March 14, 1961 D. R. LANE 2,974,844

PACKAGING SUPPORT

Filed Feb. 15, 1960

FIG. 4

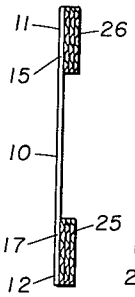



FIG. 1

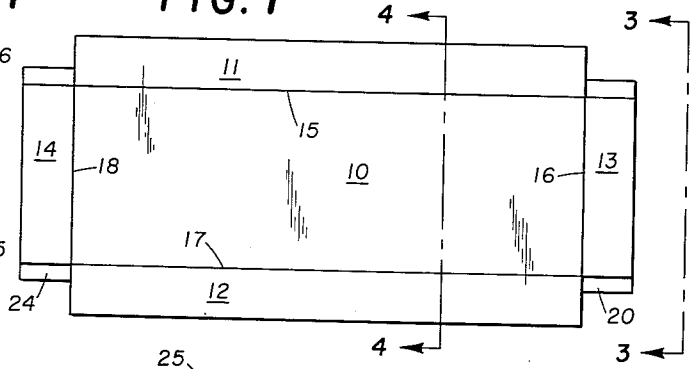
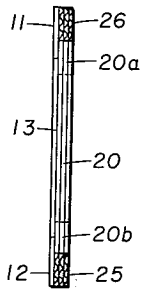



FIG. 3



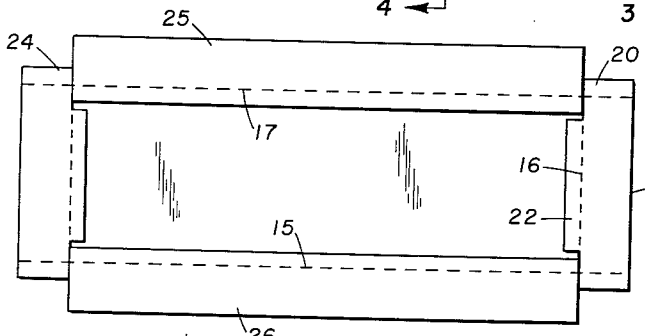
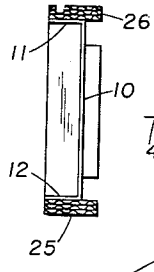




FIG. 2

FIG. 6



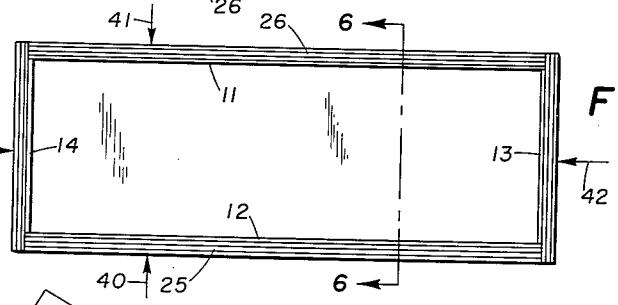




FIG. 5

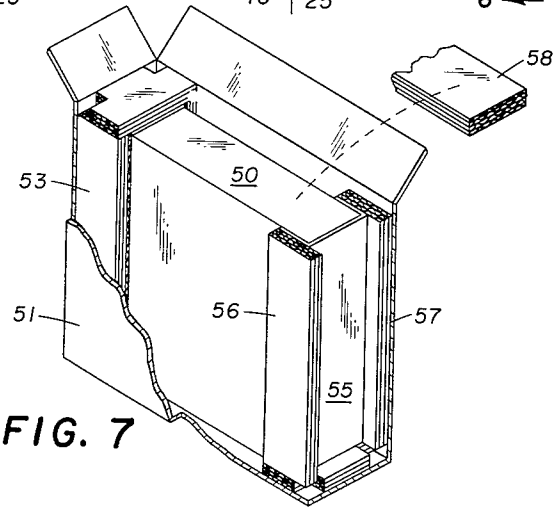



FIG. 7

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2,974,844

# PACKAGING SUPPORT

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10 Claims. (Cl. 229—14)

This invention relates to packaging and more particularly, to a pad adapted for unitary flat fabrication and readily foldable to form a receptacle for an article in a cushioned spaced-apart relation with respect to the walls of a container.

In packaging articles of rectangular polyhedron configuration for shipment under such conditions as are likely to involve rough handling, it is frequently desirable because of the nature of the article to insulate it and cushion it to prevent damage. Generally, protection may be provided by spacing the article from the walls of a container with layers of material which preferably is inexpensive yet adequate to provide rigidity and to withstand impact. Simply accomplished, rectangular sheets of padding material, suitably dimensioned to fit into a container, may be provided for all six sides of the container; however, for packages other than cubical in form, a plurality of sheets of different sizes are required and the handling thereof in actual making up a package becomes tedious and time-consuming.

It is an object of the present invention to provide a unitary pad, a pair of which may be readily applied to opposite faces of an article having the shape of a rectangular polyhedron to provide a spaced relationship between the article and any bearing surface and at the same time, provide padding on all six sides of the article.

More particularly, in accordance with the present invention, there is provided a shipping pad formed from a rectangular corrugated fiber board sheet with flaps extending the full length of at least two edges thereof and hingedly depending from such edges. Pad elements of thickness substantially greater than the thickness of said sheet are secured to at least the two of said flaps which are hinged to adjacent sides of said sheet. One of said pad elements is of length equal the length of the first of said flaps and is aligned with the free edge of the first of said flaps, but overlaps the juncture between the sheet and the first flap a distance of the order of the combined thickness of the pad element and the sheet. The other of the pad elements is aligned with the free edge of the second flap and extends beyond each end thereof and beyond the juncture between the sheet and the second flap by distances of the order of the combined thickness of the pad and the sheet. By this means, the two flaps may be folded to right angle relation with respect to the sheet to form a corner protector for a packaged article.

In accordance with a more specific aspect of the invention, there is provided a shipping pad including a rectangular sheet having a bearing face and flaps depending therefrom on the sides thereof which flaps extend the full length of each of such sides. Pad units are provided on the face of said flaps opposite the bearing face of said sheet. On two of said flaps, the pad units coincide in length with the flaps but are wider than the flaps to overlie the boundaries between the flaps and said sheet. The pad units secured to third and fourth flaps are of greater length than the flaps by twice the thickness of the pad units and have at least a portion thereof which



overlies the boundaries between the third and fourth flaps and said sheet. By this means the flaps may be folded inwardly toward the bearing face of said sheet to form an oepn receptacle into which an article may be placed with said paid units provding bearing surfaces on the fours sides of said article with the edges of said pad units extending beyond the plane of said sheet to space said sheet from the sides of a container.

For a further understanding of the present invention and for a more complete description thereof, reference may now be had to the following description taken in conjunction with the following drawings in which:

Fig. 1 is a view of a pad from the bearing face thereof;

Fig. 2 is a view of the back of the pad;

Fig. 3 is a view of the pad taken along the line 3—3 of Fig. 1;

Fig. 4 is a sectional view of the pad taken along the lines 4—4 of Fig. 1;

Fig. 5 is a view of the pad corresponding with Fig. 1, but with the flaps folded inwardly to form a receptacle;

Fig. 6 is a sectional view taken along lines 6—6; and

Fig. 7 is an isometric view showing a pair of pads applied to an article for packaging.

Referring now to Fig. 1, there is illustrated a packing pad which is fabricated in flat form and includes a rectangular sheet **10** of corrugated fiber board. Sheet **10** is dimensioned in exact correspondence with one face of an article to be packaged. In one embodiment, sheet **10** is provided with side flaps **11** and **12**, and end flaps **13** and **14**. All elements, sheet **10** and flaps **11—14**, are formed from a single sheet so that the flaps are integral with the sheet **10**. The flaps are conveniently formed by notching a large stock sheet at the corners. Preferably the stock sheet is embossed along lines **15**, **16**, **17**, and **18** to permit the flaps **11—14** to be folded inwardly toward the face of the sheet **10**. Flaps **13** and **14** each have a pad secured thereto as best seen in Fig. 2. More particularly, pad **20** is secured as by adhesive means to the face of the flap **13** opposite the bearing face of sheet **10**. The edge **21** of pad **20** coincides with the edge of flap **13**. The ends of pad **20** extend beyond the ends of flap **13** a distance approximately equal the thickness of the pad. The pad **21** is formed with an extension **22** so that at least a portion thereof is of width greater than flap **13** and thus overlies the boundary formed by the embossed line **16**. Preferably the width of the section **22** is equal the thickness of the pad **20**.

In a similar manner, a pad **24** is bonded onto the flap **14**. Flaps **11** and **12** have pads bonded thereto such as the pads **25** and **26** of Fig. 2. The pads **25** and **26** are of length corresponding with the length of flaps **11** and **12**. The outer edges of pads **25** and **26** and flaps **11** and **12** are aligned. Pads **25** and **26** are of width greater than flaps **11** and **12** by an amount preferably equal the thickness of the pads so that they overlie the boundaries formed by the embossed lines **15** and **17** by such amount.

In the end view of the pads shown in Fig. 3, it will be noted that the ends **20***a* and **20***b* of pad **20** extend beyond the edges of flap **13**, and that the unit is a flat unitary member which is readily adaptable to shipping or storage preparatory to use in packaging operations. In Fig. 4 the relationship between pads **25** and **26** and the sheet **10** may readily be seen. Sheet **10** serves as an intermediate member for maintaining pads **25** and **26** spaced apart and ready for forming into a package receiving receptacle.

In Figs. 5 and 6 the unit is illustrated in folded condition as to form an open-faced receptacle into which an article of rectangular polyhedron shape may be placed. Fig. 5 is a top view of such receptacle. In the sectional view of Fig. 6, it will be noted that pads **25** and **26** are in planes perpendicular to the plane of sheet **10** and extend beyond the plane of the sheet **10** in both directions so that

an article encompassed by the pad would have five of its sides spaced away from an enclosure or container by the pad.

In Fig. 5 it will be noted that flaps **13** and **14** serve to stop and position flaps **11** and **12** and thus provide a measure of rigidity to the folded pad to facilitate handling and to withstand some of the forces developed on the pads **25** and **26** in the direction of arrows **40** and **41**. It will readily be seen that forces developed along lines **42** and **43** will be supported by the pads **25** and **26**. Thus in all directions, an article supported by the pad is shielded from unwanted forces.

In Fig. 7, the use of two embodiments of the present invention has been illustrated. An article **50** to be packaged in a container **51** is shown. A pad **53** of the preferred type, illustrated in Figs. 1–6, is shown supporting the left end of article **50**. In this case the inside dimensions of container **51** in all cases exceed the outside dimensions of article **50** by an amount equal to twice the thickness of the pads plus the thickness of the stock sheet **10**. In the form illustrated, the pads are formed of a triple layer of corrugated fiber board so that the thickness of eight plys represents the difference between dimensions of container **51** and article **50**. As shown in Fig. 6, structure is such that the end of article **50**, Fig. 7, will be spaced from the adjacent end of container **51**. Through the use of two such pads, one on each end of an article such as article **50**, the article may be placed in a container which with flaps folded closed and secured will withstand substantial abuse without damage to the packaged article.

In the second embodiment of pad units shown in Fig. 7, pad unit **55** is similar in all respects to pad **53** except one end flap and an associated pad are not included. In this case the upper ends of pad units **56** and **57** are flush with the top of article **50**. A cover pad such as pad **58** may then be used to protect the top of article **50**. Only a portion of such a top pad **58** is shown in Fig. 7.

Having described the invention in connection with certain specific modifications, it is to be understood that further modifications may now suggest themselves to those skilled in the art and it is intended to cover such modifications as may fall within the scope of the appended claims.

What is claimed is:

1. A shipping pad comprising a flat rectangular corrugated sheet with flaps extending the full length of edges thereof and hingedly depending from such edges, multilayer corrugated pad elements secured to flaps hinged to adjacent sides of said sheet, one of said pad elements corresponding in length with its associated flap and aligned therewith along the free edge thereof but overlapping a predetermined distance the juncture between said sheet and said associated flap, the other of said pad elements being aligned with its associated flap along the free edge thereof and extending beyond each end of its associated flap and beyond the juncture of said sheet and its associated flap by distances of the order of the combined thicknesses of said pad element and said sheet.

2. A shipping pad comprising a flat rectangular corrugated sheet with flaps extending the full length of edges thereof and hingedly depending from such edges, pad elements substantially thicker than the thickness of said sheet adhesively secured to at least the two flaps hinged to two adjacent sides of said sheet, the pad element secured to the first of said flaps corresponding in length with said first of said flaps and aligned therewith along the free edge but overlapping the juncture between said sheet and said first flap a distance equal the combined thickness of said pad element and said sheet, the second of said pad elements being aligned with the second of said flaps along the free edge thereof and extending beyond each end of the second of said flaps and overlapping the juncture between said sheet and the second of said flaps distances equal the combined thickness of said pad element and said sheet whereby said first and second flaps may be folded to form a corner support for a packaged article.

3. The combination set forth in claim 2 in which the second pad element overlaps the juncture between the second of said flaps and said sheet for a distance approximately equal the length of said second flap minus twice the combined thicknesses of said second pad element and said sheet.

4. A shipping pad comprising a flat rectangular corrugated sheet with flaps extending the full length of and depending from sides of said sheet, pad units secured to corresponding faces of the two of said flaps on two opposite sides of said sheet, said pad units extending the length of said flaps and wider than said flaps to overlay the boundaries between said two of said flaps and said sheet, a pad unit secured to the same face of a third flap in an end of said sheet of length greater than the length of its associated flap by amounts equal twice the thickness of said pad units on said first and second flaps and overlaying for at least a portion of the length thereof the boundary between said third flap and said sheet whereby said flaps may be folded inwardly to form an article receiving zone.

5. A shipping pad comprising a flat rectangular corrugated sheet with flaps extending the full length of all edges thereof, a first pair of pad elements substantially thicker than the thickness of said sheet one secured to each of two opposite flaps and corresponding in length therewith but overlapping the junctures between said sheet and said two flaps, a second pair of pad elements one secured to each of the third and fourth of said flaps and extending beyond each end of said third and fourth flaps and overlapping the junctures between said sheet and said third and fourth flaps whereby said two flaps and said third and fourth flaps may be folded to form an end support for a packaged article.

6. A shipping pad comprising a flat rectangular corrugated sheet with flaps extending the full length of and depending from sides of said sheet, pad units secured to corresponding faces of the two of said flaps on two opposite sides of said sheet, said pad units extending the length of said flaps and wider than said flaps to overlay the boundaries between said two of said flaps and said sheet, a pad unit secured to the same face of a third flap in an end of said sheet of length greater than the length of its associated flap by amounts equal twice the thickness of said pad units on said first and second flaps and overlaying the boundary between said third flap and said sheet a distance less than the full length of said boundary by an amount about equal to twice the thickness of one of said pad units whereby said pad may be shaped either flat or said flaps may be folded inwardly to form an article receiving zone.

7. A shipping pad comprising a flat rectangular corrugated fiber board sheet having flaps extending the full length of all the edges thereof, a first pair of multi-layered corrugated fiber board pads of width greater than the width of said flaps by an overlay equal the combined thickness of one of said pads and said sheet and of length equal to that of the two flaps on opposite edges of said sheet, means for securing said pair of pads to said two flaps with said pads extending over the boundaries between said sheet and said two flaps by an amount equal said overlay, a second pair of multi-layered corrugated fiber board pads of the same width as said first pair for at least a central portion of the length thereof and each of length greater than the length of the third and fourth flaps by an amount equal twice said overlay, means for securing said second pair of pads to said third and fourth flaps with the ends thereof extending beyond each end of said third and fourth flaps by amounts equal said overlay and the said central portions thereof extending over the boundaries between said sheet and said third and fourth flaps by amounts equal said overlay.

8. The combination set forth in claim 7 in which said

pads are adhesively bonded to the entire surface of said flaps and the overlay portions thereof are maintained free.

9. A shipping pad comprising a flat rectangular corrugated sheet with flaps extending the full length of edges thereof and hingedly depending from such edges, multilayer corrugated pad elements secured to flaps hinged to adjacent sides of said sheet, one of said pad elements corresponding in length with its associated flap and aligned therewith along the free edge thereof but overlapping a predetermined distance the juncture between said sheet and said associated flap, the other of said pad elements being aligned with its associated flap along the free edge thereof and extending beyond each end of its associated flap by distances of the order of the combined thicknesses of said pad element and said sheet, and beyond the juncture of said sheet and its associated flap by said predetermined distance.

10. A shipping pad unit comprising a flat rectangular corrugated sheet with flaps extending the full length of and depending from the sides of said sheet, pad units secured to corresponding faces of two of said flaps on opposite sides of said sheet, said pad units extending the length of said flaps and each wider than said flaps by a predetermined amount to overlap the boundaries between said flaps and said sheet by said predetermined amount, a pad unit secured to the same face of a third flap on an end of said sheet and of length at least equal the length of said third flap and shaped along the edge opposite the free edge of said third flap to overlap by said predetermined amount the boundary between said sheet and said third flap only for a distance of the length of said third flap minus twice said predetermined amount whereby a plurality of said pad units may be shipped either flat or said flaps may be folded inwardly to form an article receiving zone.



**References Cited** in the file of this patent

UNITED STATES PATENTS

| | | |
|---|---|---|
| 2,534,011 | Frye | Dec. 12, 1950 |
| 2,623,682 | Candell | Dec. 30, 1952 |

FOREIGN PATENTS

| | | |
|---|---|---|
| 107,817 | Sweden | June 29, 1943 |