Aug. 22, 1967 P. F. PETRIEKIS ETAL 3,337,111

CORNER POST

Filed Oct. 14, 1964

FIG. 1

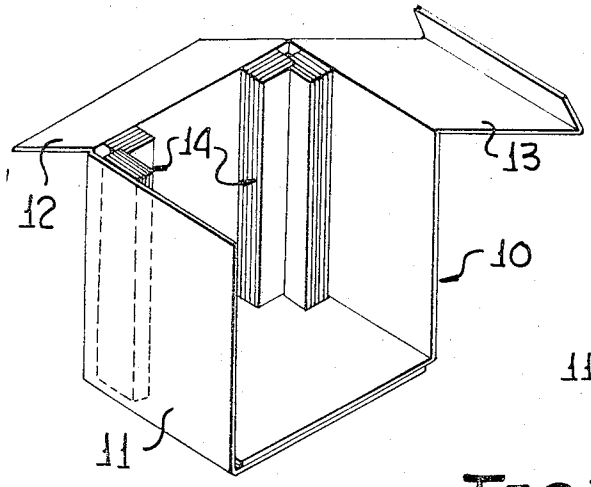


FIG. 2

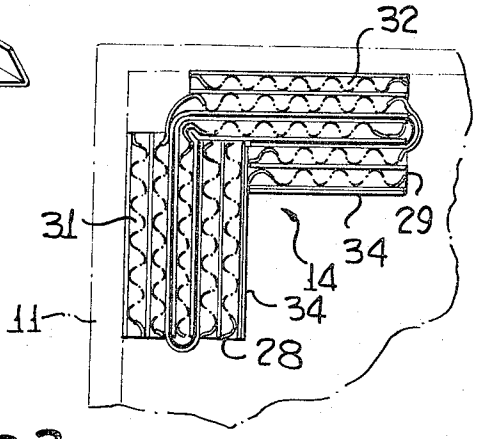
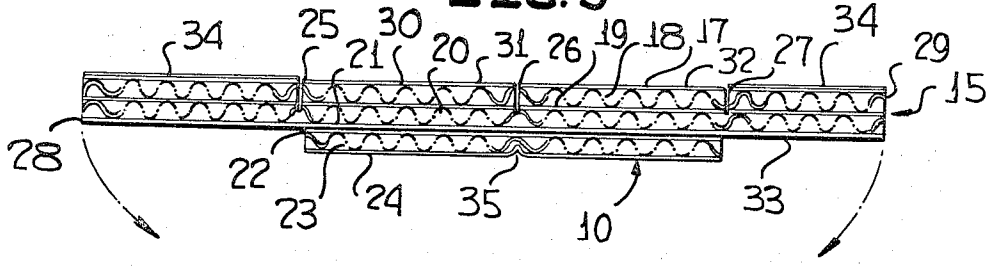


FIG. 3



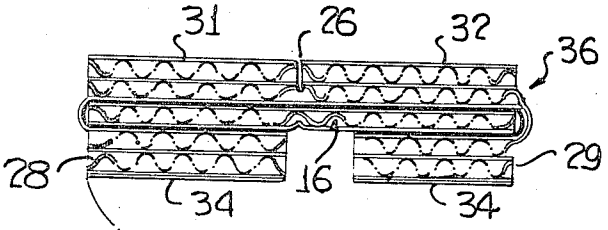


FIG. 4

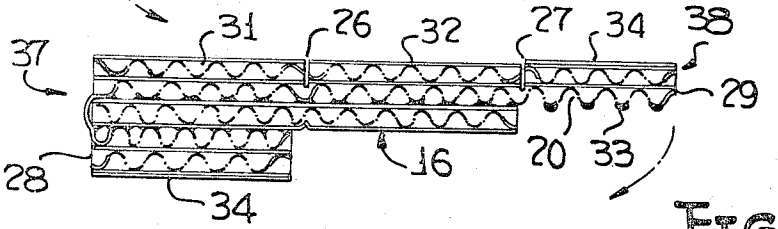


FIG. 5

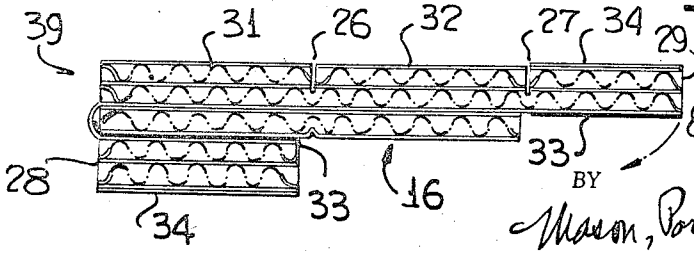


FIG. 6

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CORNER POST

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9 Claims. (Cl. 229—14)

This invention relates in general to new and useful improvements in packing construction, and more particularly to a novel corner post for insertion within a carton between an article being packed and the walls of a carton at a corner thereof.

During recent advances in the packing of relatively heavy articles in paperboard cartons, corner pads have been developed. These pads are normally formed of corrugated board and generally have an L-shaped cross section so that they will fit within the corners of cartons and will receive corners of the articles being packed. Such corner pads have been found to have two primary requirements. First, they must be able to absorb the shock imparted to corners of a carton without damage to the article packed therein. Secondly, since the packed cartons are oftentimes stacked, it is necessary that the corner pads function as corner posts so that the corner posts may support the overlying cartons independently of the article packaged within the cartons.

This invention in particular has to do with a corner pad which functions as a corner post and which is formed from corrugated board. The corner post is of an extremely simple construction so as to be economically feasible and at the same time has sufficient strength both transversely and longitudinally to avoid undue pressure by forces applied both to the corners of a carton and to the top of the carton, as by other cartons being stacked thereupon. It has been found that corner posts meeting the necessary requirements of packers may be readily formed from two separate web units of corrugated board.

It will be readily apparent that inasmuch as the corner posts are angular in outline, it is highly desirable that the corner posts be storable and shippable in a flat state. Therefore, it is the primary object of this invention to provide a novel blank assembly for a corner post which is normally flat and which is readily foldable to the L-shaped configuration of the corner post.

Another object of this invention is to provide a novel blank assembly for a corner post which may be formed by the simple expedient of supplying two web units on a continuous basis with one of the web units being centrally located with respect to the other, and the other web unit having outer panels which may be readily folded into overlying relation with respect to the associated web unit.

A further object of this invention is to provide in a corner post a hinge connection which is formed from the material of the corner posts and which permits the relative swinging or folding of panels of the corner post wherein a blank assembly for the corner post may be readily formed followed by the changing of the cross section of the blank assembly from a flat state to a generally L-shaped cross section.

With the above and other objects in view that will hereinafter appear, the nature of the invention will be more clearly understood by reference to the following detailed description, the appended claims and the several views illustrated in the accompanying drawing:

In the drawing:

FIGURE 1 is a top perspective view of a carton having in the corners thereof corner posts formed in accordance with this invention, one end wall of the carton being omitted for purposes of clarity.

FIGURE 2 is an enlarged top view of a corner post formed in accordance with this invention and shows its relative position with respect to a carton, the carton being shown in phantom lines.

FIGURE 3 is an end view of two web units which are assembled in the forming of the corner posts.

FIGURE 4 is an end view of the two web units of FIGURE 3 showing the same folded to define a blank assembly for forming the corner posts of FIGURE 2.

FIGURE 5 is an end view of a partially assembled modified form of blank assembly.

FIGURE 6 is an end view similar to FIGURE 5 showing another partially assembled blank assembly.

Refering now to the drawings in detail, it will be seen that there is illustrated in FIGURE 1 a carton unit which is generally referred to by the numeral **10**. The carton unit **10** includes a conventional carton **11** which is illustrated as having an open top and suitable flaps **12** and **13** for closing the top. In order that an article which is relatively heavy may be packed within the carton **11** and the resultant package may be suitable for shipment, the corners of the carton **11** are provided with corner posts, the corner posts being generally referred to by the numeral **14** and being formed in accordance with this invention. It is to be understood that the corner posts **14** have received therein corners of an article packed within the carton **11**. It is also to be understood that the corner posts **14** extend the full height of the carton **11** so that when the carton **11** is closed by inwardly folding the flaps **12** and **13**, the flaps will rest directly upon the corner posts **14** and any downwardly directed force applied to the top of the closed carton **11** will be directed down through the corner posts **14**.

Reference is now made to FIGURE 3 wherein there is illustrated the manner in which a corner post **14** is formed in accordance with this invention. The corner post **14** is formed of a first web unit **15** and a second web unit **16**. The web unit **15** is of a construction commonly referred to in the trade as a double wall corrugated sheet and the web unit **16** is generally referred to as a single wall corrugated board. The web unit **15** includes a first plain web **17** and a first corrugated web **18**, a second plain web **19**, a second corrugated web **20** and a third plain web **21** all of which are bonded together in a conventional manner by means of adhesive with the corrugations of the corrugated webs **18** and **20** extending longitudinally of the web unit **15**. In a similar manner, the web unit **16** is formed of a plain web **22**, a corrugated web **23** and a plain web **24**.

The web unit **15** is provided with three longitudinal slits at **25**, **26** and **27**. The slits **25**, **26** and **27** extend at least through the plain webs **17** and **19** and the corrugated web **18**. The slits **25** and **27** set off outer panels **28** and **29** leaving therebetween a central portion **30**. The slit **26** is preferably in the center of the central portion **30** and divides the central portion **30** into a pair of inner panels **31** and **32**.

The web unit **15** has a coating of adhesive **33** applied to the surface of the plain web **21** which is exposed. Also, the plain web **17** may have applied to the surface portions thereof defining the outer panels **28** and **29** a layer of non-scuff coating material **34**.

In order to facilitate the folding of the web unit **16** in the ultimate forming of a corner post **14**, at least the plain web **24** of the web unit **16** is scored to define a fold line **35**. It is to be understood that fold line **35** is to be aligned with the slit **26**.

The web units **15** and **16** are assembled initially in the general relationship shown in FIGURE 3 with the plain web **22** opposing the plain web **21** and the two webs being bonded together by means of the adhesive

33. Then the outer panels 28 and 29 of the web unit 15 are folded in the general direction of the arrows in FIGURE 3 so as to pass around the web unit 16, as is shown in FIGURE 4. The plain web 21 of the outer panels 28 and 29 are then bonded to the plain web 24 of the web unit 16 by the adhesive 33. At this time it is to be noted that the folding of the outer panels 28 and 29 is facilitated by the slits 25 and 27, but due to the fact that these slits do not extend entirely through the web unit 15, the outer panels 28 and 29 remain connected to the central portion 30 of the web unit 15. It will be apparent that in some instances the corrugated web 20 will be cut. However, in no instances will the plain web 21 be cut. Therefore, the outer panels 28 and 29 will remain connected to the central portion 30 of the web unit 15 at least by the plain web 21 and in certain instances by the corrugated web 20. The web units 15 and 16 having been bonded together in the manner shown in FIGURE 4, compose a blank assembly 36 from which a corner post 14 may be readily formed.

At this time it is pointed out that normally when the web units 15 and 16 are assembled, the web unit 15 will be disposed lowermost. However, the orientation of the web units 15 and 16 in FIGURES 3 and 4 have been shown generally in their inverted positions so that they may correspond to the showing of the corner posts in FIGURE 2.

It is pointed out at this time that the central portion 30 of the web unit 15 is of a width slightly greater than the width of the web unit 16. Also, it is to be noted that the outer panel 28 is of a width slightly less than one-half of the width of the web unit 16. Furthermore, it is to be noted that the outer panel 29 is of a slightly lesser width than the outer panel 28. Due to these differentials in widths, it will be readily apparent that the panels 28 and 29 may be easily folded around the web unit 16 in the manner shown in FIGURE 4. Also, it will be seen that the opposed ends of the panels 28 and 29 are in spaced relation. This permits the folding of the web assembly 36 to form the corner posts 14, as is shown in FIGURE 2.

The typical dimensions of the web units 15 and 16 in the forming of an equal leg corner post are as follows. The inner panels 31 and 32 are 3½ inches wide with the outer panel 28 being 3¼ inches wide and the outer panel 29 being 3 inches wide. The width of the web unit 16 is 6¾ inches so that each half thereof has a width of 3⅜ inches.

It will be readily apparent that the blank assembly 36 may be usually stored and shipped due to its flat state. When it is desired to utilize the blank assembly 36 as a corner post, it is merely folded in the manner shown by the arrow in FIGURE 4, with the result that the blank assembly assumes a right angular configuration, as is shown in FIGURE 2. The folding of the combined central portion 30 of the web unit 15 and the web unit 16 is easily accomplished due to the fold line 35 and the slit 26. It is to be noted that the positions of the opposed edges of the panels 28 and 29 are such that when the blank assembly 36 is folded to its right angular configuration to define the corner posts 14, the free edge of the panel 28 opposes the face of the web unit 16 and the free edge of the panel 29 opposes the face of the panel 28. In this manner, a maximum rigidity is obtained. Furthermore, there is maximum strength through the corner part of the corner post.

It is also to be noted at this time that all of the corrugations of the several corrugated webs extend longitudinally of the corner posts so that the corner posts not only have transverse crushing resistance, but also vertical crushing resistance. Thus, a carton, such as the carton 10 having disposed therein four corner posts 14 may support other cartons stacked thereon without the load being directly transmitted to the product within the carton 11.

In FIGURE 5 there is illustrated a modified form of blank assembly which is generally referred to by the numeral 37. It is to be noted that the blank assembly 37 differs from the blank assembly 36 only in that it is formed of a web unit which differs slightly from the web unit 15, the web unit being generally referred to by the numeral 38. The web unit 38 is identical with the web unit 15 with the exception of the fact that the plain web 21 has been omitted. In the forming of the blank assembly 37, it is necessary to make certain that none of the slits 25, 26 and 27 extend through the corrugated web 20. Also, it is to be noted that the adhesive 33 is applied to the crests only of the corrugated web 20. The blank assembly 38 is formed in the same manner as that described above with respect to the blank assembly 36 and further description is believed to be unnecessary.

In FIGURE 6 there is illustrated still another form of blank assembly, which is generally referred to by the numeral 39. The blank assembly 39 differs from the blank assembly 36 only in that the adhesive 33 is supplied only to the outer panels 28 and 29. It will be apparent that since the outer panels 28 and 29 remain connected to the remainder of the web unit 15, and since these outer panels are bonded to the web unit 16, there can be a saving of adhesive by omitting an adhesive bond between the central portion 30 of the web unit 15 and the web unit 16. It is also pointed out at this time that there can be a similar saving of adhesive in forming the blank assembly 37.

Although only several preferred embodiments of the invention have been specifically illustrated and described herein, it is to be understood that other minor variations may be made in the corner post construction within the spirit and scope of the invention, as defined by the appended claims.

We claim:

1. A packing corner post comprising internested first and second web units, said first web unit being folded around said second web unit and substantially encasing said second web unit, said first web unit being longitudinally weakened to define two outer panels and two inner panels disposed parallel to said outer panels, and said inner web unit being generally centrally folded to define two intermediate panels disposed between respective ones of said inner and outer panels, one of said inner panels being in face-to-face contacting relation to one of said intermediate panels, and the other of said inner panels being in edge-to-face contacting relation to said one inner panel.

2. A packing corner post comprising internested first and second web units, said first web unit being folded around said second web unit and substantially encasing said second web unit, said first web unit being longitudinally weakened to define two outer panels and two inner panels disposed parallel to said outer panels, and said inner web unit being generally centrally folded to define two intermediate panels disposed between respective ones of said inner and outer panels, said first web unit being of a multi-web construction, and said weakening being in the form of cuts through outer ones of said webs.

3. The corner post of claim 2 wherein each of said webs includes at least one corrugated layer, and the corrugations of said corrugated layers extending longitudinally of said corner post.

4. An assembled blank for a corner post comprising first and second web units, said first web unit being of a multiple web construction and being formed of two plain webs with a corrugated web positioned therebetween, at least an outer one of said plain webs and said corrugated web being longitudinally severed to define a central portion and outer panels, said second web unit being seated on said central portion and said outer panels being folded around and bonded to said second web unit, said second web unit having a generally centrally located fold line, and at least the outer one of said plain webs and said corrugated web being longitudinally severed in alignment with said fold line.

5. The blank of claim 4 wherein said second web unit is also of a multiple web construction including a corrugated web, and the corrugations of said corrugated webs extend longitudinally of said blank.

6. The blank of claim 4 wherein said first web unit also includes a second corrugated web and the severing of said first web unit is also through the other of said two plain webs with said second corrugated web serving to hingedly connect said outer panels to said central portion.

7. The blank of claim 4 wherein said first web unit also includes a second corrugated web and a third plain web, and the severing of said first web unit is also through the other of said two plain webs with said second corrugated web and a third plain web serving to hingedly connect said outer panels to said central portion.

8. An assembled blank for a corner post comprising a first web unit including a central portion and outer panels, a second web unit overlying said central portion, said first web unit being folded around said second web unit with said outer panel overlying and being secured to said second web unit, said second web unit having a centrally located longitudinal fold line, and said central portion being externally weakened in alignment with said fold line, said second web unit being of a width slightly less than the width of said central panel, one of said outer panels being of a width slightly less than one half the

width of said second web unit, and the other of said outer panels being of a width slightly less than the width of said one outer panel.

9. A method of forming a blank assembly for a corner post comprising the steps of providing a first web unit, longitudinally severing said first web unit partially therethrough along three parallel longitudinal lines to define a divided central portion and two outer panels, providing a second web unit having a longitudinal fold line, seating the second web unit on said central portion with said fold line aligned with the line of sever in said central portion, and then folding said outer panels around said second web unit and bonding said outer panels to said second web unit in face-to-face relation.

References Cited

UNITED STATES PATENTS

1,989,794	2/1935	Duval	161—50
2,896,832	7/1959	Lane	229—14
3,072,313	1/1963	Svendsen	229—14

FOREIGN PATENTS

419,770	11/1964	Great Britain.

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