April 8, 1969 R. H. VAN SAUN ET AL 3,437,198

CUSHIONING PACKAGE

Filed Aug. 17, 1967

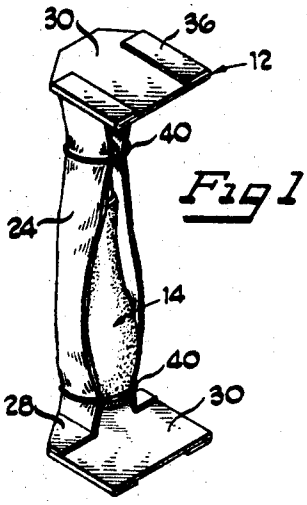

Fig 1

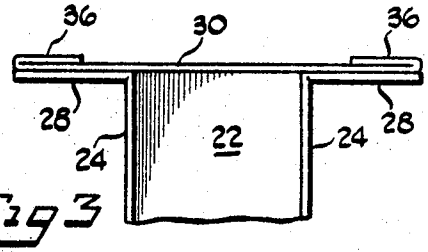

Fig 3

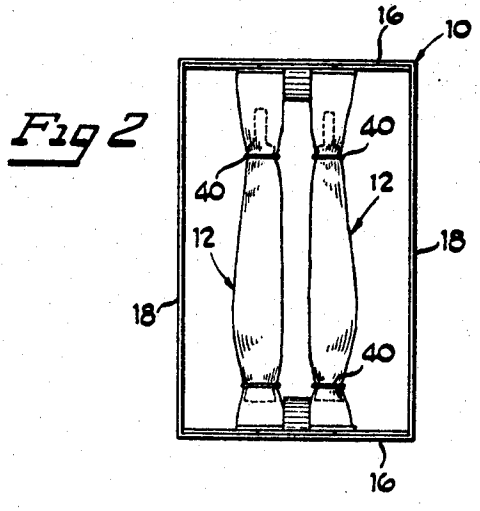

Fig 2

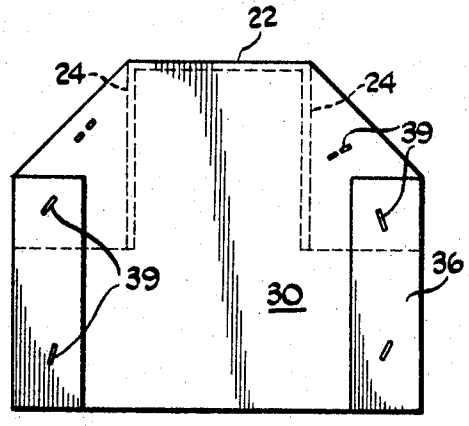

Fig 4

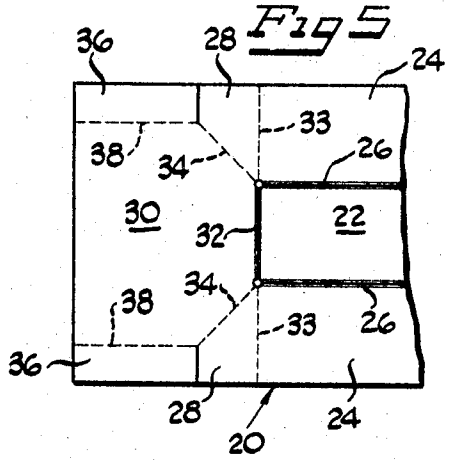

Fig 5

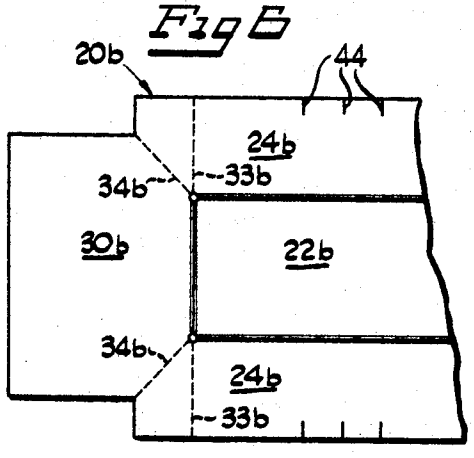

Fig 6

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CUSHIONING PACKAGE

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U.S. Cl. 206—65 4 Claims

ABSTRACT OF THE DISCLOSURE

A paperboard cushioning package for an article, including an outer box and an insert having a channel section for cradling the article and being fixed within the outer box to limit relative movement therebetween and means securing the article to the channel section to limit relative movement therebetween.

This invention relates to paperboard cushioning containers for holding and transporting articles and particularly elongated frangible articles such as lamp bases, vases, instruments, and like articles which can be easily scratched, dented or broken in normal shipping and handling.

It is an object of this invention to provide in a package of the type described, a composite container including an outer box and one or more inserts positioned within the outer box and immobile relative thereto and adapted to cradle a packaged article therein.

A more specific object of the invention is the provision of an insert for an outer box which insert includes a channel section for receiving the packaged article, end flaps on the channel section engageable with the outer box, and strapping means securing the article to the channel section to prevent relative movement therebetween.

These and other objects of the invention will be apparent from an examination of the following description and drawings wherein:

FIGURE 1 is a perspective view of an insert embodying features of the invention which is shown in the erected condition containing a packaged article;

FIGURE 2 is a side view of the structure illustrated in FIGURE 1, with portions of the structure cut away, illustrating a composite package embodying features of the invention and showing the position of an article containing inserts within an outer box;

FIGURE 3 is a fragmentary end view of a portion of the insert illustrated in FIGURE 1;

FIGURE 4 is a fragmentary plan view of a portion of the insert shown in FIGURE 1;

FIGURE 5 is a fragmentary plan view of a portion of the blank from which the insert shown in the previous views may be formed; and

FIGURE 6 is a view similar to FIGURE 5 but illustrating a slightly modified form of the invention.

It will be understood that, for purposes of illustration, certain elements have been intentionally omitted from certain views where they are believed to be illustrated to better advantage in other views.

Referring now to the drawing for a better understanding of the invention, and particularly to FIGURE 2, it will be seen that the composite container embodying the invention includes an outer box, indicated generally at **10**, within which is disposed one or more inserts, indicated generally at **12**, each containing a package article **14**.

The outer box may be of conventional, six-sided shape having a pair of opposed top and bottom walls **16** and a plurality of side walls **18** which are hingedly attached to form an enclosed structure for receiving the inserts **12**.

Referring now to FIGURES 1 and 5, it will be seen that each insert **12** may be formed from a blank, indicated generally at **20** and shown in FIGURE 5. The insert includes a preferably rectangular, elongated central panel **22** having a pair of somewhat similar side panels **24** hingedly attached to opposed side edges thereof along longitudinally extending hinge lines **26**. In the preferred embodiment of the invention side panels **24** are slightly longer than center panel **22** and include end portions **28** which project beyond the opposite ends of center panel **22** and which are hinged to the end edges of side panels **24** along hinge lines **33**.

In the erected condition of the insert the side panels are folded at right angles to the center panel to form a generally U-shaped channel section of the insert which is adapted to receive the packaged article in a manner hereinafter described.

Still referring to FIGURES 1 and 5, it will be seen that a pair of end flaps **30** are disposed at opposite ends of the channel section and are hingedly attached to the opposite end edges of center panel **22** along transversely extending hinge lines **32** which are aligned with hinge lines **33**. In the embodiment illustrated in FIGURE 5, the end flaps **30** are also hingedly attached along diagonally disposed hinge lines **34** to end portions **28** of the respective side panels **24**.

Additionally, there may be provided a pair of spacer flaps **36** which are hingedly attached along hinge lines **38** to opposite side edges of each end flap **30**. When the insert is in erected condition the end flap is also folded at right angles to the center flaps along hinge lines **32** and also at right angles to the side panels **24**. The additional transverse score lines **33** permit the end portions **28** of the side panels to serve as gussets so that the end flaps **30** can be folded at right angles to the center and side panels of the channel section.

The spacer flaps are then folded 180° outwardly so as to lie in back-to-back relation against the outer surface of the end flaps **30**. The insert may be maintained in erected condition by stapling the end flaps, spacer flaps, and side panel end portions by means of staples **39** as shown in FIGURE 4.

After the inserts have been formed the packaged articles may be placed within the channel sections and secured thereto by means of preferably elastic straps **40** in FIGURE 1 and FIGURE 2 which permit a slight degree of relative movement without tearing or causing the paperboard channel section to tear. The straps are preferably formed of a plastic material such as polyethylene.

After the articles have been placed within the panel sections of the inserts the inserts may be disposed within the outer box. An outer box may be designed to hold one or more inserts. It is preferable to provide a plurality of inserts for one outer box to provide a greater degree of efficiency in the utilization of outer containers. In order to prevent movement of the inserts within the containers, it is desirable that the end flaps be contoured in such a manner that when all of the inserts are disposed within an outer box the end flaps of the inserts at each end of the box occupy the entire surface area of the end walls of the container. If this is impossible, then it may be desirable to fasten the end flaps to the container in any desired manner, such as by staples (not shown).

Also, it will be noted from an examination of FIGURES 1 and 2 that the articles are of a shorter length than the channel section of the insert, so that when they are secured to the insert and their movement relative thereto is limited, there is a space formed between the end walls of the container and the packaged article which serves as a cushion to prevent damage to the packaged articles by handling, dropping, or stacking.

Now turning to FIGURE 6, it will be seen that a modified form of the invention is shown. This embodiment is similar to FIGURE 5, except that the end flap **30***b* is not hingedly attached to the side panels, but is only hingedly attached to the center panel **22***b*. Also in this embodiment, the spacer flaps **36** have been eliminated.

It will also be seen in FIGURE 6 that there are provided a plurality of cuts **44** in the free edges of the side panels **22**. These cuts assist in preventing the strapping from sliding longitudinally of the channel section and thereby keep it in a proper place.

Thus, it will be seen that the invention includes a relatively inexpensive and yet efficient and safe method of packaging frangible articles within an outer shipping container to prevent their movement relative to the container and to prevent the load from a plurality of stacked containers from exerting any pressure on the packaged article.

We claim:

1. In a composite cushioning package for holding and transporting at least one elongated, frangible article, the combination of:

(a) an outer box having opposed pairs of end walls and side walls;

(b) an open-top, trough-like insert formed from a unitary blank of foldable paperboard, including:

(i) a generally rectangular center panel;

(ii) a pair of side panels hingedly attached to and upstanding from opposed side edges of said center panel to define therewith a generally U-shaped channel structure adapted to cradle said article;

(iii) end flaps, of an area greater than the cross-sectional area of said channel structure, hinged to opposite end edges of said center panel and folded normal to said center panel to lie against and close the ends of said channel structure at

a location spaced from the adjacent ends of said article;

(iv) each of said end flaps also being connected to said center panel by a pair of gusset elements hinged to adjacent end edges of said side panels and side edges of said end flap;

(v) means locating said end flaps with respect to the adjacent end walls of said outer box to prevent relative movement therebetween;

(c) means extending snugly around said channel section and article to prevent relative lateral and longitudinal movement therebetween and thereby maintain said spaced relation between said end flaps and said article.

2. A package according to claim **1** wherein when one or more inserts are disposed within the outer box the overall dimensions of the end flap or flaps at each end correspond to the overall dimensions of the adjacent end wall.

3. A package according to claim **1**, wherein said end flaps are secured to adjacent end walls.

4. A package according to claim **1**, wherein said end flaps are secured to adjacent end walls by staples.

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U.S. Cl. X.R.

206—46; 229—14