Dec. 11, 1962 F. L. DENTON 3,067,869

PACKING CASE FOR SHIPPING DISHES AND THE LIKE

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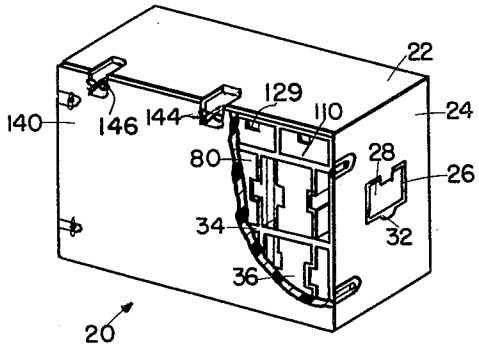


FIG. 1

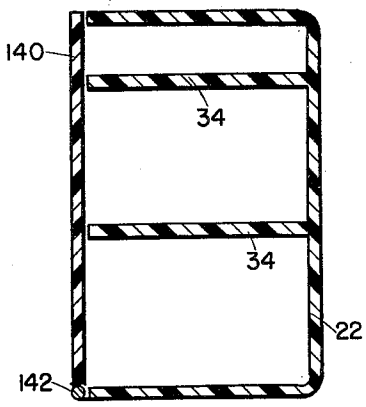


FIG. 3

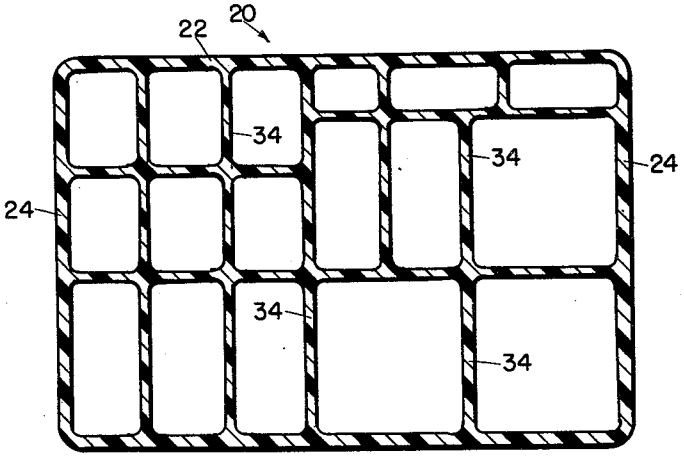


FIG. 2

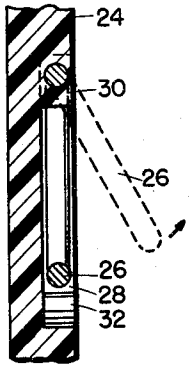


FIG. 4

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PACKING CASE FOR SHIPPING DISHES AND THE LIKE

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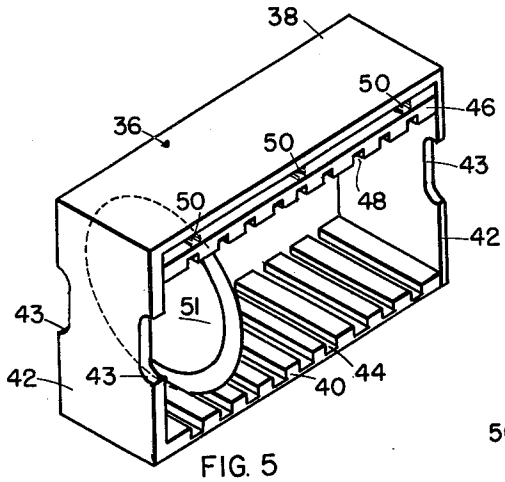


FIG. 5

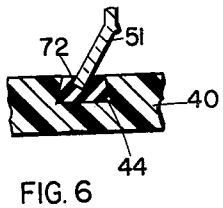


FIG. 6

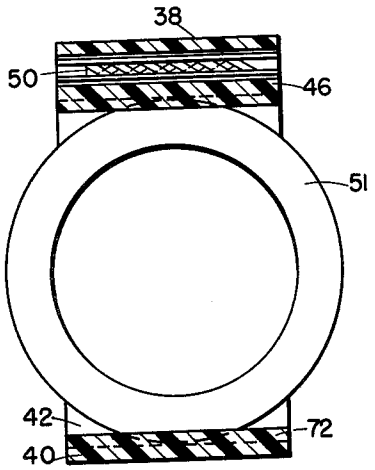


FIG. 7

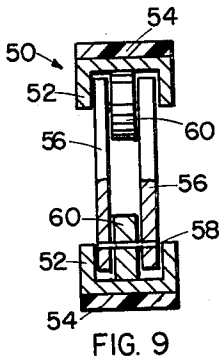


FIG. 9

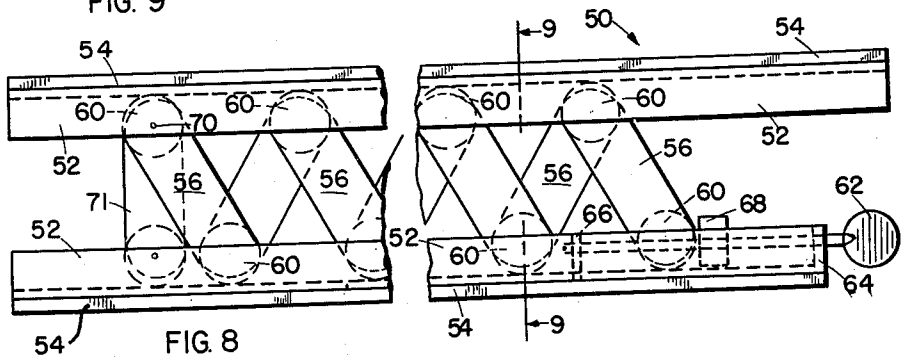


FIG. 8

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PACKING CASE FOR SHIPPING DISHES AND THE LIKE

Filed June 6, 1960 3 Sheets-Sheet 3

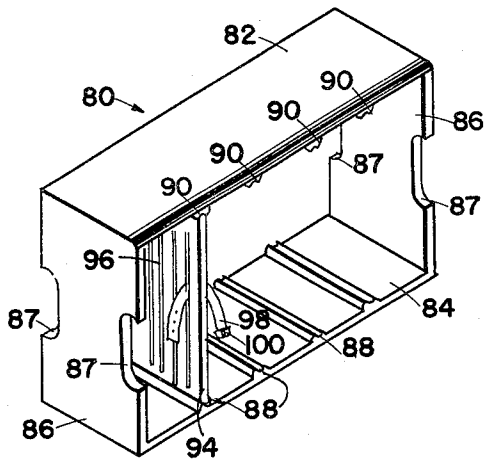


FIG. 10

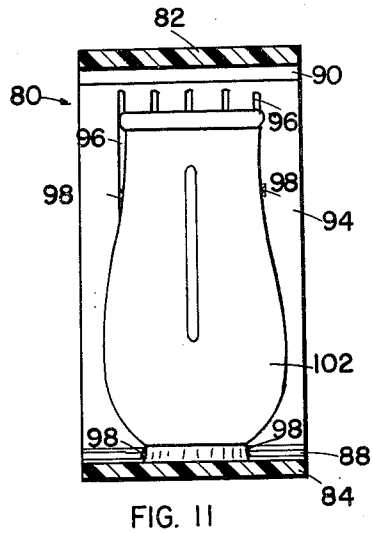


FIG. 11



FIG. 12

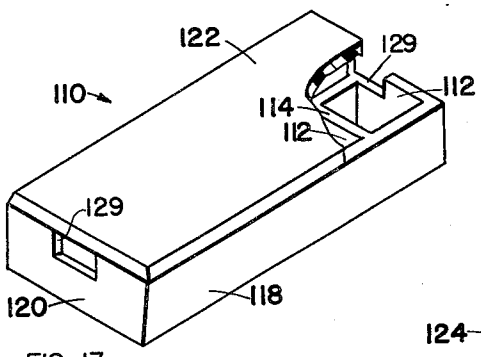


FIG. 13

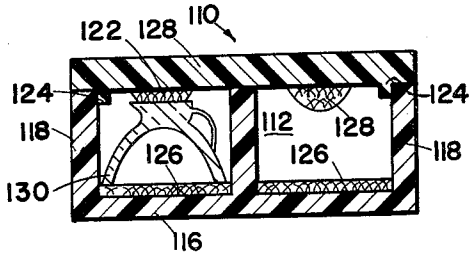


FIG. 14

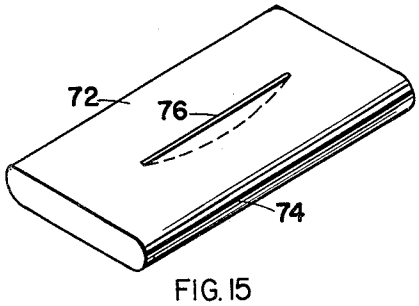


FIG. 15

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3,067,869
PACKING CASE FOR SHIPPING DISHES AND THE LIKE

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Filed June 6, 1960, Ser. No. 34,282
5 Claims. (Cl. 206—65)

This invention relates to packing cases, and more particularly to a packing case suitable for shipping fragile objects, such as dishes and the like. Still more particularly, the invention relates to a shipping case preferably made of plastic materials and having integral dividers forming compartments which receive various packing elements containing dishes and the like therein for shipment. A lid or cover member can be removably mounted on the case to close the same during shipment.

Packing cases of various types have been known in the prior art. These cases have been generally unsatisfactory for use in shipping dishes and other fragile items. More particularly, adequate cushioning means have not been provided to prevent breakage when the case or carton is subjected to shock or abrupt loads. Also, means have not generally been provided to obtain an article dimensioned to receive packing elements of various sizes. Also, many of the prior art devices are slotted or grooved within the housing itself, thereby making a unit which is not flexible or adaptable for shipping many types of articles.

In accordance with the present invention the difficulties existing in the prior art constructions have been overcome. The present invention provides cushioning means to prevent breakage during shipment. Also, the present invention is variable or adaptable to various types and sizes of articles to be shipped therein. An inexpensive plastic construction is preferred due to the ease of construction and of overall reduction in cost.

By the present invention a shipping carrier has been provided which has a boxlike housing. The housing can be divided into a plurality of compartments. Each of these compartments is adapted to receive and retain therein for shipment articles of various sizes. Packing elements of various types can be used which will fit within the various compartments of the housing. When these elements are provided, dishes and the like to be shipped are packed within these elements which are then received by the compartments. Various means are provided to cushion the articles being shipped. A cover or lid is provided to close the housing.

Accordingly, it is an object of this invention to provide a new packing case.

Another object of the invention is to provide a new packing case for safely shipping dishes and the like.

A further object of the invention is to provide a new and improved safety shipping carrier or case for fragile objects, such as dishes and the like, such shipping case being divided into a plurality of compartments in which the articles are packed for shipment.

A still further object of the invention is to provide a new packing case which is divided into compartments by integral dividers, with said compartments receiving packing elements which retain dishes and the like therein for shipment.

A still further object of the invention is to provide a packing case for dishes and the like having an expander element therein to adapt the case for use with various sizes of articles.

Various other objects, advantages and features of the invention will become apparent from the following discussion, taken in connection with the accompanying drawings, in which:

FIG. 1 is an isometric view of a preferred construction of the packing case in the invention with the cover partially cut away.

FIG. 2 is an enlarged longitudinal cross sectional view through the packing case showing a preferred arrangement of the compartments.

FIG. 3 is an enlarged transverse cross section view through the packing case of the invention.

FIG. 4 is a cross section view through one end of the packing case showing the handle and means of mounting same.

FIG. 5 is an isometric view of one of the packing elements of the invention.

FIG. 6 is an enlarged cross section view of the element shown in FIG. 5 showing the resilient insert in the groove with a dish mounted therein.

FIG. 7 is an enlarged transverse cross section view through the packing element of FIG. 5 showing a dish mounted therein for shipment.

FIG. 8 is a side elevation view of the preferred construction of the expander used in the invention.

FIG. 9 is a cross section view of the expander taken along the line 9—9 of FIG. 8.

FIG. 10 is an isometric view of another of the preferred packing elements of the invention.

FIG. 11 is an enlarged transverse cross section view through the element of FIG. 10 showing a pitcher mounted therein.

FIG. 12 is an enlarged partial longitudinal cross section view showing the bottom groove of the packing element of FIG. 10.

FIG. 13 is an isometric view of a packing element of the invention particularly designed to hold cups and the like.

FIG. 14 is an enlarged transverse cross section view through the packing element of FIG. 13.

FIG. 15 is an enlarged isometric view of the groove insert element preferably used with the packing element of FIG. 5.

The following is a discussion and description of a preferred specific embodiment of the new packing case of the invention, such being made with reference to the drawings, whereon the same reference numerals are used to indicate the same or similar parts and/or structure. It is to be understood that such discussion and description is not to unduly limit the scope of the invention.

Referring now to the drawings in detail, the packing case of the invention is shown generally at 20 and includes a one piece compartmentalized housing 22 which is preferably made of a plastic material, and which can be reinforced to give the housing 22 additional strength. The housing 22 is closed on the top, bottom, ends, and one side, leaving the housing open on one side only. The ends 24 of the housing have a handle 26 mounted thereon. The handle 26 is preferably mounted in a recess 28 as best seen in FIGS. 1 and 4. The handle 26 is preferably made of metal and is mounted within the recess 26 by passing through the depending portion 30 of the housing which extends into the recess from the top center portion thereof. This manner of mounting the handle on each end 24 of the housing 22 is preferred since the handle 26 is then out of the way, leaving a flush exterior surface on the ends 24. This permits close stacking of a plurality of the packing cases 20 in a moving van or the like. A suitable arcuate groove 32 can be provided at the lower edge of recess 28 to permit easy access to the handle 26. Other types of handles and means of mounting same on the housing can be used, if desired.

The housing 22, is preferably divided into a plurality of compartments by dividers 34. The dividers 34 are preferably integrally formed with the housing 22. As will be apparent from the drawings, the dividers 34 form groups of compartments of the same size, and the compartments are arranged so that compartments of the same size are adjacent to each other. A preferred arrangement

of the various compartments is shown, however this arrangement can be varied as desired to meet any particular application of the shipping case.

At least some of the compartments within the housing 22 can receive and retain therein for shipment packing elements of various constructions designed to hold dishes or the like which are otherwise difficult to pack in the various compartments in such a manner as to avoid breakage during shipment. Specific examples and details of preferred types of packing elements are shown in FIGS. 5 to 15 of the drawings.

One of the preferred types of packing elements is shown in FIGS. 5 through 9 and 15. This type of packing element is shown generally at 36 and includes a top 38, a bottom 40, duplicate ends 42 and is open at the sides. The ends 42 have notches 43 which form hand grips for inserting or removing the elements 36. The bottom 40, preferably has a plurality of transverse grooves 44 formed in the bottom inside face thereof. A removable separator 46 is positioned inside the packing element 36 and extends the length of the packing element. The separator 46 is also preferably grooved as shown at 48 on its lower face. The grooves 48 in the separator are preferably spaced in the same manner as the grooves 44 in the top face of the bottom 40 of the element 36.

A plurality of expanders 50 are positioned between the separator 46 and the top 38 of the element 36. The expanders 50 function to vary the spacing between the top 38 and the separator 46 so that plates 51 or the like of various sizes can be received within the grooves 44 and 48 for shipment. The plates 51 preferably fit entirely within the element 36 as shown in FIG. 5, but can project beyond the sides as shown in FIG. 7.

The expander 50 preferably includes two channel shaped members 52 which face each other, and can have a soft plastic backing number 54 secured thereto. The backing plastic number 54 can be of a vinyl material, nylon, soft rubber, or other type of resilient material. The channel shaped members 52 and plastic strips 54 can be secured to the top 38 and the separator 46 in any suitable manner, such as by screws, suitable adhesives, etc. A plurality of braces 56 of equal size are positioned between the channel shaped members 52 and have axles 58 mounted thereon. Rollers 60 are mounted on the axles 58 to extend beyond the ends of the braces as shown to engage and roll along the center portion of the channel members 52.

A thumb screw 62 in one end of the lower channel shaped member 52 extends between and is rotatably mounted in two spaced stops or supports 64 and 66. The thumb screw 62 also passes through and is threadedly mounted in a movable member 68 which extends across and is received in the lower channel shaped member 52. In operation, as the thumb screw 62 is rotated the member 68 will be moved along the channel 52 in engagement with the first roller 60 of the expander. As the member 68 and roller 60 are moved within the lower channel, it will cause the braces 56 to be moved from a vertical to a more horizontal position, or the reverse, thereby causing the two channel shaped members 52 to be spread apart or moved together. The roller 60 at the end of the expander opposite from the thumb screw 62 is permanently secured in place by a suitable mounting pin 70 which prevents the braces 56 and rollers 60 from merely moving along the channel 52. A suitable connecting base 71 can be telescopically and pivotally secured to both channel members 52 to connect the members together. While this type of expander is preferred due to its simplicity and ease of operation, it will be apparent to those skilled in the art that various other types of expanding units can be used between the separator 46 and the top 38 of the element 36.

To provide resilient mounting of plates 51, etc. within the packing element 36, a suitable resilient insert 72 is preferably provided, one of which is mounted in each of the grooves 44 in the bottom 40 of the element 36. Also, if desired the resilient members 72 can be mounted in the groove 48 of the separator 46, however, the resilient plastic material 54 of the expanders 50 will ordinarily be sufficient to provide a resilient mounting on the upper portion of the plate 51 or the like. The resilient member 72 is best seen in FIGS. 6 and 15 and is made from a suitable elastic material, such as, soft rubber, synthetic rubber, suitable plastics, etc. The inserts 72 are generally elongated and preferably have rounded edges 74. The inserts 72 are dimensioned relative to the groove 44 so that slight compression will be necessary in order to mount the inserts 72 within the groove 44 as shown in FIG. 6. This is preferred and desirable since the sides 74 of the insert 72 will then be urged firmly into engagement with the edges of the groove 44 to thereby serve to retain the insert 72 within the grooves. In some instances, the grooves 44 can be generally dove tailed in shape as shown in FIG. 6, which further aids in retaining the insert 72 therein. Also, if desired the insert 72 can be permanently secured within the groove 44 by any suitable means, such as gluing, etc.

The rubber inserts 72 preferably has a slot 76 cut in the center portion thereof which receives the edge of the plate 51 mounted therein. The slot 76 is preferably arcuate as shown in FIG. 15, and extends only a portion of the length of the member 72. Other shapes or types of resilient inserts 72 can be used as desired to fit any particular application of packing element.

A second type of packing element which can be received and retained in compartments of the housing 22 is shown in FIGS. 10, 11 and 12 and indicated generally by the numeral 80. The packing element 80 includes a top 82, a bottom 84, two identical end members 86, and is open at both sides as shown. Notches 87 form hand grips to handle the element 80. The packing element 80 preferably has a plurality of transverse grooves 88 and 90 on the lower and upper inside faces respectively. One manner of constructing the grooves is shown in detail in FIG. 12, wherein the grooves 88 are arcuate in cross section and have lip portions 92 integrally formed from the plastic material in the bottom 84. Other means of forming the grooves 88 and 90 can be used if desired. The grooves 88 and 90 are preferably spaced the same on the bottom and the top 82 of the element 80.

Removable walls 94 are mounted in the element 80 and extend from the groove 90 to groove 88. The walls 94 are preferably slotted from top to bottom as shown at 96. One or more securing straps 98 are mounted on the walls 94 so as to extend from both sides of the wall, preferably through the slots 96. The securing straps 98 are preferably made of a woven elastic webbing type material and have buckles or other fastener means 100 on the ends thereof.

In using the packing element 80, an article such as a pitcher is placed on the bottom 84 between adjacent grooves 88 and is held in this position by the elastic straps 98 being stretched between adjacent walls 94 and secured together. The straps in adjacent walls can be interconnected to rigidly secure the article 102 therein, or a single strap 98 from one of the walls can be passed entirely around the article. This will depend, in part, upon the type of article being used, its shape, size, etc., and it will be apparent that by the construction described articles larger than the space between adjacent grooves 88 can be mounted in the element 80 by removing one or more of the walls 94. Also, if desirable straps 98 can also be mounted on the inside face of the ends 86 of the unit.

Another type of packing element receivable and mountable within the housing 22 is shown in FIGS. 13 and 14 of the drawings. The third type of packing element 110 is divided into sections 112 by dividers 114. The dividers 114 are preferably formed integral with the bottom 116, sides 118 and the ends 120 of the packing element. The sections 112 are open at the top to receive various

articles therein for shipment, and is closed by a lid **122**. The lid **122** can have integrally formed lugs **124** thereon to accurately position the lid **122** on the base portion of the packing element **110**. The bottom of the individual sections **112** are preferably covered with resilient pads **126**. The pads **126** preferably cover the entire lower face of the sections **112**, and can be made of any suitable resilient material, such as foam rubber, synthetic rubber compounds, suitable plastics, etc. The lid **122** also has foam rubber pads **128** secured thereto. The pads **128** can be either a portion of a sphere, as shown in FIG. 14, or they can be flat like pads **126**. The rubber pads **128** are provided for each of the sections **112**, in the same manner as the pads **126**. Cut-outs **129** provide hand holds for handling element **110**.

The packing elements **110** are used to receive and retain dishes such as cups **130** shown in FIG. 14, or other dishes, such as small bowls, glasses, etc.

In use the packing case **20** receives in the compartments the packing elements **36**, **80** and **110** after the various types of dishes have been packed therein. In some instances it will be desirable to provide similar packing elements for each of the compartments of the housing **22**. In other cases, only a relatively few of the compartments will receive these packing elements, and the other compartments will receive individual bowls, vases, pitchers, coffee pots, etc. The packing case of the invention is very versatile and can be used in different ways to suit any shipping situation. Where the case is used by manufacturer to ship specific sets of dishes and the like, then the types of packing elements used will be the same in each case. However, when the case is used for shipping a family's dishes and the like by a mover, it is readily adaptable as necessary to meet any situation. The packing elements can entirely fill each compartment, or they can be slightly smaller than the compartments.

When the dishes and packing elements have been received within the compartments of the housing **22**, the open end of the housing can be closed by a suitable lid or cover such as shown at **140** in FIG. 1. The lid **140** can be mounted on the housing **22** in any suitable manner, such as by the continuous piano type hinge **142**. To retain the lid **140** in place covering the compartments of the housing **22**, toggle bolts **144** can be provided which are pivotally mounted in the housing **22** and which extend through notches in the lid or cover **140**. Thumb nuts **146** are then received by the toggle bolts **144** to retain the lid **140** in place. The toggle bolts **144** can be spaced as desired around the edge of the open side of the housing **22**, however, it is preferred that the toggle bolts **144** can be mounted at the intersection of the outer walls of the housing **22** and the dividers **34**. Other types of securing means can, of course, be used to hold the lid or cover **140** closed; however, it has been found that the toggle bolt arrangement is very desirable for ease of operation.

As will be evident to those skilled in the art, various modifications of this invention can be made, or followed, in the light of this description and discussion, without departing from the spirit of the disclosure or the scope of the claims.

I claim:

1. A packing case for safely shipping dishes and the like comprising, in combination, a one piece compartmentalized plastic housing open at one side, each end of said housing having a hinged handle mounted in a recess in said housing, said housing being divided into a plurality of compartments by integral dividers, said dividers forming groups of compartments, said compartments being arranged so that compartments of the same size are adjacent to each other, each of said compartments receiving and removably retaining one packing element, at least one of said packing elements having a plurality of transverse grooves across the bottom inside face thereof, a removable separator extending the length of said element and positioned inside said element between the top and bottom faces of said element, said separator being transversely grooved on its lower face, said element having an expander removably and resiliently mounted between the top face of said separator and the top inside face of said element which can be expanded to provide variable spacing for dishes of various sizes, and removable rubber inserts mounted in each of said grooves in said bottom face of said element, said rubber inserts having an arcuate slot cut in the center portion thereof to receive the edge of said dish and resiliently mount said dish in said element between said insert and said grooves in the lower face of said expander, hand grips formed by notches in each end of said element to remove said element from said housing, second packing elements received and removably retained within other of said compartments in said housing, said second packing elements being transversely grooved across the upper and lower inside faces thereof, said grooves having a plurality of removable walls mounted therein, each of said walls being slotted longitudinally from the top to the bottom thereof, a plurality of elastic straps mounted on said walls and extending from both sides of said wall through said slots, hand grips formed by notches at each end of said second elements to facilitate removal of said elements from said housing, said second packing elements adapted to receive pitchers, vases and the like between said walls to be retained therein by said straps on adjacent walls passing on both sides thereof and being secured together, and third packing elements received and removably retained within said housing, said third elements being divided into a plurality of sections each of which is open at the top only, a removable lid closing the top of said sections of said third elements, said lid and the bottom of said third elements having opposed foam rubber pads secured thereto to resiliently mount cups and the like therein, each end of said third elements having cut-out portions to form hand holds for easy removal of said elements from said housing, toggle bolts mounted on said housing around the open side thereof, and said housing having a cover hingedly mounted thereon, brackets to receive said toggle bolts to close said housing and retain said elements therein.

2. A packing case for shipping dishes and the like comprising, in combination, a one piece compartmentalized plastic housing open at one side, each end of said housing having a handle mounted thereon, said housing being divided into a plurality of compartments, each of said compartments adapted to receive and removably retain therein a packing element, at least one of said packing elements having a plurality of transverse grooves across the bottom inside face thereof, a removable separator positioned inside said element between the top and bottom faces thereof, said separator being transversely grooved on its lower face, said grooves in said separator and said grooves in said bottom inside face of said element being equally spaced, said element having an expander unit mounted between and engaging the top face of said separator and the top inside face of said element which can be expanded to provide a variable spacing between the bottom inside face of said element and the bottom of said separator, and removable resilient members in said grooves in said bottom face of said element, said resilient members having a slot in the center portion thereof to receive the edge of a dish or the like to resiliently mount same in said element, handle means in each end of said element to remove said element from said housing, second packing elements received and removably retained in other of said compartments in said housing, said second packing elements being transversely grooved across the upper and lower inside faces thereof, removable walls mounted in said grooves, a plurality of straps mounted on said walls, handle means on each end of said element, said second packing elements adapted to receive pitchers and the like to be retained therein by

said straps, and third packing elements received and removably retained within said housing, said third packing element being divided into sections which are open at the top, a removable lid receivable on the top of said third elements, said lid and the bottom of said third elements having foam rubber pads secured thereto to resiliently mount cups and the like therein, each end of said third element having handle means formed thereon, and said housing having a cover closing the open side thereof, said cover being hingedly mounted on said housing, and means to secure said cover on said housing in the closed position.

3. A packing case for dishes and the like comprising, in combination, a compartmentalized housing, each end of said housing having handle means thereon, said housing being divided into compartments, each of said compartments in said housing adapted to receive and retain a packing element, one of said packing elements having a plurality of transverse grooves on the inside face thereof, a removable separator within said element, said separator being grooved and positioned in said element so that said grooves on said separator face the grooves on said element, and expander means in said element to move said separator to vary the distance between said grooves on the said element and said grooves on said separator, resilient means mounted in said grooves in the inside face of said element, second packing elements removably mounted within other of said compartments within said housing, said second packing elements having removable walls mounted therein, securing straps secured to said walls to retain pitchers and the like within said element, and third packing elements received and removably retained within other compartments of said housing, said third elements being divided into sections open at the top, a removable lid closing the top of said sections, said lid and the bottom of said sections having resilient members thereon to mount cups and the like therein, and a cover hingedly mounted on said housing and closing the open side thereof, and means to maintain said cover in the closed position.

4. A packing case comprising, in combination, a housing having means therein dividing same into a plurality of compartments, each of said compartments in said housing being closed at the sides, top, bottom and one end and of size to receive and retain a packing element therein, and a plurality of packing elements, one of said packing elements having a plurality of grooves in an inside face thereof, movable separator means positioned within said one of said elements and having grooves in one face thereof facing said grooves in said face of said one of said elements, expandable means engaging said one of said elements and said separator means to adjustably position said separator means relative to said grooves in said face of said one of said packing elements, a second

one of said packing elements being removably mounted within another of said compartments of said housing and having removable wall means mounted therein, fastening means with said wall means engageable with an article therebetween to hold same in place, and a third one of said packing elements mounted in other of said compartments of said housing, said third one of said packing elements having means therein dividing same into a plurality of sections each open at the top, lid means closing said sections, said lid means and said sections having resilient means therewith to engage and hold an article during shipment, and cover means mounted on said housing to enclose said compartments and retain said packing elements therein during shipment.

5. A packing case comprising, in combination, a housing having means therein dividing same into a plurality of compartments, each of said compartments in said housing being closed at the sides, top, bottom and one end and of size to receive and retain a packing element therein, and a plurality of packing elements, one of said packing elements having means in an inside face thereon to receive a portion of an article, movable separator means positioned within said one of said elements and having means in one face thereof cooperating with said means in said face of said one of said elements to hold an article therebetween, expandable means engaging said one of said elements and said separator means to adjustably position said separator means relative to said means in said face of said one of said packing elements, a second one of said packing elements being removably mounted within other of said compartments of said housing and having wall means therewith, fastening means with said wall means engageable with an article therebetween to hold same in place, and a third one of said packing elements mounted in other of said compartments of said housing, said third one of said packing elements having means therein dividing same into a plurality of sections, lid means closing said sections, said lid means and said sections having means therewith to engage and hold an article during shipment, and cover means mounted on said housing to enclose said compartments and retain said packing elements therein during shipment.

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