July 6, 1965 E. M. RICHARDSON 3,193,173

REINFORCED BOX STRUCTURE

Original Filed Feb. 23, 1962 2 Sheets-Sheet 1

FIG. 1

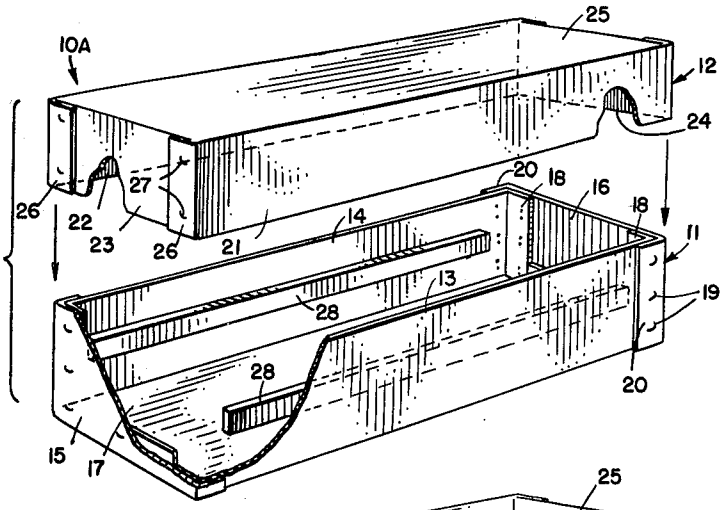


FIG. 2

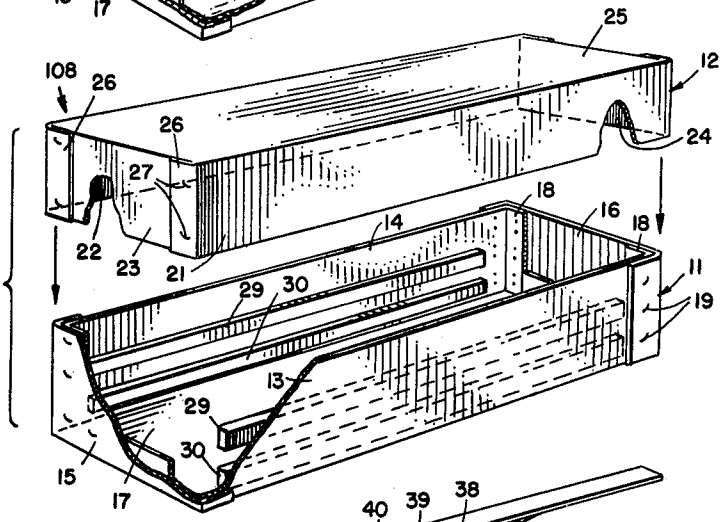
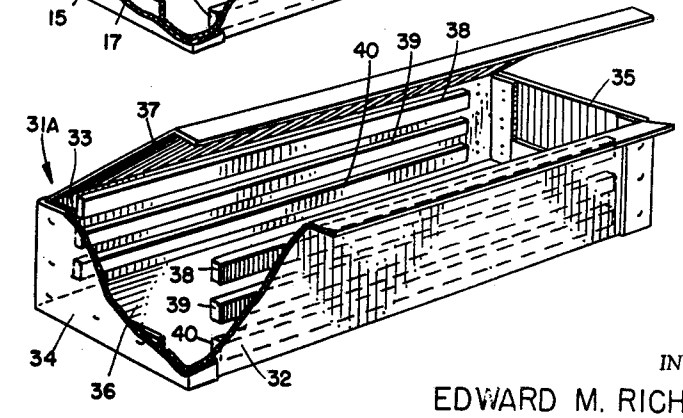


FIG. 3



INVENTOR:
EDWARD M. RICHARDSON
BY
Merzell, Johnston, Cook & Root
ATT'YS

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REINFORCED BOX STRUCTURE

Original Filed Feb. 23, 1962 2 Sheets-Sheet 2

FIG. 4

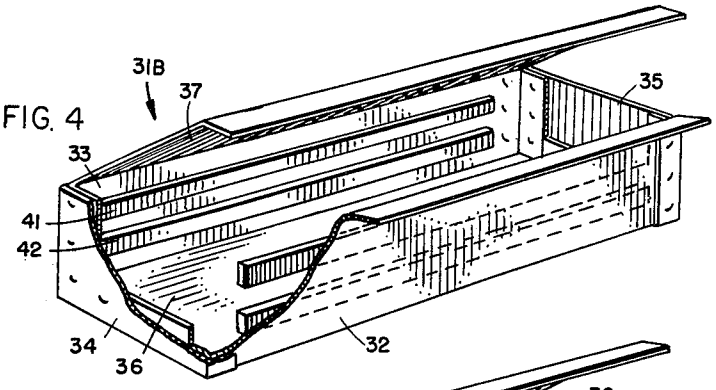


FIG. 5

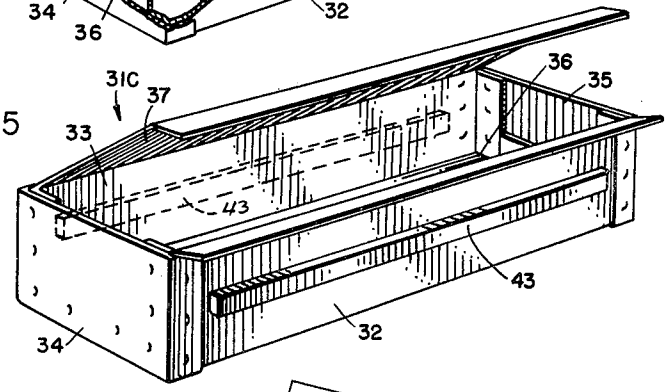
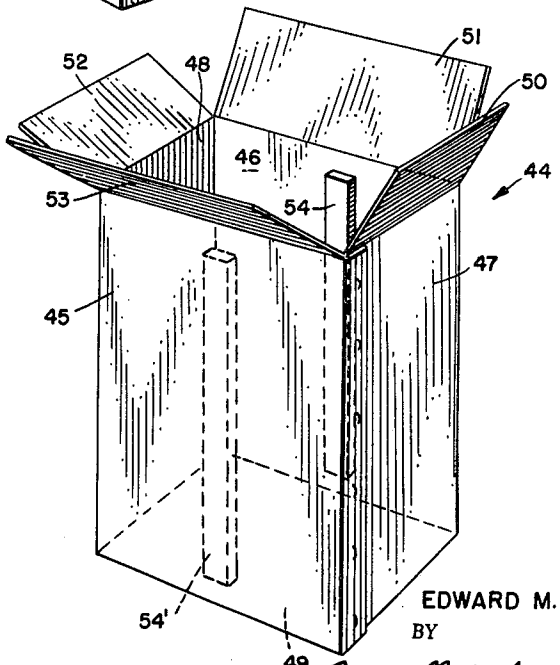


FIG. 6



INVENTOR:
EDWARD M. RICHARDSON
BY
Marzall, Johnston, Cook & Root
ATT'YS

United States Patent Office 3,193,173 Patented July 6, 1965

3,193,173

REINFORCED BOX STRUCTURE

Edward M. Richardson, Indianapolis, Ind., assignor to Boxcraft Corporation, Chicago, Ill., a corporation of Illinois

Continuation of application Ser. No. 179,267, Feb. 23, 1962. This application Oct. 24, 1963, Ser. No. 318,535
2 Claims. (Cl. 229—23)

This application is a continuation of my copending application Serial No. 179,267, filed February 23, 1962.

This invention relates generally to paperboard or fiberboard box structures, and more particularly to reinforced box structures of the type disclosed in Reissue Patent No. 24,220. Those box structures are used primarily in shipping goods such as meats, produce, vegetables, fruit, etc., although other uses and purposes will be apparent to one skilled in the art.

The present invention comprises a novel reinforced paperboard box structure having enclosing walls, some of which are reinforced by means of strips of reinforcing material. The term "paperboard" as used in connection with the invention includes corrugated paperboard and fiberboard or any other like material having at least the rigidity of corrugated paperboard. The reinforcing material is preferably made of narrow wood strips, although it may be made of paperboard or fiberboard, or of any other suitable type of material capable of performing the reinforcing function described herein. The reinforcing strips may be secured to the walls of the box structure by any suitable means which will enable the strips to affect the desired distribution of stresses over the side walls of the box structure. Exemplary of suitable means is a glue or adhesive, although staple means or like means may be used. Generally, the reinforcing strips will extend along the longest dimension of a side wall. For example, in an elongated rectangular box structure the strips may be applied longitudinally of, hence parallel to the edges of the opposite side walls thereof. Depending upon the size of the box structure and the reinforcement and support requirements thereof, one, two, or three strips may be arranged on the appropriate opposite side walls of the box structure with the very ends of the strips spaced substantially inwardly from the opposite end edges of the side wall. Thus the strips are of a length less than the length of the side walls to which they are secured. Spacing of the ends of the strips inwardly from the opposite end edges of the side walls eliminates the possibility of loosening or even tearing those strips from the side walls should the box be dropped on an end edge or corner, whether the strip is mounted on the inside or outside of the side wall; and when the strip might be mounted on the inside of a side wall, the spacing would perhaps prevent the strip from being forced completely through an adjacent perpendicular enclosing wall. Since the reinforcing strips are spaced substantially inwardly of the side wall edges they parallel, they tend to distribute the stresses over the entire side walls so that the box may adequately resist forces tending to crush the box, as when the boxes may be stacked one upon the other.

Heretofore, reinforcing strips have been arranged in pairs on opposite side walls of box structures, solely in the manner disclosed and taught in Reissue Patent No. 24,220, with the strips being adjacent to, hence but slightly inwardly and downwardly spaced from the top and bottom edges of the side walls to resist crushing of the longitudinal medial portion of the very top and very bottom of the box. It has been found that in some usages of box structures of that type, this arrangement may be modified to eliminate one strip on each side wall when compression stresses are sufficiently reduced that the resultant structure will remain functionally adequate. In many cases such modified structures will be functionally superior. That design will have a single narrow reinforcing strip for each side wall removed from positions adjacent the top or bottom edges of the side walls as taught in Reissue Patent No. 24,220 and placed substantially lower, in position approximately 20% of the height of the side wall to which it is secured.

Accordingly, an object of the present invention is to provide a box structure having new and improved reinforcing means comprising reinforcing strips arranged on certain opposed enclosing walls of the box structure container portion so as to strengthen the paperboard or fiberboard material from which the box structure is made to increase the strength of the box structure and its side walls without adding materially to the cost or weight.

A further object of the invention is in the provision of a box structure having reinforcing strips adhesively secured along certain opposed side walls as the sole added means for reinforcing those side walls, wherein the uppermost strip on each of those side walls is arranged substantially inwardly from the upper edge of the respective side wall to which it is secured.

A still further object of this invention resides in the provision of a paperboard or fiberboard box structure having reinforcing means on certain side walls wherein those reinforcing means consist of a single unitary wooden strip along each side wall, which strips are arranged intermediately between the top and bottom edges thereof, and which results in a more economical box structure, with respect to material cost and assembly cost, as well as reducing the overall weight of the box structure to save shipping charges and enhancing the reinforcing capacity of said strips compared to their reinforcing capacity when located closely adjacent the side wall top and bottom edges as described in Reissue Patent No. 24,220.

Another object of this invention is to provide a reinforced box structure having reinforcing strips arranged in pairs on a certain side enclosing wall, wherein the strips are spaced substantially inwardly from the top and bottom edges of the respective side walls thereby to enhance the reinforcing capacity of said strips compared to their capacity when positioned closely adjacent the side wall top and bottom edges.

Still another object of this invention lies in the provision of vertically arranged reinforcing strips secured to and parallel to the side edges of opposed walls of a vertically elongated box structure, and wherein said strips are positioned substantially inwardly of said side edges whereby the strips serve to rigidify and strengthen the overall box structure in an improved manner.

A further object of this invention is to provide a box structure having one, two, or three narrow reinforcing strips, at least one of which is secured to each of two opposed side walls substantially inwardly of the side wall edges for the purpose of distributing the stresses over the side walls so that the box structure may effectively resist crushing or collapsing due to carrying heavy goods therein, as well as heavy stresses generated by stacking the boxes one upon the other.

Other objects, features, and advantages of the invention will be apparent from the following detailed disclosure taken in conjunction with the accompanying sheets of drawings, wherein like reference numerals refer to like parts, in which:

FIG. 1 is a perspective view of a box structure including the main body portion and cover portion, with parts broken away in the main body portion to show underlying parts in accordance with the invention;

FIG. 2 is a perspective view of a modified box structure similar to that shown in FIG. 1, but showing a different reinforcing arrangement;

FIG. 3 is a perspective view of another form of box structure for illustrating that the present invention may be applied to other types of box structures, and further illustrating another modified form of reinforcing arrangement;

FIG. 4 is a perspective view similar to FIG. 3 with a still different reinforcing arrangement;

FIG. 5 is a perspective view of a box structure similar to that shown in FIGS. 3 and 4, illustrating the reinforcing arrangement as shown in FIG. 1, but with a reinforcing strip arranged on the outside of each of the side walls or panels; and

FIG. 6 is a perspective view of a vertically elongated box structure having the reinforcing strips arranged vertically on opposed walls of the enclosing side walls.

The particular embodiments herein disclosed for the purpose of illustrating the present invention generally comprise box structures made of paperboard or fiberboard, corrugated or plain, which are reinforced with wooden strips or slats, although the strips or slats may be made of any other suitable material which is at least as rigid as corrugated paperboard.

The box structure illustrated in FIGS. 1 and 2, and generally designated by the numerals **10A** and **10B** are of a type generally used for shipping of meats and the like, although other uses and purposes will be apparent to one skilled in the art. The box structures of FIGS. 1 and 2 include generally a main body **11** and a cover **12** which may be telescopically received over the upper open end of the main body.

The main body **11** includes opposed elongated side walls **13** and **14**, opposed end walls **15** and **16** and a bottom **17** interconnected together to form an elongated rectangular open-topped structure in which, as is apparent from the drawings, the bottom and side walls are of a length greater than either transverse dimension of the main body. The main body **11** may also be characterized as an elongate container in which the interconnected walls are interconnected along adjacent margins and in which the walls mutually support one another along the corners provided by said interconnected adjacent margins. In making the main body **11**, the side walls **13** and **14** and the bottom **17** may be shaped from a single piece of material and folded and interconnected at score lines in order to provide the side walls and bottom. End flaps, such as indicated at **18**, may be provided at the opposite end edges of the side walls and bottom to facilitate assembly with the end walls **15** and **16** which will be initially comprised of separate pieces and secured to the side walls and bottom by any suitable means such as staples **19**. The end walls **15** and **16** may likewise be provided with flaps, such as indicated at **20** to facilitate assembly and further rigidify the elongate container or main body **11**. Inasmuch as the present invention is only concerned with the unexpectedly enhanced reinforcement of certain opposed side walls of the box structure, the particular formation and arrangement of the bottom, side and end walls and the manner in which they are attached together and interconnected are of no particular consequence, so long as suitable type closures are provided.

Each cover **12** used with elongate containers of the types illustrated in FIGS. 1 and 2 includes parallel spaced elongated side walls **21** and **22**, parallel spaced opposed end walls **23** and **24**, and a top **25**, all of which are interconnected together to define the elongated rectangular cover **12**. Cover **12** may be made from a single piece of material, wherein the side walls **21** and **22** are hingedly connected to the top **25** by score lines, and the end walls **23** and **24** are hingedly connected to the top **25** by score lines. Flaps **26** may be provided on the ends of the side walls **21** and **22** so as to overlap the end walls **23** and **24** when the cover is properly folded, and to provide attaching means, wherein staples **27** may be driven through the flaps **26** and the end walls **23** and **24** and clinched on the inner sides to secure the cover components in properly folded relationship. The cover **12** will be sized and proportioned so that it may be telescopically received over the elongate container, wherein the opposite side walls **21** and **22** of the cover will respectively overlie the opposite side walls **13** and **14** of said container; and the opposite end walls **23** and **24** of the cover will overlie the opposite end walls **15** and **16** of said container, and the top **25** will close the open-topped elongate container and thereby provide a tightly enclosed box structure.

In the embodiment of FIG. 1, as well as those exemplified by the other figures, only the opposed side walls **13** and **14** are provided with reinforcing means. The other walls are free of similar reinforcing means. Each of those means consists of a single wooden strip or slat **28** extending longitudinally of one of the side walls or, in other words, parallel to the top and bottom margins or edges of the side wall, and fixedly secured to the inside of the side wall intermediately between, and substantially inwardly of the top and bottom edges thereof. The location of the single strips or slats which are secured to the side walls by any suitable means, such as by stapling, gluing, or the like, in spaced relationship from all of the interconnected margins of the elongate container serves to distribute the stresses over the entire side wall and to rigidify and strengthen the box structure as already discussed. The application of a single reinforcing strip or slat to each side wall serves to economize on the reinforcing materials employed as well as the assembly costs of the entire box structure, and further reducing the overall weight of the structure to save on shipping costs.

The very ends of the unitary strips **28** are located a substantial distance inwardly from the opposite end edges or margins of the side walls so that should a box be bumped, or should it fall on a corner, the corner will still remain resilient and absorb the impact due to the reinforcing strips which still maintain the proper rigidity in the side walls. However, should the reinforcing strips **28** extend completely from one end to the other end of each side wall, an impact or bump at the corner of the box would tend to loosen or even tear the slats or strips from the side walls and perhaps force it completely through an adjacent perpendicular enclosing wall. Therefore, it will be appreciated that the application of the reinforcing strips to the side walls in spaced relationship to all of the margins and edges of the side walls strengthens the box completely throughout, and prevents the box from sagging or buckling when heavily loaded when the boxes are stacked one upon the other.

Elongate containers corresponding to FIG. 1 and to the disclosure of Reissue Patent No. 24,220 were constructed and tested to determine their relative effectiveness in distributing stresses over their side walls. In doing so a plurality of identical elongate containers were made from 300 pound test corrugated paperboard. The containers were 29¾" x 9¼" x 9¼" in size. To a number of those containers wood reinforcing strips 3/16" thick by ¾" wide by 24½" long were secured by gluing. The ¾" width of those strips was substantially less than the height of the container side walls and was less than 25% of the side wall height, all as shown in the drawings herein.

To each of a pair of opposed side walls in four of the containers one of the strips was secured with its upper edge being ¼" below and parallel to the top side wall edge, that is closely adjacent the top edge as described by Reissue Patent No. 24,220. To each of a pair of opposed side walls in four other containers one of the strips was secured with its upper edge being 2¼" below and parallel to the top edge of the side wall in accordance with the teachings of this invention. Hence, the unitary strips used in the box structures, as shown by the drawings hereof, were substantially less than the height of the side walls while the longitudinal edges of the strips

were parallel to the longitudinal edges of the side walls between a lower position in which the longitudinal edges of each said strip extended along opposite sides of and parallel to the medial longitudinal line of the side wall to which said strip was secured, with the lower longitudinal edge of said strip spaced upwardly from the lower longitudinal edge of said side wall a distance equal to about half to the height of the said side wall, and an upper position wherein the upper longitudinal edge of each said strip is spaced downwardly from the upper longitudinal edge of the side wall to which said strip was secured a distance equal to 20% of the height of said side wall, with the lower longtudinal edge of said strip, when in said upper position, spaced upwardly from the location of its upper longitudinal edge when said strip is in its said lower position.

The tests were conducted by disposing the elongate containers on one of their side walls one at a time upon the lower horizontal planar platen of a compression machine. In the control test, that is where the containers were devoid of reinforcing strips, a wooden bearing block having a planar horizontal surface ¾" wide and 2" long was attached to an upper platen and was brought into engagement with the longitudinal medial portion of the opposed side wall ¼" from the top edge or margin of the side wall, with the 2" dimension of the block paralleling the top edge of the side wall. The upper platen, hence the wooden bearing block, was moved downwardly at a constant rate of ¾" per minute to a deflection of the side wall acted upon of 1½".

In the test with strips located adjacent the top edge of the container a single unitary strip of the dimensions described was glued adjacent to and ¼" from the top edge of each of the side walls. The same compression test setup was then utilized and deflection of the side wall acted upon by the bearing block was continued at ¾" per minute to a deflection of 1½".

A plurality of boxes constructed in accordance with this invention was then prepared with the same single reinforcing strips used in the preceding test being located 2¼" from the top edge of each of opposed side wall, or in other words little more than about 20% of the height of the side walls below the top edges. The wooden block attached to the upper platen was placed over the reinforcing strip of the closest side wall and was moved downwardly at the same speed and to the same deflection.

In each of those tests, four separate containers were tested. The average results of those tests are tabularized for convenience as follows:

Deflection (inches)	Load (pounds)		
	No strips (Group A)	Strip in location (Group B)	Strip located inwardly (Group C)
1	12	14	17
1½	15	19	24

The average improvements in the containers' strengths with respect to each other are as follows:

Deflection (inches)	Box Group B to Box Group A Percent	Box Group C to Box Group B, Percent	Box Group C to Box Group A, Percent
1	17	21	42
1½	27	26	60

As seen, the improvement of boxes of this invention over the prior art boxes disclosed by Reissue Patent No. 24,220 at a deflection of 1" and 1½", was 21% and 26%, respectively, for each side wall. Those very significant increases in strength and in reinforcing capacity were obtained without added cost or changes in material

requirements and were the result of moving the strips deeper in the side walls and inwardly to a position removed from adjacency with the top edges of the side walls, that is, inwardly of the top edges of the side walls at least a distance equal to 20% of the height of the side walls.

The box construction of FIG. 2 illustrates the identical box structure as FIG. 1 except that the reinforcing means is somewhat different. In FIG. 2, a pair of reinforcing strips or slats **29** and **30** are arranged on the opposite side walls **13** and **14**. It may be desirable to have the additional reinforcing strip wherein the depth of the box might be greater than that of the embodiment shown in FIG. 1. In this embodiment, the upper reinforcing strips **29** are also arranged centrally and intermediately between the top and bottom edges of the side walls as was the reinforcing strip **28** in FIG. 1. Strip **29** functions similarly and with the improved results obtained in the embodiment of FIG. 1 with strip **28**. The additional reinforcing strips **30** are parallel to and spaced from the reinforcing strips **29** and spaced upwardly from the bottom edge of each side wall. Likewise, the very ends of the reinforcing strips are spaced substantially inwardly from the opposite end edges of the side walls for the purpose explained in connection with the first embodiment.

A different form of corrugated paperboard box structure is illustrated in FIGS. 3, 4 and 5. The box structure is substantially the same as the standard "Bliss" type as described and disclosed in the aforementioned Reissue Patent No. 24,220. These box structures may be respectively identified generally by the numerals **31A**, **31B** and **31C**, and all of which include a main body or elongate container portion defined by opposed side walls **32** and **33**, opposed end walls **34** and **35** and a bottom **36**, and a hingedly mounted cover **37**. As in the case of the embodiments of FIGS. 1 and 2, the box structures of FIGS. 3, 4 and 5 form elongated open-topped structures in which the elongated side walls, the opposed end walls and the bottom are interconnected together along adjacent margins thereby providing mutual support for each other along the corners formed by those interconnected adjacent margins. So also is the length of the elongate containers greater than either transverse dimension thereof. The specific details of assembly of this box structure do not form any part of the present invention, and therefore need not be described in detail as they are in Reissue Patent No. 24,220. The present invention resides in the location of the reinforcing means applied to the opposite side walls **32** and **33** of the main body portion.

In the embodiment of FIG. 3, three wooden reinforcing strips or slats at least as rigid as corrugated paperboard are secured to the inside of each of the side walls **32** and **33** in parallel spaced relationship and extending longitudinally of the side walls, hence parallel to their top and bottom edges. These wooden strips include an upper wooden strip **38**, an intermediate wooden strip **39** and a bottom wooden strip **40**, all of which may be secured to the side walls of the main body in any suitable manner such as explained in connection with the embodiment of FIG. 1 as by stapling or gluing. The center or intermediate strip **39** will be centrally or medially arranged between the top and bottom edges of each of the side walls, hence quite distant from a location adjacent the top edges of the side walls. The longitudinal edges of the centrally located strips extend along opposite sides of and parallel to the medial longitudinal lines of the side walls to which the respective strips are secured. The upper and lower strips **38** and **40** will be spaced inwardly from the top and bottom edges of the side walls, respectively. Similar to the other embodiments, including those of FIGS. 1 and 2, the opposite ends of the strips will be spaced inwardly substantially from the opposite end margins of the side walls. The medially positioned strips, as in the embodiments of FIGS. 1 and 2, provide enhanced

and unexpected increases in strength as compared to the strength of the prior art counterparts.

The box structure 31B of FIG. 4 differs from that shown in FIG. 3 in that only a pair of strips or slats, including upper and lower strips 41 and 42, respectively, are secured to the inside of each of the opposed side walls 32 and 33 of the main body. In this arrangement, the top and bottom strips are spaced a substantial distance from the top and bottom edges of the side walls, respectively, which, as in the other embodiments, serves to enhance the ability of the reinforcing strips to equally distribute the stresses over the entire side walls and to rigidify and strengthen the box structure.

In FIG. 5, the box structure 31C illustrates the present invention, wherein the reinforcing strips or slats may be secured to the outer surfaces of the opposed side walls, and wherein a single reinforcing strip 43 is intermediately and centrally arranged between the top and bottom edges of the side walls of the main body as in the embodiments of FIG. 1. This arrangement is more desirable in the shipping of fresh fruits and vegetables and the like wherein a smooth interior is desired, while the positioning of the reinforcing strips on the outer surfaces serve to space the boxes from one another when arranged in stacked relationship in a boxcar or a truck to allow air circulation between the several boxes. Otherwise, this arrangement enjoys the same advantages as set forth in connection with the other embodiments including those of FIGS. 1 and 2 where a reinforcing strip is positioned on a side wall a distance from the top edge equal to at least 20% of the height of the side wall to enhance the ability of the reinforcing strip to strengthen the box and to distribute the stresses over the entire side wall.

The present invention is illustrated as applied to a vertically elongated corrugated paperboard box structure 44 in FIG. 6. That box structure has vertically elongated parallel spaced opposed side walls 45 and 46, vertically elongated parallel spaced opposed end walls 47 and 48, and a bottom wall 49 defining the main body thereof, and closing flaps 50, 51, 52 and 53 defining its cover portion. A single vertically arranged reinforcing strip or slat 54 is secured to the inside of each opposing side wall and arranged centrally between the opposed side edges thereof. Also, the opposite end edges are spaced inwardly from the top and bottom edges of the side walls and the improved functioning of this reinforcing arrangement is identical to that of the other embodiments. This merely illustrates the application of the present invention to a vertically elongated box structure.

Box structures corresponding to the type illustrated in FIG. 6 were tested with reinforcing strips located in accordance with Reissue Patent No. 24,220 and with this invention to determine their relative resistance to end-to-end compressive stresses. The box structures tested comprised 200 pound test corrugated paperboard elongate containers, 24" in height by 12" each in width and length, each having glued closures. Four box structures were tested without strips, four were tested with a reinforcing strip bonded closely adjacent one side edge of each of the opposed side walls ¼" removed from and parallel to that edge as taught by Reissue Patent No. 24,220 and four were tested with an identical strip bonded to each of the opposed side walls with the strip's closest longitudinal edge spaced 2½" from the same side wall edge, or, in other words, a distance from said side edge equal to at least 20% of the height of the side wall to which it was bonded. The strips used all were 7/16" thick, 1¼" wide, that is less than 25% of the height of the side wall, and 23" long.

The tests were conducted by standing each of the containers on end on a lower horizontal planar platen of a compression machine. As such, where strips were present they were perpendicular to the horizontal platen surface of the compression machine. An upper planar platen overlying and parallel to the entire uppermost surface of the container was then moved downwardly toward the lower platen at a uniform and constant rate of ¾" per minute, thereby subjecting the container to a gradual end-to-end or vertically directed compressive force. The compressive forces were continued until each container failed.

The results of the tests are represented in tabular form as follows:

Deflection (inch)	Load (pounds)											
	No strips (Group A)				Strips as in reissue (Group B)				Strips spaced inwardly (Group C)			
	Box No.				Box No.				Box No.			
	1	2	3	4	5	6	7	8	9	10	11	12
0.1	260	175	205	220	160	210	200	165	170	300	185	150
0.2	500	380	420	550	270	530	470	360	330	580	360	320
0.3	*680	*660	*690	*720	460	*715	670	590	650	785	620	590
0.4	370	330	230	360	*700	580	*780	*775	760	750	*760	800
0.5	------	------	------	------	655	------	600	610	*860	*870	650	*835
0.6	------	------	------	------	------	------	------	------	710	600	------	620

*Maximum Load.

The test result averages are as follows:

Box structures group	Maximum load			Maximum deflection (at maximum load)		
	Pounds	Percent improvement		Inch	Percent improvement	
		Over A	Over B		Over A	Over B
A	688	------	------	0.30	------	------
B	743	11	------	0.38	28	------
C	831	21	12	0.48	26	26

Thus it may be seen that moving a reinforcing strip from the position taught by the prior art, that is from a position adjacent the top and bottom edges of the side walls, to the position disclosed herein provides a box structure which is 26% more resistant to deflection and 12% more resistant to compressive forces than prior art Reissue Patent No. 24,220 box structures.

While some of the embodiments disclose the reinforcing strips or slats arranged on the inner sides of the side walls and other embodiments show the slats arranged on the outer side of the side walls, it will be appreciated that this arrangement may be reversed in any one of the embodiments; and further, any of the reinforcing arrangements may be applied to any of the forms of box structures.

It will be understood that modifications and variations may be effected without departing from the scope of the novel concepts of the present invention, but it is understood that this application is to be limited only by the scope of the appended claims.

I claim:

1. A heavy duty shipping box structure having a body of flexible paperboard material having a rigidity at least equal to corrugated paperboard and including interconnected bottom, side and end walls, the longitudinal dimension of said side and bottom walls being substantially greater than the transverse dimension of the box, and a single one piece elongated strip of wood having a width substantially less than the height of a side wall forming the sole reinforcing means for each side wall and being adhesively secured to each opposed side wall, the opposed longitudinally extending sides of said strip being positioned along opposite sides of and parallel to the medial longitudinal line of the side wall to which it is attached, said end and bottom walls being free from reinforcing means, said strip having substantially greater rigidity than the material of said body, the ends of each strip being spaced substantially inwardly from the opposite non-longitudinal edges of the side wall, whereby said strips distribute the stresses over the side walls, thereby rigidifying and strengthening said box structure.

2. A heavy duty shipping box of flexible paperboard material at least as rigid as corrugated paperboard, comprising bottom, side, and end walls of said material having interconnected adjacent margins to form an elongate container wherein said walls mutually support one another along the corners provided by said interconnected adjacent margins and said bottom and side walls are of a length greater than either transverse dimension of said container, said end and bottom walls being free from reinforcing means secured thereto, and reinforcing means applied only to said side walls in spaced relationship to each and all of said interconnected adjacent margins to distribute stresses applied to said container over said side walls thereof for rigidifying and strengthening said container, the last said reinforcing means consisting of two unitary strips of wood each having greater rigidity than said paperboard material and being of a width substantially less than the height of said side walls and of a length less than the inside length of said elongate container, said strips being secured not only along substantially their entire lengths to said side walls, respectively, and between said end walls with the longitudinal edges of said strips substantially parallel to the longitudinal edges of said side walls and with the opposite ends of each said strip spaced from said end walls, respectively, but also in a position between a lower limit whereat the longitudinal edges of each said strip extend along opposite sides of and parallel to the medial longitudinal line of the side wall to which said strip is secured, with the lower longitudinal edge of said strip spaced upwardly from the lower longitudinal edge of said side wall a distance equal to about half of the height of the last said side wall, and an upper limit whereat the upper longitudinal edge of each said strip is spaced downwardly from the upper longitudinal edge of the side wall to which said strip is secured a distance equal to twenty percent of the height of said side wall, with the lower longitudinal edge of said strip spaced upwardly from the medial longitudinal line of said side wall a distance greater than half of the width of said strip.

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FRANKLIN T. GARRETT, *Primary Examiner.*

UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,193,173 July 6, 1965

Edward M. Richardson

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 5, lines 50 to 60, in the table, heading to the third column for "Strip in location (Group B)" read -- Strip in reissue location (Group B) --; column 8, lines 42 to 55, in the table, next to the last column, near the right margin, under the subheading "Over A", line 2 thereof, for "26" read -- 60 --.

Signed and sealed this 30th day of November 1965.

(SEAL)
Attest:

ERNEST W. SWIDER
Attesting Officer

EDWARD J. BRENNER
Commissioner of Patents