if a wider tear strip is required.

25

Preferably the seals are effected by heating the regions to be sealed.

30 The tear zones may comprise a series e.g. line of perforations. Each of the individual perforations is less

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than approximately 10 mm in length, preferably less than approximately 5 mm in length and may be approximately 3 mm approximately. The gap between each perforation is less than approximately 10 mm in length, preferably less than
5 approximately 5 mm in length and may be approximately 3 mm approximately.

The perforations may be made by e.g. a blade or laser. This can be applied before the articles are wrapped in the outer
10 package or during the application procedure.
Each perforation may be a small hole or slot.

Preferably the package is a non-peelable, flexible material such as polyethylene, polypropylene and may be an oriented
15 materials, laminates, coextrusions etc.

The package may be of thickness 25-100 μ m.

The invention will be more clearly understood from the
20 following description of some embodiments thereof, given by way of example only, with reference to the accompanying drawings in which:-

Figure 1 is a schematic plan view of an outer package
25 containing a plurality of consumer articles arranged in an array according to the invention;

Figure 2 is an enlarged view of the tear zones on the package of figure 1.

30 Figure 3 is a perspective view of package of figure 1 before and after opening.

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Referring to the drawing, one embodiment of the invention is shown, comprising an outer package 1 containing a plurality of consumer articles comprising cartons 13 of detergent powder, which are arranged in an array 17.

5

The array 17 comprises a single row of cartons 13, each carton being (approximately) 11cm high x 14.5cm wide and 10cm deep, all cartons having identical dimensions and arranged to rest on their bases.

10

The outer package 1 consists of a flexible sheet material 19 comprising shrink film which is tightly wrapped and sealed by shrink wrapping around the array 17 in a configuration which is adapted to the rectangular shape of the array so as to retain the arrangement of the array 17. Although the shrink wrapping process can leave gaps 15 (only shown in fig 3), these are within the boundaries of each end face 23 of the array, and are small enough not to comprise the array 17.

20

An easy open mechanism 7 is contained within a single upper face 19 of the outer package such that it does not extend to or beyond the perimeter of the single face. "Upper" means with the cartons orientated with bases downwardly directed and upper faces, (which contain spouts, lids etc not shown) upwardly directed. The opening mechanism comprises five pairs 3 of tear zones, all arranged sequentially, the zones within each pair 3 being mutually divergent in the direction of tearing and separated by a gap corresponding to a tear strip 21. Each tear zone consists of a row of perforations (in the form of dashes). The pairs 3 provide two parallel

30

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columns of tear zones defining a generally a rectangular
tear strip. The pair is cojoined at one end by a "v" shaped
cut 27 to define a starting position. Each of the
perforations is 3 mm in length. The gap between each
5 individual perforation 3 mm in length. Shrink wrap film is
of thickness 60 μ m.

The gap 5 between each adjacent pair in the sequence is
approximately 15mm in length. Each tear zone of each pair
10 is approximately 25mm apart at the narrowest point 29, and
approximately 35mm apart at the widest point 31.

The arrangement of the array 17 is retained after opening
of the package 1 via the tear strip 21. Once the tear strip
15 21 has been torn away (partially i.e. still attached to the
pack at one end), an aperture 11 is left, through which the
cartons may be selected and retrieved.

Due to the divergence within each pair, any narrowing 25 of
the tear strip (seen more clearly in fig 2) is compensated
for, so that the strip when removed is generally rectangular
(although slightly fluted along the edges).

The outer or 'secondary' package 1 is used to transport the
25 array 17 to the retail establishment (e.g. supermarket) and
can also be used to transport the array within the retail
establishment. Indeed, a further advantage of the invention
is that, even after opening, because the package retains its
integrity, the user can still carry the package without
30 substantial disruption of the array of articles. For
example, the package may opened on the shop floor of a
supermarket and one or more cartons can be selected from

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array in the opened package and placed directly on one shelf and the undisrupted array conveniently carried by the merchandiser to another part of the supermarket for stacking shelves there. Thus, even though the package comprises a
5 flexible material which is very easily and expeditious ripped open, it still acts as an effective transport device for ordered arrays of articles after opening of the package. Indeed expeditious opening of secondary and tertiary packaging is highly desirable as this is a key factor in the
10 speed of shelf stacking within supermarkets.

The unopened array may be sold as a consumer unit, so that the individual cartons are selected for use as and when necessary by the consumer.

15

The packaging arrangement advantageously allows convenient grouping of the individual cartons within a 'secondary' package which can be opened simply and, very importantly, expeditiously by simply tearing the strip of film but
20 without the use of potentially dangerous sharp implements such as knives thus minimising the risk of damage to the primary packaging (the cartons) by eliminating the use of such objects. Even though the action of tearing is involved, which is potentially quite disruptive when used on
25 flexible packaging, this does not destroy the array due to the precise location of the perforations. The user is thereby allowed access to an orderly array of cartons after opening and e.g. whilst stocking shelves, cartons can be selected and then retrieved from an orderly array. The
30 cartons can be made from thinner, cheaper (and therefore more vulnerable) materials as these are less likely to be

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damaged since they remain in the orderly array 17 even after the package 1 is torn open. Even further the cartons 13 are more likely to remain in the orderly array 17 even after one or more have been removed.

5

Due to the tear strip 21 and consequent opening 11 being within a single face 19, when the pack 1 is opened, only the material within the single face 19 is affected and it does not interfere with any adjoining regions (e.g. edges)

10 between adjacent faces of the package. This is advantageous in that all other faces are left intact after opening, which retains the integrity of the package.

The shrink wrap film comprises low density polyethylene LDPE
15 Shrink wrapping allows the material to be effectively shrunk to adapt to the shape of the array of articles.

To aid the starting of this opening process, the tear strip 21 includes a 'pull tab' 9 (with visual indicia to indicate
20 to the user to being tearing by pulling the pull tab) 9 attached at the end of the tear strip 21. Only part of the pull tab is attached by adhesive to the end of the material of the tear strip 21 over the top of the "v" shaped cut 27 leaving the end free to facilitate grasping of the tab 9.

25

The perforations may be made by any suitable technique e.g. laser or circular cutter. In this embodiment, they are made prior to the application process by a laser.

30

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Any suitable shrink wrapping process can be used and in this embodiment. The material is loosely wrapped around the articles and may be sealed e.g. heat sealed in this loosely wrapped configuration. The wrapped articles are then briefly
5 (e.g. a few seconds) heated e.g. within an oven to shrink the material around the array. The time, temperature of the oven are selected so that the material forms tightly around the array.

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CLAIMS

1. An outer package containing a plurality of consumer
articles arranged in an array, said outer package
5 comprising (a) flexible sheet material wrapped and sealed
around the array in a configuration which is adapted to
the shape of the array so as to retain the arrangement of
the array, and (b) an easy open tear strip contained
within a single face of the outer package and comprising
10 tear zones arranged in sequential pairs, the zones within
each pair being mutually divergent in the direction of
tearing separated by a gap corresponding to the tear
strip whereby the arrangement of the array is retained
after opening of the package via the tear strip.
- 15 2. The outer package containing a plurality of consumer
articles arranged in an array according to claim 1
wherein each of the tear zones comprise a plurality of
perforations.
3. The outer package containing a plurality of consumer
20 articles arranged in an array according to claim 2
wherein one or more of the perforations are arranged in
lines.
4. The outer package containing a plurality of consumer
articles arranged in an array according to any preceding
25 claim wherein the easy open tear strip is contained
within a single face such that it does not extend to or
beyond the perimeter of the single face.
5. An outer package containing a plurality of consumer
articles arranged in an array according to any preceding
30 claim, wherein the tear strip includes one or more
bridging tear zones, providing a link between the zones

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within one or more pairs, at or toward an end of the tear strip, said bridging zone(s) facilitating initial opening.

- 5 6. An outer package containing a plurality of consumer articles arranged in an array according to any preceding claim wherein the tear strip includes one or more bridging tear zones providing a link between the zones of one or more pairs within a mid region of the tear strip to facilitate progressive opening by multiple tearstrips.
- 10 7. A method of opening an outer package containing a plurality of consumer articles arranged in an array according to any of the preceding claims, wherein the method comprises the step of tearing the tear strip from a single upper face of the package to provide an aperture
- 15 within said single upper face whereby the arrangement of the array is retained after opening of the package.

Fig.1.

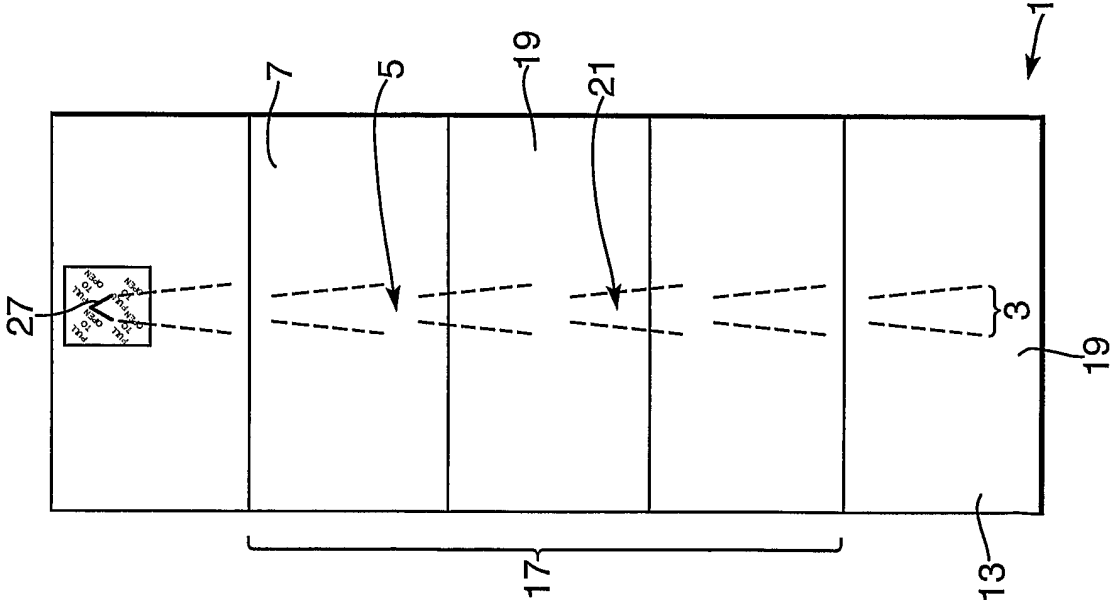


Fig.2.

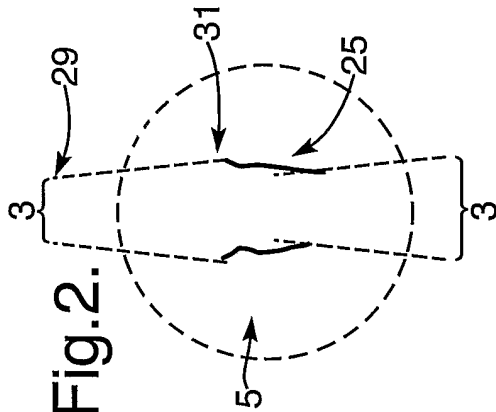
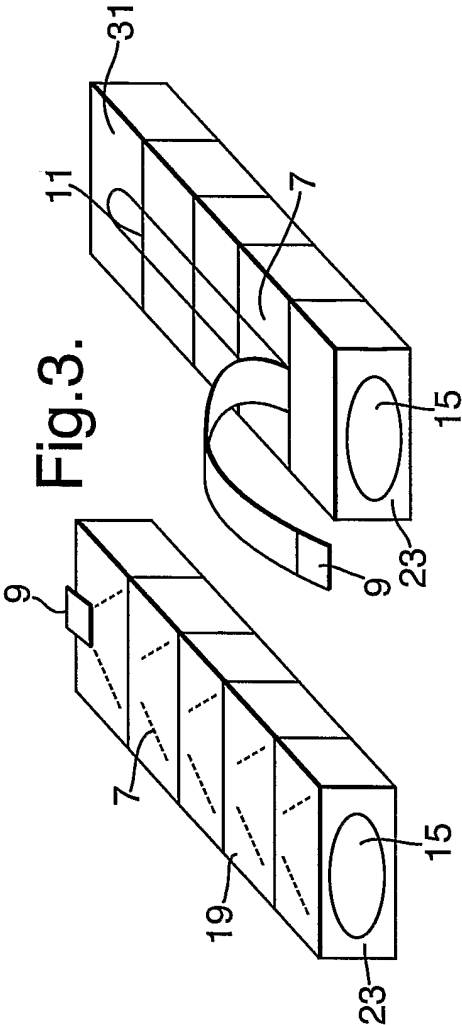


Fig.3.



INTERNATIONAL SEARCH REPORT

International Application No
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A. CLASSIFICATION OF SUBJECT MATTER

B65D71/00

*According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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- * & * document member of the same patent family

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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