

Dec. 6, 1966

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3,289,829

PACKING ELEMENT FOR STEMWARE ARTICLE

Filed June 7, 1965

2 Sheets-Sheet 1

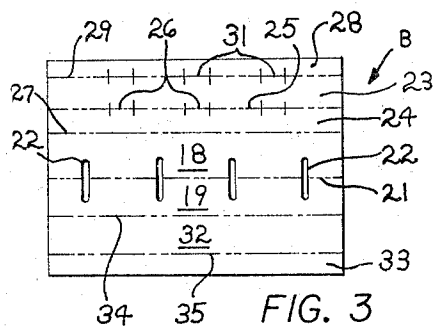


FIG. 3

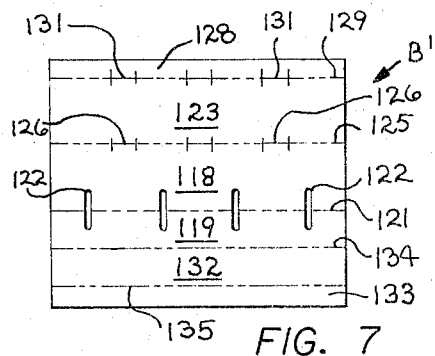


FIG. 7

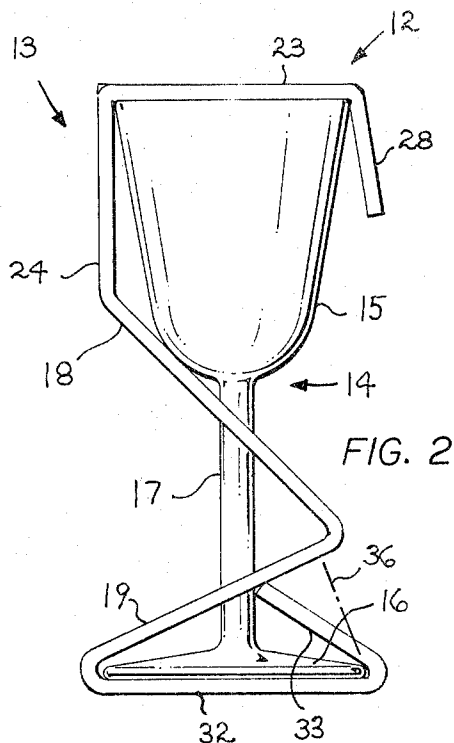


FIG. 2

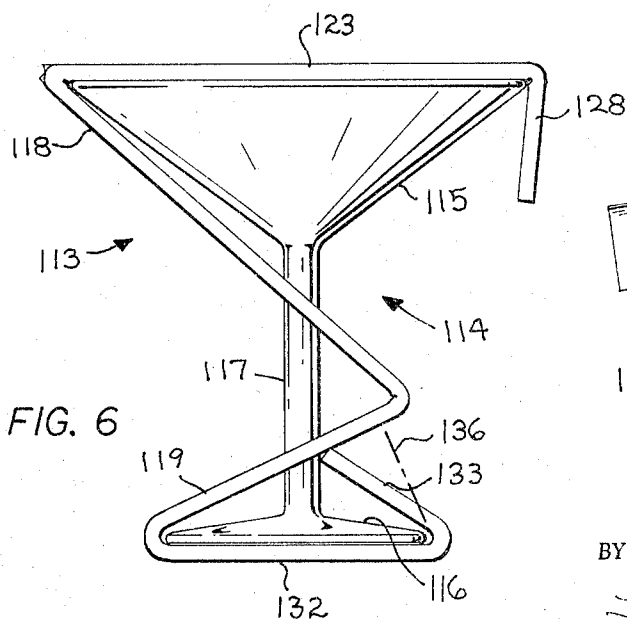


FIG. 6

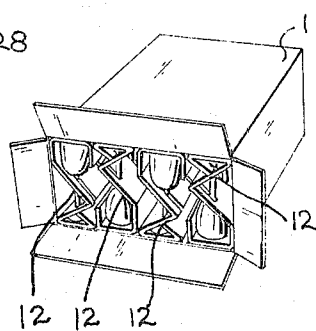


FIG. 1

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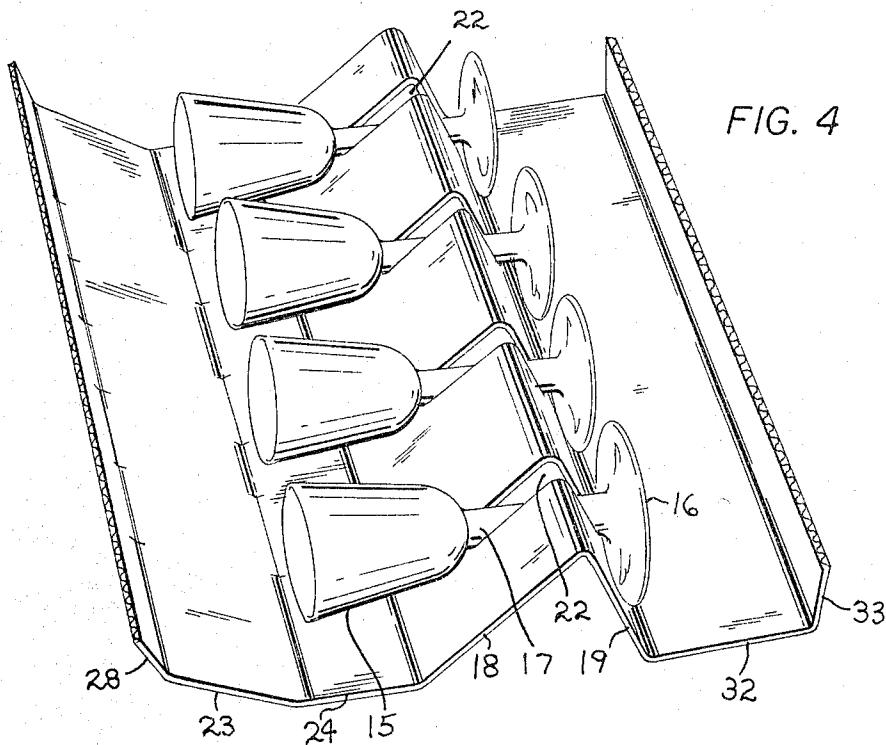


FIG. 4

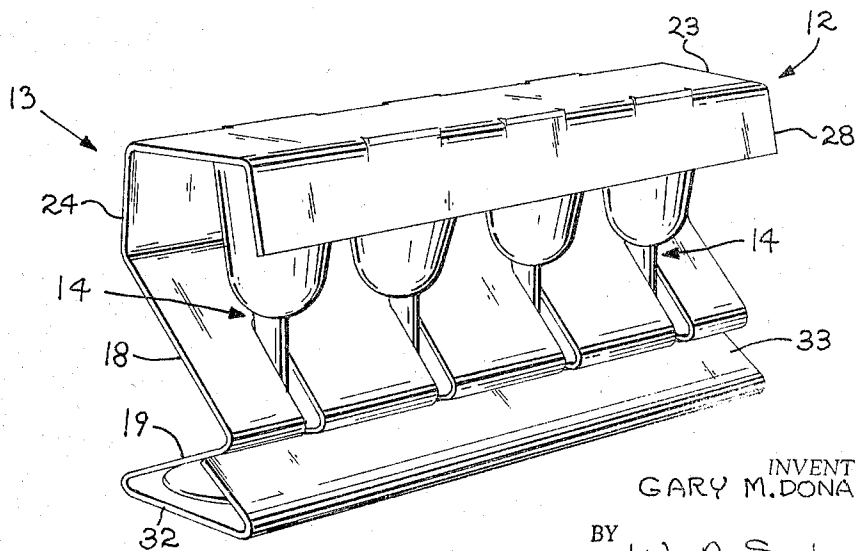


FIG. 5

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PACKING ELEMENT FOR STEMWARE ARTICLE

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Filed June 7, 1965, Ser. No. 461,697

19 Claims. (Cl. 206-65)

This invention relates to a packing element formed from a unitary sheet of generally rigid impact-absorbent material and having utility in the protective engagement of one or more stemware articles of a fragile material. The invention also relates to a handling unit comprising the combination of such a packing element and one or more stemware articles protectively engaged thereby. The invention is of particularly utility in the handling and shipment of glass stemware.

In accordance with the present invention there is provided a packing element which can be formed from a relatively inexpensive sheet of a generally rigid impact-absorbent material such as corrugated fibreboard. The use of a sheet of a composite material comprising a pair of plies of paper bonded to an intermediate core of foamed plastic material is also contemplated. Such a sheet, particularly in the case of corrugated fibreboard, can be formed into a blank from which the packing element can be erected by relatively common die-cutting techniques on equipment that is readily available in fibreboard box manufacturing plants. The packing element can be erected and the stemware article or articles can be combined therewith with a relatively few manipulative steps. The packing element is of such a construction that the articles can not be readily separated therefrom. Additionally, in a preferred embodiment of the invention, the packing element comprises a portion which surrounds the base of each stemware article packed therein in a more or less self-locking fashion which facilitates handling of a unit comprising a packing element and one or more stemware articles.

In use, the packing element snugly engages and positively supports the stem of each article at a pair of spaced apart locations and serves to positively maintain a number of such articles in spaced apart relationship. Also, there is provided sufficient material encompassing the bowl and base of each article to prevent articles combined with juxtaposed packing elements from directly contacting one another.

It is, therefore, an object of the present invention to provide an economical packing element of novel and improved construction having utility in protectively engaging one or more stemware articles of a fragile material, such as glass, to safeguard against the breakage of such articles during handling and shipping. It is a further object of the invention to provide a handling unit comprising one or more of such stemware articles protectively engaged by one of such packing elements.

For a further understanding of the invention attention is directed to the following portion of the specification, the drawing, and the appended claims.

In the drawing:

FIG. 1 is a perspective view of an opened carton containing a plurality of handling units disposed in parallel and serially adjacent relationship to one another, each handling unit comprising a plurality of stemware articles protectively engaged by a packing element;

FIG. 2 is an end view, at an enlarged scale, of one of the handling units of the carton of FIG. 1;

FIG. 3 is a plan view at a reduced scale of a suitably cut and scored blank of material from which the packing element of the handling unit of FIG. 2 may be erected;

FIG. 4 is a perspective view, again at an enlarged scale, of a packing element and a plurality of stemware articles

at a point in time during the combining of the element and the articles into a handling unit;

FIG. 5 is a perspective view of such a handling unit at a point in time subsequent to the point in time depicted in FIG. 3;

FIG. 6 is a view similar to FIG. 2 showing a modified handling unit in which the stemware article is shaped differently than the stemware article of FIG. 2 and in which the packing element is of a configuration different than the configuration of the packing element of FIG. 2 to conform to the differing features of the stemware article engaged thereby; and

FIG. 7 is a view similar to FIG. 3 of a blank from which the packing element of FIG. 6 may be erected.

In accordance with the present invention, as is shown in FIG. 1, a number of stemware articles of a fragile material, such as glass, may be packaged in a single parallelepiped-shaped carton 11, formed of a generally rigid, impact-absorbent material such as corrugated fibreboard, for shipment and handling by customary means and procedures with relatively little danger of breakage of the stemware. As is shown, the stemware articles are separated into groups and each group is combined with a packing element into a handling unit 12. The handling units 12 are disposed in parallel and serially adjacent relationship to one another.

As is shown in FIG. 2, handling unit 12 comprises a packing element 13 snugly engaging a stemware article 14, or a plurality of such stemware articles spaced apart from one another and aligned in a row. Each article comprises a bowl portion 15, a base portion 16, and a narrow stem connecting the bowl and the base and integral therewith.

Packing element 13 is formed from a blank B of a material such as corrugated fibreboard, FIG. 3, and comprises first and second panels 18 and 19 disposed at an angle and foldably connected together at the juncture therebetween which lies along score line 21 of blank B. Blank B is provided with a number of narrow slots 22, corresponding to the number of stemware articles to be engaged by element 13, which are parallel to one another and spaced apart from one another in a series extending transversely of each slot. Each slot 22 is of a width suitable to snugly engage a stem of an article 14 and each slot extends from a location in panel 18 across score line 21 to a location in panel 19. Article 13 is so disposed with respect to panels 18 and 19 that stem 17 is engaged by panel 18 at a location proximate to bowl portion 15 and is engaged by panel 19 at a location proximate to base portion 16. Thus, panels 18 and 19 and stem 17 of article 14 are disposed generally in the arrangement of an "A."

Bowl portion 15 of article 14 is at least partially enveloped by panel means foldably connected to panel 18 and comprising a spanning panel 23 extending transversely across the open end of bowl 15 and disposed proximately thereto, and preferably in contact therewith. In the embodiment of FIGS. 1-5, which has utility in the packaging of stemware articles having relatively narrow and deep bowl portions, spanning panel 23 is connected to panel 18 by way of an intermediate panel 24.

The juncture between panels 23 and 24 lies along score line 25 of blank B which comprises cut portions 26 intermediate the stemware articles to facilitate bending of the panels with respect to one another. The juncture between panels 24 and 18 lies along score line 27 of blank B. The panel means foldably connected to panel 18 further comprises a panel member 28 foldably connected directly to spanning panel 23 and extending therefrom downwardly toward the base of article 13 for a distance which is significant in relationship to the depth of bowl 15. The juncture between panel members 28 and 23 lies along

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score line 29 which also comprises cut portions 31 intermediate the stemware articles.

Foot portion 16 of article 14 is enveloped by a portion of packing element 13 comprising a panel member 32 foldably connected to panel 19 and extending therefrom transversely across the bottom of base portion 16 and closely adjacent thereto. Additionally, there is provided an additional panel member 33 foldably connected to panel 32 and extending therefrom to abut against panel 19 at an angle and to form, with panels 19 and 32, a triangularly shaped portion of packing element 13 enveloping or circumposing base 16 or article 14. The junctures between panels 32 and 19 and panels 32 and 33 lie along score lines 34 and 35, respectively, of blank B. It is to be noted that score lines 35, 34, 21, 27, 25 and 29 of blank B are disposed parallel to one another.

The triangular portion of packing element 13 defined by panels 19, 32 and 33 may be provided with self-locking characteristics which is of advantage in safeguarding against disengagement of articles 14 from packing element 13 during handling of units 12. As is shown in FIG. 2, such self-locking characteristics are obtained by making panel 32 only slightly greater than the width of base 16 of article 14, to preclude substantial lateral relative movement therebetween, and by making panel member 33 a length that is shorter than panel member 32 and slightly greater than the length of the shortest straight line from the juncture between panels 32 and 33 to panel 19. Such shortest straight line would, by known principles of plane geometry, lie along the perpendicular from the juncture of panels 32 and 33 to panel 19 and is depicted as lying along line 36 of FIG. 2. In conjunction with corrugated fibreboard packing elements for glass stemware articles for table use, it has been found that a satisfactory locking effect is obtained when panel 33 is of a length that is $\frac{1}{8}$ – $\frac{1}{4}$ inch greater than the length of the shortest straight line between panel 19 and the juncture between panels 32 and 33.

The embodiment of the packing element depicted in FIGS. 6 and 7 may be considered to be of utility in the packaging of stemware articles 114 having bowl portion which is wide and shallow in relationship to the bowl portion 15 of stemware article 14; stemware article 114 further comprises a base portion 116 and a stem 117. Stemware article 114 is snugly engaged by packing element 113 comprising first and second panels 118 and 119 disposed at an angle to one another and foldably connected at their juncture which lies along score line 120 of blank B' of FIG. 7. Blank B' is provided with slots 122 extending from a location in panel 118 to a location in panel 119 for snugly receiving stem portion 117 of article 114.

The means for at least partially enveloping bowl portion 113 of article 114 comprise a spanning panel member 123 directly connected to panel member 118 at their juncture which lies along score line 125 of blank B', score line 125 being provided with cut portions 126 to facilitate folding. A panel member 128 foldably connected to spanning panel member 123 is also provided and is attached to the spanning panel member 123 at their juncture which lies along score line 129 of blank B'. Score line 129 is also provided with cut portions 131 to facilitate folding.

Foot portion 116 of stemware article 114 is enveloped by a portion of packing element 113 in a manner essentially the same as the manner in which foot portion 16 of article 14 is enveloped by a portion of element 13. Thus, element 113 also comprises a panel member 132 connected to panel 119 along score line 134 of blank B' and extending transversely across the bottom of foot or base portion 116. Likewise, there is provided a terminating panel member 133, connected to panel member 132 along score line 135 of blank B', and extending therefrom at an angle to abut against panel 119 to form a triangular portion with panels 119 and 132. For self-

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locking characteristics, panel 132 is only slightly greater than the width of foot portion 116 of article 114 and panel 133 is slightly greater than the length of line 136 perpendicular between the juncture between panels 132 and 133 and panel 119.

It is believed that the best mode known to me to carry out this invention has been described above in terms sufficiently full, clear, concise and exact as to enable any person skilled in the art to make and use the same. It is to be understood, however, that it is within my contemplation that certain modifications of the above-described mode of practicing the invention can be made by a skilled artisan without departing from the scope of the invention and, it is, therefore, desired to limit the invention only in accordance with the appended claims.

I claim:

1. In combination: a stemware article of fragile material comprising a bowl, a base, and a narrow stem connecting the bowl and base and integral therewith; and a packing element protectively engaging such article and formed from a unitary sheet of generally rigid impact-absorbent material, said packing element comprising first and second panels disposed at an angle to one another and foldably connected to one another at their juncture; a narrow slot extending from a locus in the first panel to a locus in the second panel through the juncture, the stemware article being so disposed with respect to the packing element that the stem is disposed in the slot and is engaged by the first and second panels; panel means foldably connected to the first panel and having a spanning panel member extending transversely across the bowl of the stemware article and closely adjacent thereto, said panel means serving to envelop at least a portion of said bowl; a third panel foldably connected to the second panel and extending transversely across the base of the stemware article and disposed closely adjacent thereto; and a fourth panel foldably connected to the third panel and extending therefrom to abut against the second panel at an angle and forming, with the second and third panels, a triangularly shaped portion of the packing element circumposing the base of the stemware article.

2. The combination according to claim 1 wherein the width of the third panel between the junctures thereof with the second and fourth panels is slightly greater than the width of the base of the stemware article.

3. The combination according to claim 2 wherein the fourth panel is of a length that is shorter than the third panel and is sufficiently greater than the length of the shortest straight line from the juncture of the third and fourth panels to the second panel to provide a locking effect when the fourth panel is folded to abut with the second panel at a location nearer the juncture of the second and third panels than the location where said shortest straight line intersects said second panel.

4. The combination according to claim 3 wherein said packing element is formed of corrugated fibreboard and wherein the length of the fourth panel exceeds the length of said shortest straight line by a distance on the order of $\frac{1}{8}$ – $\frac{1}{4}$ inch.

5. The combination according to claim 1 comprising a plurality of stemware articles of similar size and shape spaced apart from one another in a linear series and a single packing element protectively engaging each of said articles, wherein said first and second panels are provided with a plurality of said narrow slots spaced apart from one another, wherein the stemware articles are so disposed with respect to the packing element that each stem is disposed in a different one of said narrow slots and is engaged by the first and second panels, and wherein the junctures of the first and second panels, the second and third panels, and the third and fourth panels are disposed along parallel lines.

6. The combination according to claim 5 wherein the width of the third panel between the junctures thereof

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with the second and fourth panels is slightly greater than the width of the base of the stemware article.

7. The combination according to claim 6 wherein the fourth panel is of a length that is shorter than the third panel and sufficiently greater than the length of the shortest straight line from the juncture of the third and fourth panels to the second panel to provide a locking effect when the fourth panel is folded to abut with the second panel at a location nearer the juncture of the second and third panels than the location where said shortest straight line intersects said second panel.

8. The combination according to claim 7 wherein said packing element is formed of corrugated fibreboard and wherein the length of the fourth panel exceeds the length of said shortest straight line by a distance on the order of $\frac{1}{8}$ – $\frac{1}{4}$ inch.

9. The combination according to claim 5 wherein the bowl of each stemware article is wide and shallow and wherein the spanning panel member is foldably connected to the first panel.

10. The combination according to claim 5 wherein the bowl of each stemware article is narrow and deep and wherein said panel means comprises a pair of panels foldably connected to one another and disposed at an angle to one another, one of the pair being foldably connected to the first panel and the other of the pair being the spanning panel member and being foldably connected to the one of the pair.

11. A packing element for protectively engaging a stemware article, said packing element being formed from a unitary sheet of generally rigid impact-absorbent material and comprising: first and second panels disposed at an angle to one another and foldably connected to one another at their juncture; a narrow slot extending from a locus in the first panel to a locus in the second panel through the juncture; panel means foldably connected to the first panel member and having a spanning panel member disposed above the first panel member and at an acute angle thereto; a third panel foldably connected to the second panel and extending at an acute angle thereto; and a fourth panel foldably connected to the third panel and extending therefrom to abut against the second panel at an angle and forming, with the second and third panels, a triangularly shaped portion of said packing element.

12. The combination according to claim 11 wherein the fourth panel is of a length that is shorter than the third panel and is sufficiently greater than the length of the shortest straight line from the juncture of the third and fourth panels to the second panel to provide a locking effect when the fourth panel is folded to abut with the second panel at a location nearer the juncture of the second and third panels than the location where said shortest straight line intersects said second panel.

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13. The combination according to claim 12 wherein said packing element is formed of corrugated fibreboard and wherein the length of the fourth panel exceeds the length of said shortest straight line by a distance on the order of $\frac{1}{8}$ – $\frac{1}{4}$ inch.

14. The combination according to claim 11 wherein there is provided a plurality of said slots spaced apart from one another and extending parallel to one another; and wherein the junctures of the first and second panels, the second and third panels, and the third and fourth panels are disposed along parallel lines.

15. The combination according to claim 14 wherein the width of the third panel between the junctures thereof with the second and fourth panels is slightly greater than the width of the base of the stemware article.

16. The combination according to claim 15 wherein the fourth panel is of a length that is shorter than the third panel and sufficiently greater than the length of the shortest straight line from the juncture of the third and fourth panels to the second panel to provide a locking effect when the fourth panel is folded to abut with the second panel at a location nearer the juncture of the second and third panels than the location where said shortest straight line intersects said second panel.

17. The combination according to claim 16 wherein said packing element is formed of corrugated fibreboard and wherein the length of the fourth panel exceeds the length of said shortest straight line by a distance on the order of $\frac{1}{8}$ – $\frac{1}{4}$ inch.

18. The combination of claim 14 wherein the spanning panel member is foldably connected to the first panel.

19. The combination of claim 14 wherein the said panel means comprises a pair of panels foldably connected to one another and disposed at an angle to one another, one of the pair being foldably connected to the first panel and the other of the pair being the spanning panel member and being foldably connected to the one of the pair.

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