Oct. 9, 1962 I. RICHER 3,057,460

CORRUGATED L-SHAPED SUSPENSION BAR FOR GARMENT BOXES

Filed Feb. 10, 1960 3 Sheets-Sheet 1

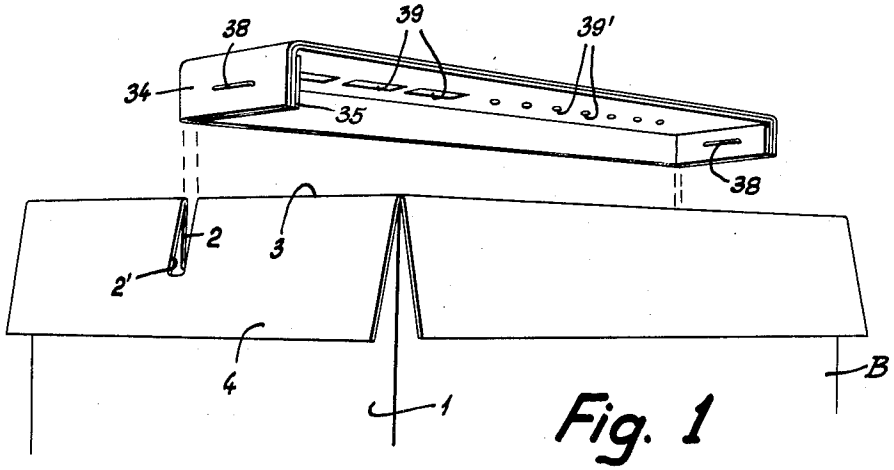
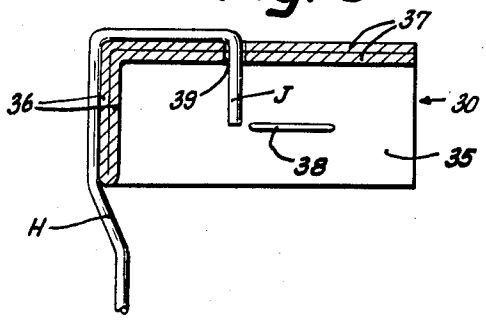


Fig. 1

Fig. 6



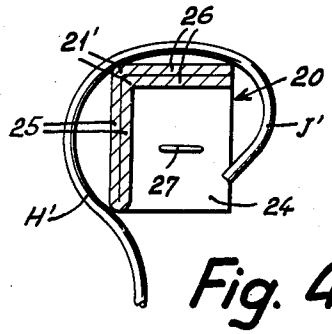


Fig. 4

Fig. 3

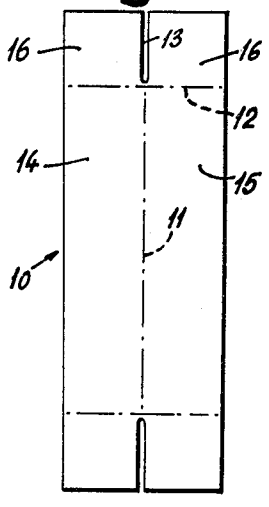
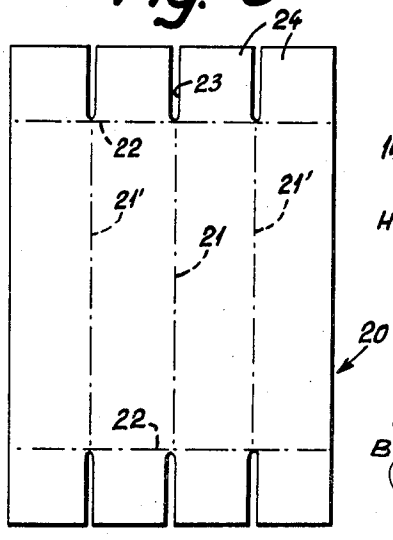


Fig. 5



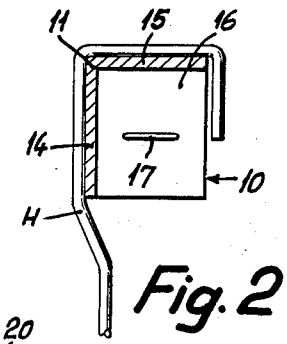


Fig. 2

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CORRUGATED L-SHAPED SUSPENSION BAR FOR GARMENT BOXES

Filed Feb. 10, 1960 3 Sheets-Sheet 2

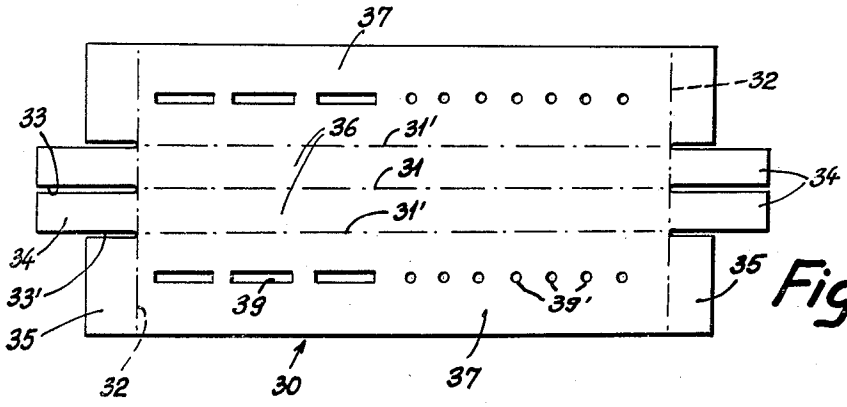


Fig. 7

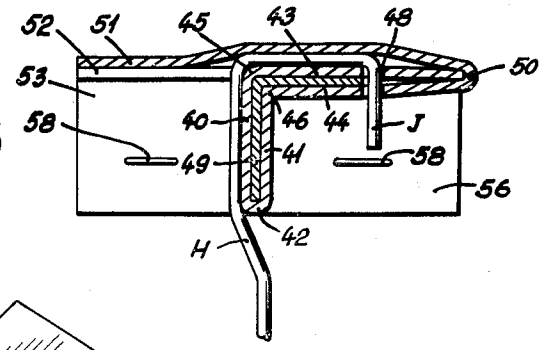


Fig. 8

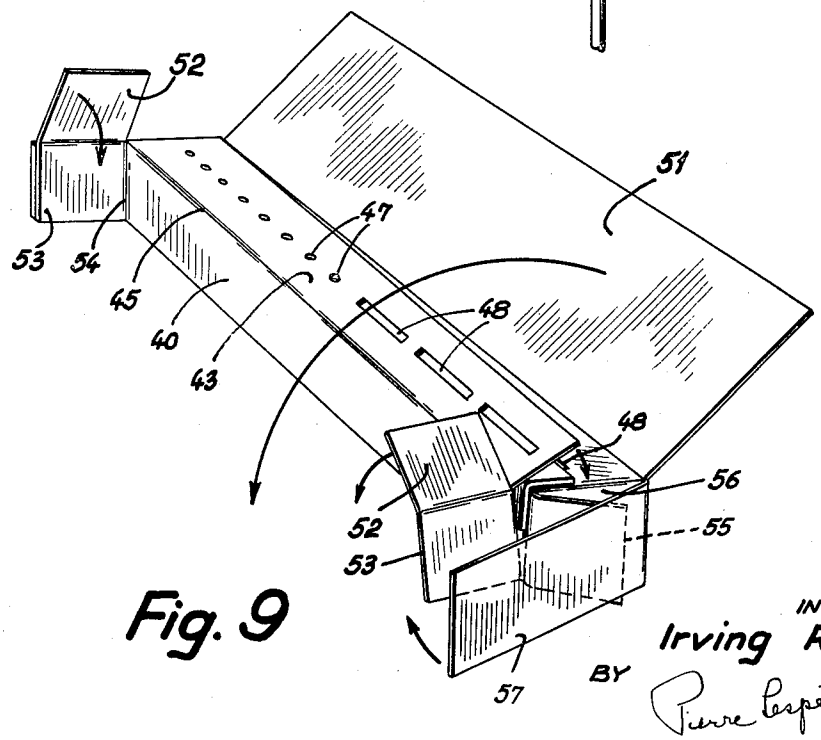


Fig. 9

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CORRUGATED L-SHAPED SUSPENSION BAR FOR GARMENT BOXES

Filed Feb. 10, 1960 3 Sheets-Sheet 3

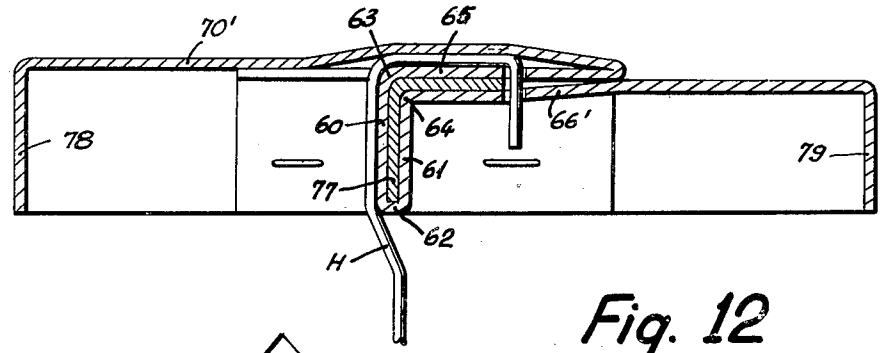


Fig. 12

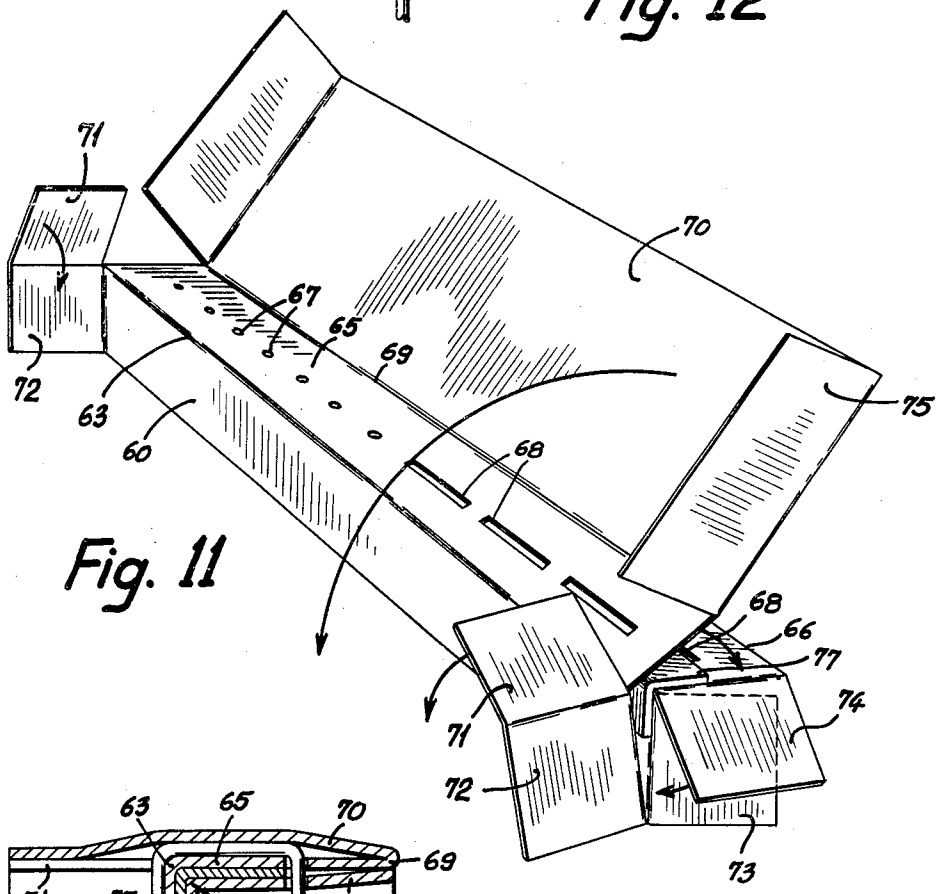


Fig. 11

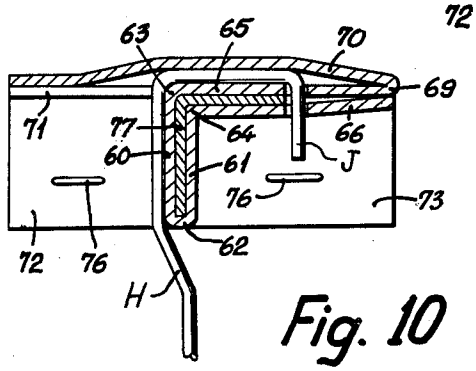


Fig. 10

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United States Patent Office

3,057,460

Patented Oct. 9, 1962

3,057,460

CORRUGATED L-SHAPED SUSPENSION BAR FOR GARMENT BOXES

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Filed Feb. 10, 1960, Ser. No. 7,787
13 Claims. (Cl. 206—7)

The present invention relates to a suspension bar for garment boxes made of fibreboard and which is an improvement over the suspension bar or unit described in my U.S. Patent No. 2,827,160.

The general object of the invention is to provide a suspension bar for suspending hangers in a garment box, which facilitates the hooking of the hangers on the bar and which supports the hangers in an improved manner so as to completely prevent tearing of the fibreboard material constituting the suspension bar.

Another object of the present invention is the provision of a suspension bar of the character described which is of simplified construction and which requires a minimum of fibreboard material.

Yet another important object of the present invention is the provision of a simple suspension bar which can be designed for light weight garments as well as for heavy weight garments.

Still another important object of the present invention is the provision of a suspension bar of the character described provided with means for positively locking the hanger hooks in position to prevent disengagement of said hooks from the hanger bar during shipping and handling.

The foregoing and other important objects of the present invention will become more apparent during the following disclosure and by referring to the drawings in which:

FIGURE 1 is a perspective view of the top portion of a garment box, and of one embodiment of the suspension bar in accordance with the present invention shown in position ready to be fitted in position on top of the box;

FIGURE 2 is a cross-section of a first embodiment of the suspension bar and showing how a hanger hook is suspended therefrom;

FIGURE 3 is a plan view of a blank for making the first embodiment;

FIGURE 4 is a cross-section of a second embodiment of the hanger bar shown in association with a somewhat rounded hook;

FIGURE 5 is a plan view of the blank for making the second embodiment;

FIGURE 6 is a cross-section of a third embodiment corresponding to the embodiment shown in FIGURE 1;

FIGURE 7 is a plan view of the blank for making the third embodiment;

FIGURE 8 is a cross-section of a fourth embodiment;

FIGURE 9 is a perspective view of the blank for making the fourth embodiment shown in partially folded condition;

FIGURE 10 is a cross-section of a fifth embodiment;

FIGURE 11 is a perspective view of the partially folded blank for making the fifth embodiment; and

FIGURE 12 is a cross-section of a modified form of the fifth embodiment, shown as a complete roof cap.

Referring now more particularly to the drawings in which like reference characters indicate like elements throughout, it will be noted that all the embodiments of the present invention are essentially constituted by a suspension bar made of corrugated fibreboard having an L-shape cross-section and right angular end flanges so arranged as to be supported across the opened top end of a box B by two opposite side walls 1 of said box which are

provided with slits 2 opening at the top edge 3 of the box. More particularly, the vertical flange of the L-shaped bar is adapted to be fitted within the slits 2 and to project through said slits to the exterior of the side walls 1 with the end flanges of the bar engaging said external face of the side walls. The box B may be provided with downwardly turned flaps 4 depending from the top edge 3 and which are also slit with slits 2' registering with slits 2 so also to receive the vertical flange of the suspension bar.

Referring to the first embodiment shown in FIGURES 2 and 3, the suspension bar 10 in accordance with the present invention may be made from a rectangular blank having a single longitudinally extending fold lne 11 centrally disposed and with transverse fold lines 12 at both ends of the blank 10 to define end sections which are each provided with a slit 13 which is a continuation of the fold line 11. Thus, the two flanges 14 and 15 defined by the longitudinal fold line 11 are bent or folded at right angles about said fold line 11 and the end flaps 16 are folded at right angle to their respective flanges 14 and 15 and stapled together by staple 17 or secured together by other means to provide the right angular end flanges of the bar. The width of the horizontal flange 15 is such as to engage the inside of the hook H of a hanger. Thus, the square hook H of a hanger may be easily fitted on the bar 10 and may be positioned in any longitudinal position with respect to the bar so as to be placed at irregular intervals depending on the thickness of the garments supported by the hangers.

The bar 10 in accordance with the first embodiment is more particularly adapted for light weight garments such as summer dresses and the like; because the hangers fit the bar, they are prevented from displacement transversely of the bar. Rounded hanger hooks H' may also be hung on the bar, as shown in FIGURE 4.

It will be seen that it is easy to suspend the hangers on the bar 10 once the bar is fitted on the box B. It is possible to suspend several hangers at one time because the bar is accessible from above.

FIGURES 4 and 5 illustrate a second embodiment essentially similar to the first embodiment, except that it is of a double layer construction and is therefore stronger. The blank 20 shown in FIGURE 5 is also of rectangular shape and has three longitudinally spaced parallel fold lines 21, 21', and transverse fold lines 22 near the ends thereof, to define end sections which have slits 23 forming a continuation of the respective fold lines 21, 21', to thereby define end flaps 24. The blank 20 is folded about central fold line 21 and then at right angle about fold lines 21' so as to form vertical flange 25 and horizontal flange 26 each of double layer construction, these flanges being maintained at right angle by means of the folded overlapping end flaps 24 which are secured together by staples 27 or the like. It will be noted that there are two pairs of flaps at each end defining the end flanges of the bar 20. These pairs of flaps may be stapled together or independently and in the latter case the bar fitted on the box B such that the outer pair of flaps only will engage the outer face of the side walls 1 or flaps 4, while the inner pair of flaps will fit the inside face of the side walls 1. The hook H or H' of hangers are suspended on the bar 20 in accordance with the second embodiment in the same manner as for the first embodiment, and may be positioned anywhere longitudinally of the transverse bar.

FIGURES 1, 6 and 7, show a third embodiment. This embodiment is essentially the same as the second embodiment except that it is wider than the width of the hook and thus the free end portion J of the hook enters a hole or slot made in the horizontal flange. The blank 30 of

the third embodiment is also of generally rectangular shape with a central longitudinal fold line **31** and lateral spaced parallel fold line **31'** on each side of the central one, and with a transverse fold line **32** near each end of the blank to define end sections which have slits **33** and **33'** aligned with the fold lines themselves so as to define end flaps **34** and **35**. The central sections are folded to define a double layer vertical flange **36** while the outer sections are folded about lateral fold lines **31'**, to form the double layer horizontal flange **37** which is wider than the vertical flange **36**. The central end flaps **34** are made long enough to completely overlap the end flaps **35** depending from the sections constituting the horizontal flange. The two pairs of flaps may be stapled together by staples **38** to form the end flanges of the bar **30** or may be stapeld independently so that the end flanges of the bar may straddle the side walls **1** of the box. The layers of the horizontal flange are provided with slots **39** and/or holes **39'** extending parallel to the fold line **31'** at a distance corresponding to the width of the hook so as to receive the free end J or J' of a hook with the main part thereof extending along the vertical flange of the bar, as clearly shown in FIGURE 6. This construction is stronger than the first two embodiments and is designed to support a larger weight as the pressure exerted by the bar on the side walls **1** of the box is distributed over a greater length of the top edges **3** of said side walls **1**. This third embodiment can also receive rounded hooks H' of hangers.

The fourth embodiment of the invention is shown in FIGURES 8 and 9 and is more particularly designed for heavy garments because it has means for transferring part of the pressure exerted by the suspension bar on the opposite side of the slits **2** and **2'**. This embodiment comprises a vertical flange constituted by layers **40** and **41** integrally united along a fold line **42** which forms the lower free edge of the vertical flange. The horizontal flange is constituted by layers **43** and **44** which are united to layers **40** and **41** respectively by fold lines **45** and **46**. The horizontal flange is wider than the width of the hooks H and is provided with registering holes **47** and/or slots **48**, at a distance from the vertical flange designed to receive the free end J or J' of the hooks H or H' with the main portion of the latter abutting against the vertical flange as in the third embodiment.

If desired, a metal bar **49** of L-shaped cross-section and preferably made of steel is inserted between the two layers of the horizontal and vertical flanges and its horizontal flange terminates at the row of holes **47** and slots **48**. This bar considerably reinforces the suspension unit for extra-heavy weight to be supported thereby. The lower layer **44** of the horizontal flange is integrally connected by a fold line **50** to a hanger locking flap **51** which is wider than the horizontal flange and is adapted to be folded over the top layer **43** and over the hooks to positively lock the hooks in engagement with the suspension bar, as shown in FIGURE 8. The flap **51** is secured down in locking position by being stapled or otherwise secured to flap extensions **52** which depend from end flaps **53** themselves integrally connected by fold line **54** to the end of layer **40** of the vertical flange. Flaps **53** are folded at right angle to the vertical flange and away from the horizontal flange while flap extensions **52** are folded down to lie in the plane of the horizontal flange. The layers **41** and **44** are provided at both ends thereof with end flaps **55** and **56** which are folded in overlapping position and stapled together to maintain the vertical and horizontal flanges at right angle to each other. Flaps **55**, **56** correspond to the end flaps of the blank in FIGURE 3. End flaps **56** are further provided along one lateral edge thereof with an integrally connected weight transfer flap **57** which is adapted to be folded back against the overlapping flaps **55** and **56** and against flap **53** to be stapled thereto, such as by staples **58**.

In the use of this embodiment, the blank is folded and

the end flaps **55** and **56** and the weight transfer flap **57** and flap **53** are stapled together and the unit is then positioned within the slits **2**, **2'** of the box with the hanger hook locking flap **51** in opened position. The hangers are then suspended with their garments on the bar and when the box is fully loaded, the hook locking flap **51** is folded back on top of the hooks and secured to the flap extensions **52**. It will be noted that the flaps **51** and **57** serve to transfer part of the pressure exerted by the suspension bar on the top edges of the box on the side of the slits **2**, **2'** opposite from the horizontal flange of the bar. Thus, heavy garments may be suspended by the bar in accordance with this embodiment.

The fifth embodiment in accordance with the present invention is illustrated in FIGURES 10 and 11. This embodiment is very similar to the fourth embodiment, except that the hook locking flap is integrally connected to the top layer of the horizontal flange instead of being connected to the lower layer thereof. In this embodiment, the blank for making the same is provided with spaced parallel longitudinally extending fold lines defining sections therebetween constituting flanges **60** and **61** of the vertical flange integrally united by fold line **62** forming the longitudinal free lower edge of the vertical flange, and integrally united by fold line **63** and **64** to top and bottom layers **65** and **66** respectively of the horizontal flange. The layers **65** and **66** are provided with registering holes **67** and/or slots **68** disposed along a row parallel to and spaced from the corner edge of the L-shaped bar a distance corresponding to the width of the hooks, so as to receive the free end portion J of the hanger hooks H. The top layer **65** is integrally united by fold line **69** to a hook locking flap **70** which is adapted to be folded back on top of the hooks H inserted within holes or slots **67** and **68** to be secured to the flap extensions **71** which depend from flaps **72** themselves integrally connected to the layer **60** of the vertical flange. The layer **61** of the vertical flange has end flaps **73** adapted to be folded in overlapping position with end flap **74** of the lower layer **66** of the horizontal flange. The flaps **72**, **73** and **74** are adapted to be rigidly united by means of end flaps **75** depending from the hanger hook locking flap **70** and which are adapted to be folded downwardly over flaps **72**, **73** and **74** and stapled thereto by means of staple **76**. This embodiment can also be provided with an L-shaped steel bar **77** adapted to be inserted between the two layers of the vertical and horizontal flanges of the unit. The steel bar **77** will extend right to the end flap **75** and is adapted therefore to rest at its ends on the top edge of each side wall of the box.

The unit in accordance with the fifth embodiment has exactly the same advantages as the fourth embodiment, except that it has provision for easily making the same an integral part of a roof cap for the box B as shown in FIGURE 12, wherein the hanger hook locking flap **70'** is extending to cover a half portion of the box and is provided with end flanges **78** adapted to overlie the opposite end wall of the box. Similarly, the lower layer **66'** of the horizontal flange is extended, to cover the other remaining half of the box B and is also provided with an end flange **79** for overlying the opposite side wall of the box. With this modification, the extension bar is positioned on top of the box with the flap **70'** in opened position so as to easily insert the hooks of the hangers in position on the bar and then when the box is fully loaded, the flap **70'** is folded down to complete the closure of the box and also to provide means for positively maintaining the hooks in position on the bar.

It will be noted that each of the embodiments herein shown can be broken down to a common denominator of FIGURES 2 and 3 and FIGURES 4 and 5. These initial embodiments form the basis of all subsequent modifications.

While preferred embodiments in accordance with the present invention have been illustrated and described, it

is understood that various modifications may be resorted to without departing from the spirit and scope of the appended claims.

What I claim is:

1. A suspension bar for suspending hangers in a garment box, said bar made of a folded sheet of fibreboard having an inverted L-shaped cross-section defining a vertical flange adapted to be disposed on edge and inserted in slits made in the upper edge portion of opposed side walls of a garment box, and a horizontal flange adapted to rest on the top edges of said side walls, and end flaps integrally connected to the vertical and horizontal flanges at both ends thereof, and folded and secured in overlapping position to form end flanges adapted to lie on the outside of said side walls for maintaining said flanges at substantially right angles to each other, so constructed and arranged that a hanger hook can fit on said L-shaped bar.

2. A suspension bar as claimed in claim 1, wherein said vertical and horizontal flanges are each made of a double layer of fibreboard.

3. A suspension bar as claimed in claim 2, further including a metal bar of L-shaped cross-section inserted between the double layers of said horizontal and vertical flanges.

4. A suspension bar as claimed in claim 2, wherein said horizontal flange is provided with openings spaced from the vertical flange for receiving the free ends of the hanger hooks.

5. A suspension bar as claimed in claim 4, further including a hanger locking flap integrally connected with a layer of the horizontal flange along the edge of the latter and adapted to be folded back over the horizontal flange and hanger hooks supported thereon to positively lock said hangers in suspended position on said bar.

6. A suspension bar as claimed in claim 4, wherein said vertical flange has flap extensions at the two ends thereof, said hanger locking flap being secured to said flap extensions in folded hanger locking position.

7. A suspension bar as claimed in claim 5, wherein said hanger locking flap is extended to close the top of half the box while the other of said layers of said horizontal flange

is extended in the opposite direction to close the remaining half of the box.

8. A suspension bar as claimed in claim 6, further including flaps depending from the ends of said hanger locking flap and secured to the end flaps of said vertical and horizontal flanges and to said flap extensions.

9. A suspension bar as claimed in claim 6, further including additional flaps extending from the end flaps of said horizontal flange and folded back in overlapping position and secured to the end flaps of said vertical and horizontal flanges and to said flap extensions.

10. The combination of a fibreboard shipping container having vertical slits opening at the top edge of opposed side walls thereof, with a suspension bar for clothes hangers, said suspension bar made of fibreboard and of an inverted L-shaped cross-section providing a horizontal flange resting on the top edge of said opposed side walls, and a vertical flange inserted in said slits, said bar further having end flanges disposed at right angles to said horizontal and vertical flanges and lying on the outside of said side walls, said horizontal flange having edge portions spaced from said vertical flange for engagement with the inside of a hanger hook fitted on said L-shaped bar.

11. The combination as claimed in claim 10, wherein said edge portions of said horizontal flange are constituted by openings spaced from the vertical flange and made in said horizontal flange for receiving the free ends of hanger hooks.

12. The combination as claimed in claim 11, wherein said vertical and horizontal flanges are each made of a double layer of fibreboard.

13. The combination as claimed in claim 12, further including a hanger locking flap integrally connected with a layer of the horizontal flange and folded back over the horizontal flange and hanger hooks supported thereon to positively lock said hooks in suspended position on said bar.

References Cited in the file of this patent

UNITED STATES PATENTS

2,827,160	Richer	Mar. 18, 1958
2,893,545	Garfunkel	July 7, 1959

UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,057,460 October 9, 1962

Irving Richer

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.

In the heading to the printed specification, line 4, for "5415 Cavendish Blvd." read -- 7489 Pineview Road --.

Signed and sealed this 2nd day of April 1963.

(SEAL)
Attest:

ESTON G. JOHNSON
Attesting Officer

DAVID L. LADD
Commissioner of Patents