

July 21, 1959

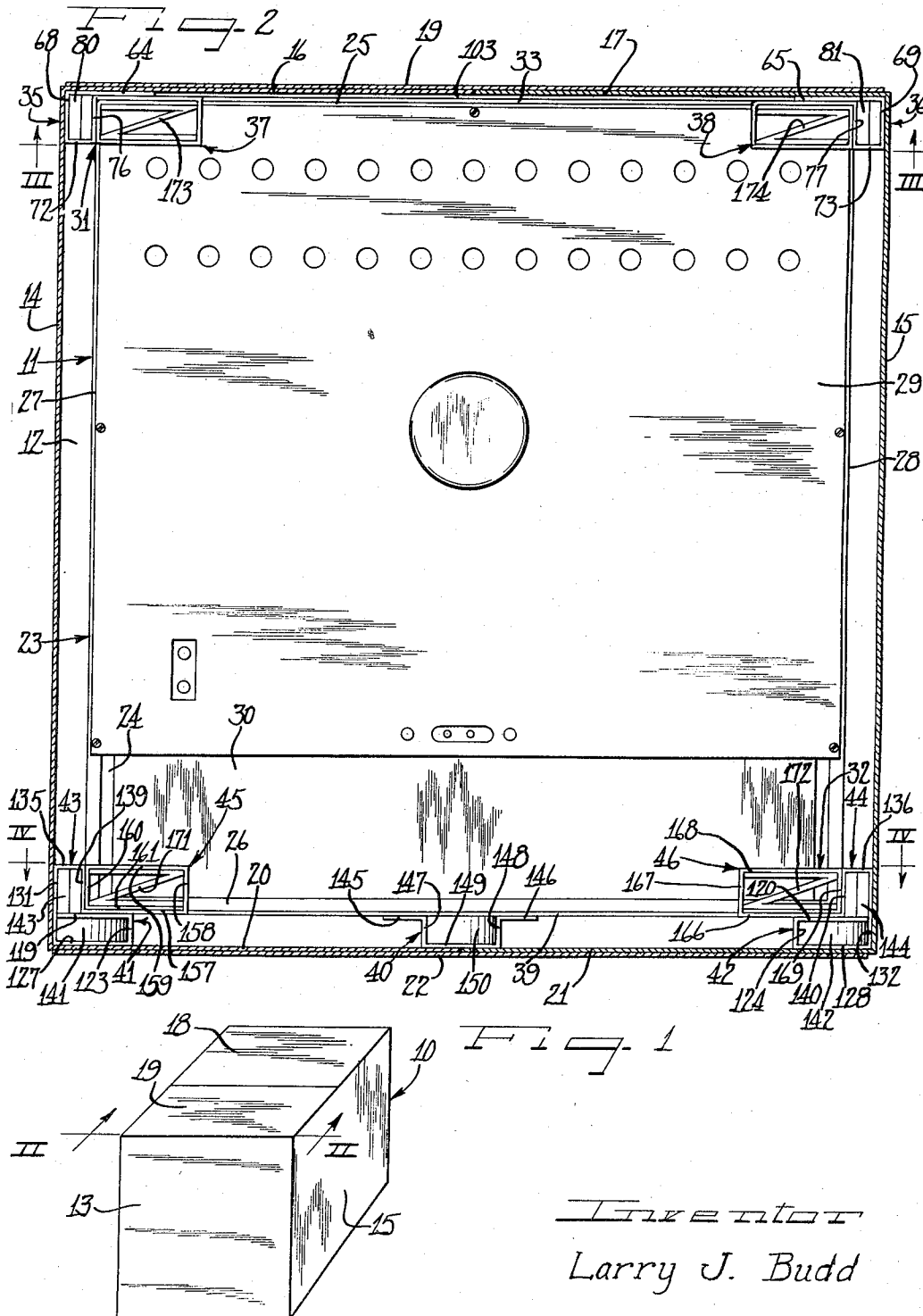
L. J. BUDD

2,895,661

MEANS FOR SUPPORTING APPARATUS FOR SHIPMENT

Filed May 17, 1954

3 Sheets-Sheet 1



July 21, 1959

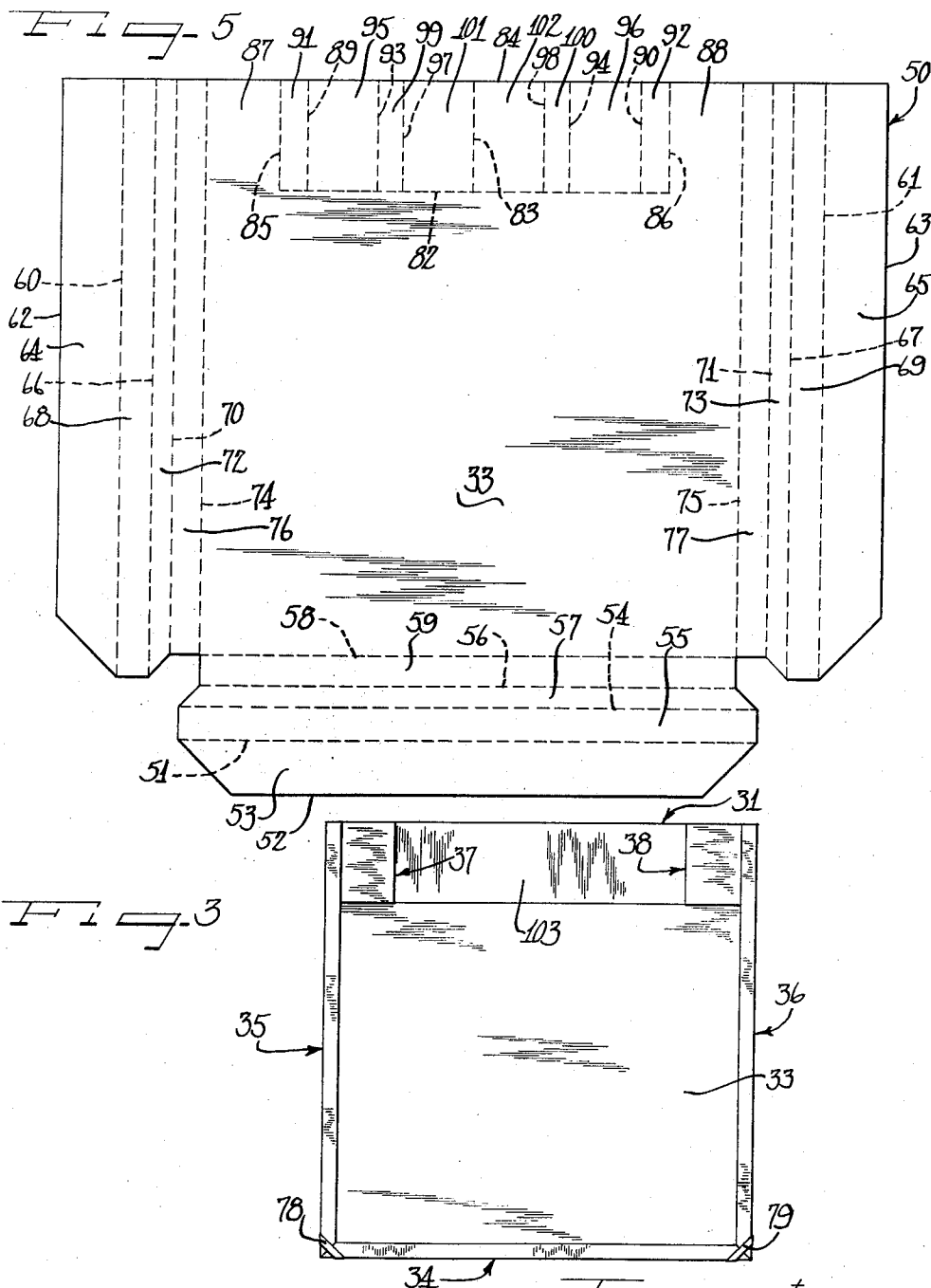
L. J. BUDD

2,895,661

MEANS FOR SUPPORTING APPARATUS FOR SHIPMENT

Filed May 17, 1954

3 Sheets-Sheet 2



Inventor

Larry J. Budd

Shel, Sherman, Merri, Carter, Simpson
Attys

1

2,895,661

MEANS FOR SUPPORTING APPARATUS FOR SHIPMENT

Larry J. Budd, Chicago, Ill., assignor to Pallet Devices, Inc., Des Plaines, Ill., a corporation of Illinois

Application May 17, 1954, Serial No. 430,381

3 Claims. (Cl. 229—14)

This invention relates to methods and means for supporting apparatus for shipment and more particularly to the support of apparatus with minimum expense and with maximum safety and efficiency.

In an exemplary application of this invention, a television receiver, including a cabinet and receiver apparatus therewithin, is supported within a container for shipment with a palletized structure underlying the cabinet to support the cabinet bottom wall in spaced relation to the container bottom. The palletized structure may also carry means upstanding therefrom for engaging lower portions of the front wall, rear wall and side walls of the cabinet to hold such walls in spaced relation to the inner surfaces of the vertical walls of the container.

A further support structure may be disposed over the cabinet top and may carry means depending therefrom for engaging upper portions of the front wall, rear wall and side walls of the cabinet to support the same in spaced relation to the vertical walls of the container and also to protect the edges of the cabinet at the inner sections of the top wall with the front wall, rear wall and side walls.

An important feature of the invention relates to the use of sheet material folded into generally tubular form in the cushioning support of the surface portion of the cabinet from an internal surface portion of the container. In accordance with this feature, the support structure for the cabinet bottom, for example, may be formed of a relatively rigid form-sustaining sheet material and preferably of an inexpensive, expendable material such as paperboard or fiberboard, and may comprise a base section arranged to engage the underside of the cabinet bottom, a first section projecting upwardly from one edge of the base section for engaging a lower side portion of the cabinet contiguous to the bottom, a second projecting outwardly from the upper edge of the first section in parallel relation to the base section, a third section projecting downwardly from the second section in parallel aligned relation to the aforesaid first section for abutting an inside wall portion of the container, and a fourth section projecting in parallel relation to the aforesaid second section for supporting the third section from the base section. Preferably, such fourth section may have a portion adhesively secured against the under surface of the base section. This arrangement is very simple and readily provided but it has been found that it provides an extremely reliable and efficient cushioning support of the lower portion of the cabinet side wall from the side wall of the container.

This tubular support structure is preferably provided along both side walls and along the front wall of the cabinet.

The support structure on the cabinet top may also be of sheet material having edge portions folded into tubular form in a similar manner to support upper portions of the front and side walls of the cabinet from opposed inner surface portions of the container.

Another feature of the invention is in the combination

2

of a base section engaging one end of an article, such as the section engaging the underside of the television cabinet bottom wall or the section engaging the upper side of the cabinet top wall, with a tubular supporting structure having one end engaging the side of the article, that is, with the axis of the tubular supporting structure normal to such side of the article, for supporting such side in spaced relation to a supporting surface such as an internal surface portion of the container.

The tubular supporting structure, of course, is extremely strong with respect to compressive axially directed forces. In fact, this tubular supporting structure is so rigid that it is preferably provided in the lower and upper support structures only at the rear side of the cabinet where a highly resilient cushioning support is not required.

According to a specific feature of the invention, the base section engaging one end of the article together with the tubular supporting structure having one end engaging the side of the article is formed from a single member of sheet material. Such member may comprise a first section for engaging one end of the article with a second section in the same plane as the first section projecting outwardly from one edge of the first section and having an edge transverse to such one edge with a third section projecting transversely from such edge of the second section and having an edge in alignment with such one edge of the first section for engaging a side portion of the article contiguous to such one end thereof. Such third section may most preferably comprise a portion of tubular supporting structure and, for this purpose, a fourth section may project transversely from such third section with a fifth section projecting transversely from the fourth section toward the second section and with a sixth section projecting transversely from the fifth section toward the third section and preferably adhesively secured to the second section. The edges of the third, fourth, fifth and sixth sections may, of course, be in the same plane as the one edge of the first section. It may be noted that with this specific structure, the sixth section adhesively secured to the second section provides additional rigidity thereof.

In accordance with a further specific feature of the invention, a pair of tubular supporting structures having ends engaging one side of an article may be formed integrally with a section engaging one end of the article from a single member of sheet material. In particular, a pair of sections may be disposed in the same plane as and projected outwardly from one edge of a base section and may have spaced parallel edges transverse to such one edge with tubular support means on such pair of sections extending from said parallel edges. Preferably, the total length of the sections forming the tubular support means may have a total length not greater than and preferably equal to the spacing between such parallel edges of the pair of sections.

Another feature of the invention is in the combination of a base section engaging one end of an article with tubular means secured to the base section and having an end engaging one side portion of the article and with means, preferably tubular, extending parallel to the aforesaid tubular means for engaging a side portion of the article transverse to the aforesaid one side portion. The last-mentioned means and the tubular means may have portions secured together so as to offer mutual support for each other.

Still another feature of the invention is in the combination of a base section having an article-engaging surface, such as the section of the lower support structure having an upper surface engaging the underside of the bottom wall of the cabinet, with generally tubular means pro-

jecting from such surface at opposite ends thereof for engaging the sides of the article, and with generally tubular means on the opposite surface of the base section (for example, the underside of the section underlying the cabinet bottom) for supporting the base section in spaced relation to a support surface.

According to a further specific feature of the invention, the tubular means projecting from the base section for engaging one side of the article and the tubular means projecting from the base section for supporting the section in spaced relation to a support surface may be combined in a novel manner and formed together with the base section from a single member of sheet material.

According to still another specific feature of the invention, a base section defining an article-engaging surface, such as the section engaging the underside of the cabinet bottom, may carry means defining generally tubular support means, such as the means supporting the base section from the container bottom, which tubular support means may have internal spaced opposed wall surfaces parallel to the article engaging surface, and a tubular member is disposed within such tubular support means and has opposite ends engaged with such spaced opposed wall surfaces. It will be appreciated that such a tubular member is extremely strong with respect to axially directed compressive forces and will greatly rigidify the tubular support means in the desired manner. Yet another important feature of the present invention is in the support of an article within a container utilizing a combination of the above-described features to provide a light-weight, compact, simple and inexpensively manufacturable structure which supports the article with maximum safety and efficiency.

An object of this invention, accordingly, is to provide improved article-support structure particularly adapted for supporting an article within a container.

Another object of this invention is to provide improved methods of supporting an article within a container.

This invention contemplates other and more specific objects, features and advantages which will become more fully apparent from the following detailed description taken in conjunction with the accompanying drawings which illustrate preferred embodiments and in which:

Figure 1 is a perspective view of a container having a television receiver packed therewithin for shipment, in accordance with the principles of this invention;

Figure 2 is a sectional view taken substantially along line II—II of Figure 1 just inside one end wall of the container and showing the television receiver and support structure therefor in rear elevation;

Figure 3 is a sectional view taken substantially along line III—III of Figure 2 and illustrating a bottom plan view of support structure on top of the television receiver;

Figure 4 is a sectional view taken substantially along line IV—IV of Figure 2 and illustrating a top plan view of support structure for the bottom of the television receiver;

Figure 5 is a view illustrating a blank from which the support structure for the top of the television receiver may be formed; and

Figure 6 is a view illustrating a blank from which the support structure for the bottom of the television receiver may be formed.

Reference numeral 10 generally designates a shipping container which may house a television receiver 11. The container 10 may comprise a front wall 12, a rear wall 13, side walls 14 and 15, a top defined by a first pair of flaps 16 and 17 extending inwardly from the top edges of the side walls 14 and 15, respectively, and a second pair of flaps 18 and 19 extending inwardly over the flaps 16 and 17 from the top edges of the front wall 12 and the rear wall 13, respectively, and a bottom defined by flaps

20 and 21 extending inwardly over the lower edges of the side walls 14 and 15, respectively, and flaps 22 extending inwardly from the lower edges of the front and rear walls 12 and 13 under the flaps 20 and 21.

The television receiver 11 may comprise a cabinet generally designated by reference numeral 23 which may comprise a front wall 24, a top wall 25, a bottom wall 26, side walls 27 and 28 and a removable rear wall 29. Receiver apparatus is installed within the cabinet 23 which may comprise a chassis 30 disposed on the upper surface of the cabinet bottom wall 26.

To support the receiver 11 within the container 10, top and bottom support structures generally designated by reference numerals 31 and 32 are provided.

The top structure 31 may comprise a section 33 for engaging the upper side of the cabinet top wall 25, a generally tubular support means 34 for engaging between an upper portion of the cabinet front wall 24 and an opposed inner surface portion of the container front wall 12, generally tubular support means 35 and 36 for engaging upper end portions of the cabinet side walls 27 and 28, respectively, and supporting the same in spaced relation to opposed surface portions of the container side walls 14 and 15, and a pair of generally tubular support means 37 and 38 for engaging upper end portions of the rearward cabinet wall 29 and support the same in spaced relation to opposed inner surface portions of the container rear wall 13.

The bottom support structure 32 may comprise a base section 39 for underlying the cabinet bottom wall 26, central generally tubular support means 40 for supporting a central portion of the base section 39 from a central portion of the container bottom, generally tubular support means 41 and 42 along the sides of the base section 39 for supporting such sides from the container bottom adjacent the sides 14 and 15 thereof, generally tubular support means 43 and 44 for engaging the lower end portions of the sides 27 and 28, respectively, of the cabinet 23, generally tubular support means 45 and 46 for engaging lower rearward portions of the cabinet 23 and supporting the same in spaced relation to opposed inner surface portions of the container back 13, and generally tubular support means 47 for engaging the lower end portion of the cabinet front wall 24 and supporting the same in spaced relation to an opposed inner surface portion of the container front 12. If desired, the base section 39 may be provided with door-like structures generally designated by reference numerals 48 and 49 to permit access to adjustment means or the like on the underside of the television receiver 11 with the receiver resting on the bottom support structure 32.

It is believed that the manner of construction of the top and bottom support structures 31 and 32 will be best understood from a step-by-step description of the construction thereof. In general, each of the support structures 31 and 32 may be formed from a single blank of a relatively rigid form-sustaining sheet material and preferably of an inexpensive expendable material such as paperboard, fiberboard or the like. The support structures are formed by making bends at score lines which may be scored by marking the blank or preferably by actual indentation of the blank, especially when the blank is of paperboard or a like material, but it will be appreciated that marking or indentation is not necessarily required and the terms "scoring" and "score line" are therefore used in a figurative sense to indicate the position of the bends.

In Figure 5, reference numeral 50 designates a blank from which the top structure 31 may be formed. To form the tubular support means 34 which, as described above, engages between an upper portion of the cabinet front wall 24 and a facing inner surface portion of the container front wall 12, a score line 51 may be located parallel to and at a first predetermined distance inwardly from one edge 52 of the blank 50 to define a section

53, a score line 54 may be located parallel and spaced a second predetermined distance inwardly from the score line 51 to define a section 55, a score line 56 may be located parallel to and spaced inwardly from the score line 54 a distance substantially less than the aforesaid first predetermined distance to define a section 57 and a score line 58 may be located parallel to and spaced inwardly from the score line 56 by a distance slightly less than the aforesaid second predetermined distance (by about the thickness of the sheet material) to define a section 59.

The blank 50 may be bent at the score lines 51, 54, 56 and 58 so that the section 59 extends downwardly at right angles to the base section 25 with the section 57 projecting outwardly from the lower end of the section 59 in generally parallel relation to the section 25, with the section 55 extending upwardly from the outer edge of the section 57 (at the score line 54) in parallel aligned relation to the section 59, and with the section 53 extending inwardly from the upper edge of the section 55 over a portion of the base section 25. Most preferably, this portion of the section 53 may be adhesively secured to such portion of the section 25.

To form the tubular support means 35 and 36 which, as described above, engage between end portions of the cabinet sides 27 and 28, respectively, and inner surface portions of the container sides 14 and 15, respectively, score lines 60 and 61 may be located parallel to and at first predetermined distances inwardly from opposite edges 62 and 63 of the blank 50 to define sections 64 and 65, score lines 66 and 67 may be located parallel to and at second predetermined distances inwardly from the score lines 60 and 61 to define sections 68 and 69, score lines 70 and 71 may be located parallel to and at distances substantially less than the aforesaid first predetermined distances from the score lines 66 and 67 to define sections 72 and 73, and score lines 74 and 75 may be located parallel to and at distances slightly less than the aforesaid second predetermined distances (by about the thickness of the sheet material) from the score lines 70 and 71 to define sections 76 and 77.

The blank 50 may be bent at the score lines 60, 61, 66, 67, 70, 71, 74 and 75 so that the sections 76 and 77 project downwardly at right angles from the opposite edges of the base section 33 with the sections 72 and 73 projecting outwardly from the lower edges of the sections 76 and 77 in parallel relation to the base section 25, with the sections 68 and 69 projecting upwardly from the outer edges of the sections 72 and 73 in parallel aligned relation to the sections 76 and 77, and with the sections 64 and 65 extending inwardly from the upper edges of the sections 68 and 69 over edge portions of the base section 25. Most preferably, the sections 64 and 65 may be adhesively secured to such edge portions of the base sections 25.

If desired, and preferably, mitered joints may be provided between the support means 34 and the support means 35 and 36 by cutting the blank 50 to an appropriate shape as illustrated in Figure 5, the junctions between the support means 34 and support means 35 and 36 being reinforced by tapes 78 and 79 as illustrated in Figure 3.

It has been found that the tubular support means 34, 35 and 36 are very easy to form in the manner as above described, require a minimum amount of material, and yet support the cabinet 23 with maximum safety and efficiency. The reason for the improved safety and efficiency of support may be best understood by an analysis of the forces applied to the support means 35, for example, as viewed in Figure 2. With forces applied to the section 76 through a force tending to move the cabinet 23 toward the side wall 14, such forces will be split between the section 72 and the portion of the section 64 in aligned relation with the section 72. These forces will be applied to the ends of the section 68 and may be evenly distributed

over the inter-engaging surface portions of the section 68 and container side wall 14. This even splitting of forces is, of course, desirable to achieve maximum strength with a minimum thickness of the material.

With the force applied against the corner defined by the sections 64 and 68, the vertical component of such force will tend to tilt the structure about an axis approximately at the upper end of the section 76 to apply such component through the section 68 to the section 72. The horizontal component of such force will be applied principally through the section 64. Accordingly, such a force tends to apply equal forces through the sections 64 and 72. It may further be noted that with the portion of the section 64 overlying an edge portion of the base section 33, additional protection is provided at the corner between the top wall 25 and side wall 27.

It is not essential, but if desired, the tubular means 35 and 36 may be packed with means 80 and 81 for additional rigidity.

To form the tubular support means 37 and 38 which engage between upper rearward portions of the cabinet 23 and the container rear end wall 13, the blank 50 may be cut along a line 82 transverse to the score lines 74 and 75 defining the opposite edges of the base section 33 with the terminal ends of the line 82 being spaced inwardly from the score lines 74 and 75. A cut 83 is made between a center point of the cut 82 and one edge 84 of the blank 50.

A pair of score lines 85 and 86 may extend between the terminal ends of the cut 82 and the edge 84 and the portion of the blank 50 between the score lines 85 and 86 and score lines 74 and 75 may be described as sections in the same plane as and extending outwardly from the base section 33, these sections being designated by reference numerals 87 and 88, respectively. A pair of score lines 89 and 90 may be located parallel to and spaced inwardly from the score lines 85 and 86 to define a pair of sections 91 and 92, a pair of score lines 93 and 94 may be located parallel to and spaced inwardly from the score lines 89 and 90 to define sections 95 and 96, a pair of score lines 97 and 98 may be located parallel to and spaced inwardly from the score lines 93 and 94 to define sections 99 and 100, the score lines 97 and 98 also cooperating with the cut 83 to define sections 101 and 102.

To form the tubular support means 37 and 38, the blank 50 may be bent at the score lines 85, 86, 89, 90, 93, 94, 97 and 98 so that the sections 91 and 92 project downwardly from the inner edges of the sections 87 and 88 (at the score lines 85 and 86) with the sections 95 and 96 projecting outwardly from the lower edges of the sections 91 and 92 in parallel aligned relation below the sections 87 and 88, with the sections 99 and 100 projecting upwardly from the outer edges of the sections 95 and 96 toward the sections 87 and 88, and with the sections 101 and 102 projecting from the upper edges of the sections 99 and 100 toward the sections 91 and 92, the sections 101 and 102 being preferably adhesively secured against the sections 87 and 88 to reinforce the same.

It will be appreciated that the tubular support means 37 and 38 so formed will offer very secure support for the upper ends of the rear portion of the cabinet 23.

According to a specific feature of the invention, the supports 35 and 36 and the supports 37 and 38 may offer mutual support for each other, by gluing or otherwise securing the outer surfaces of the sections 99 and 100 to the facing surface portions of the sections 76 and 77, respectively.

If desired, a member 103 of sheet material may have end portions glued or otherwise secured to the sections 87 and 88 and may extend over the space previously occupied by the sections 91, 92, 95, 96, 99, 100, 101 and 102.

The bottom support structure 32 may be formed from a blank 104 as illustrated in Figure 6. To form the section 47, which engages between the lower end portion of the cabinet front 24 and the opposed inner surface portion of the container front wall 12, a pair of spaced

rectangular sections 105 and 106 are provided at the forward end of the blank 104, the rearward edges of the sections 105 and 106 being located at a score line 107. The reason for using two spaced sections in place of a single section is to allow for the central support structure 40 on the underside of the support structure 32. A score line 108 may be located parallel to and at a first predetermined distance inwardly from the score line 107 to define a section 109, a score line 110 may be located parallel to and spaced a distance inwardly from the score line 108 less than the distance between the score line 107 and the outer edges of the sections 105 and 106, to define a section 111, and a score line 112 may be located parallel to and spaced inwardly a distance slightly less than said predetermined distance to define a section 113.

The section 47 may be formed by bending the blank along the score lines 107, 108, 110 and 112 so that the section 113 projects upwardly at right angles to the base section 39 with the section 111 projecting outwardly from the upper edge of the section 113 in parallel relation to the base section 39, with the section 109 projecting downwardly from the outer edge of the section 111 in spaced aligned parallel relation to the section 113, and with the sections 105 and 106 extending inwardly below edge portions of the base section 39, the sections 105 and 106 being preferably adhesively secured to such edge portions of the base section 39.

According to a specific feature of the present invention, the tubular support means 41 and 43 and the tubular support means 42 and 44 may be formed as unitary structure. Score lines 115 and 116 may be located parallel to and spaced inwardly from opposite edges 117 and 118 of the blank 104 to define sections 119 and 120, score lines 121 and 122 may be located parallel to and spaced inwardly from score lines 115 and 116 to define sections 123 and 124, score lines 125 and 126 may be located parallel to and spaced inwardly from score lines 121 and 122 to define sections 127 and 128, score lines 129 and 130 may be located parallel to and spaced inwardly from score lines 125 and 126 to define sections 131 and 132, score lines 133 and 134 may be located parallel to and spaced inwardly from score lines 129 and 130 to define sections 135 and 136, and score lines 137 and 138 may be located parallel to and spaced inwardly from score lines 133 and 134 to define sections 139 and 140.

The tubular means 41, 42, 43 and 44 may be formed by bending the blank 104 along such score lines so that the sections 139 and 140 project upwardly at right angles from opposite edges of the base section 39 with the sections 135 and 136 projecting outwardly from the upper edges of the sections 139 and 140 in parallel relation to the base section 39, with the sections 131 and 132 projecting downwardly from the outer edges of the sections 135 and 136, with the sections 127 and 128 projecting inwardly from the lower edges of the sections 131 and 132, with the sections 123 and 124 projecting upwardly from the inner edges of the sections 127 and 128 to the lower surface of the base section 39 and with the sections 119 and 120 projecting outwardly to position the terminal edges thereof (edges 117 and 118) against intermediate portions of the sections 131 and 132 in supporting relation thereto.

According to a specific feature of the invention, the tubular support means 41 and 42 may be rigidified by inserting tubes 141 and 142 therewithin between the lower surfaces of the sections 119 and 120 and the upper surfaces of the sections 127 and 128. The tubes 141 and 142 are, of course, very strong with respect to axially directed compressive forces and, in addition, may be readily inserted within the tubular means 41 and 42 to rigidify the same. Preferably, three of the tubes 141 and three of the tubes 142 may be used.

The tubular support means 43 and 44 may, if desired,

be rigidified by packing means 143 and 144 inserted therewithin.

To form the central support means 40, a member of sheet material may be bent along parallel score lines to form outer rectangular sections 145 and 146 which may be glued or otherwise secured against spaced surface portions of the underside of the base section 39, sections 147 and 148 projecting downwardly from the inner edges of the sections 145 and 146 and a section 149 extending between the lower edges of the sections 147 and 148. Rigidifying tubes 150, similar to the tubes 141, 142, may be disposed between the upper surface of the section 149 and the facing lower surface portion of the base section 39.

The tubular support means 45 and 46 may be formed in a manner very similar to the formation of the support means 37 and 38 of the top structure 31, as above described, by making cuts 151 and 152, by score lines 153, 154, 155 and 156 to provide sections 157, 158, 159, 160 and 161, and by score lines 162, 163, 164 and 165 to define sections 166, 167, 168, 169 and 170.

The blank 104 may be bent at the score lines 153—156 and 162—165 so that the sections 158 and 167 project upwardly from the inner edges of the sections 157 and 166 (at score lines 153 and 162) with the sections 159 and 168 projecting outwardly from the upper edges of the sections 158 and 167, with the sections 160 and 169 projecting downwardly from the outer edges of the sections 159 and 168 toward the sections 157 and 166 and with the sections 161 and 170 projecting inwardly from the lower edges of the sections 160 and 169 toward the sections 158 and 167. The sections 161 and 170 may be secured against the sections 157 and 166, preferably by glue or the like.

If desired, generally Z-shaped elements 171 and 172 may be disposed within the tubular means 45 and 46 and it might also be noted that similarly generally Z-shaped elements 173 and 174 may be inserted within the tubular support means 37 and 38.

The sections 160 and 169 may preferably be adhesively secured to the sections 139 and 140 of the support means 43 and 44 so that the support means 43 and 45 as well as the support means 44 and 46 are in mutual supporting relation.

The door-like means 48 permitting access to the underside of the television receiver after it is disposed on the bottom support structure 32 may be formed by making cuts at lines 175, 176, 177, 178 and 179 and by scoring lines at 180, 181 and 182 to define a section 183 hinged at the score line 180, a section 184 hinged at the score line 182 and a section 185 hinged to the section 184 at score line 181. By inserting a finger against the section 183, the section 184 may be grasped to pull the section 184 downwardly to provide access to the bottom side of the television receiver, for adjustment purposes or the like.

As illustrated in Figure 4, a tape 186 may be positioned over the score line 182 to prevent tearing of the section 184 away from the base section 39.

The door-like structure 49 may be formed in a manner exactly like the structure 48.

It will be appreciated from the foregoing that this invention provides an inexpensive, light weight, compact, readily manufacturable support structure for supporting an article within a container with maximum safety and efficiency.

It will be understood that modifications and variations may be effected without departing from the spirit and scope of the novel concepts of the present invention.

I claim as my invention:

1. In a shipping structure, article support means formed of sheet material and comprising a rectangular first support section for engaging one end of the article, a second support section in the same plane as and projecting outwardly from each end of one edge of said first

section, said second support sections having spaced opposed edges transverse to said one edge; each of said second support sections having integral therewith between said opposed edges and along said one edge a third support section projecting transversely from said edge of said second section, a fourth support section projecting transversely from said third section in spaced parallel opposed relation to said second section and a fifth support section projecting transversely from said fourth section to said second section; said third, fourth and fifth support sections having edges in a plane through said one edge of said first section and transverse to said base section for engaging the side of the article.

2. In a shipping structure, article support means formed of sheet material and comprising a rectangular first support section for engaging one end of the article, a second support section in the same plane as and projecting outwardly from each end of one edge of said first section, said second support sections having spaced opposed edges transverse to said one edge; each of said second support sections having integral therewith between said opposed edges and along said one edge a third support section projecting transversely from said edge of said second section, a fourth support section projecting transversely from said third section in spaced parallel opposed relation to said second section, a fifth support section projecting transversely from said fourth section to said second section, and a sixth section projecting transversely from said fifth section toward said third section and adhesively secured to said second section, said third, fourth, fifth and sixth support sections having edges in a plane through said one edge of said first section and transverse to said first section for engaging the side of the article.

3. In a shipping structure, article support means formed of sheet material and comprising: a base section for engaging one end of the article, a first pair of sections projecting transversely from opposite edges of said base section, a second pair of sections projecting outwardly

from said first pair of sections in parallel relation to said base section, a third pair of sections projecting transversely from said second pair of sections with first portions thereof in spaced parallel opposed relation to said first pair of sections and with second portions thereof projecting beyond the plane of said base section, a fourth pair of sections projecting inwardly from said third pair of sections in parallel relation to said base section and having inner end portions in facing relation to portions of said base section, a fifth pair of sections projecting transversely from the inner edges of said fourth pair of sections to said base section and cooperating with said first, second and third pair of sections in supporting said base section in spaced relation to said fourth pair of sections, and a sixth pair of sections projecting from said fifth section outwardly along said base section and having outer terminal edges engaged with said third pair of sections.

References Cited in the file of this patent

UNITED STATES PATENTS

1,696,341	Blanchard	Dec. 25, 1928
1,783,570	Hill	Dec. 2, 1930
2,250,491	Lurain	July 29, 1941
2,355,804	Hutchinson	Aug. 15, 1944
2,393,734	Beardsell	Jan. 29, 1946
2,444,183	Cahners	June 29, 1948
2,445,280	Powell	July 13, 1948
2,448,679	Meinhardt	Sept. 7, 1948
2,581,400	Freel et al.	Jan. 8, 1952
2,636,600	Denton et al.	Apr. 28, 1953
2,663,417	Kincaid	Dec. 22, 1953
2,692,077	Kuhlman	Oct. 19, 1954
2,692,720	Suess et al.	Oct. 26, 1954
2,733,851	Van Ness	Feb. 7, 1956

FOREIGN PATENTS

799,967	France	Apr. 20, 1936
854,029	Germany	Oct. 30, 1952