April 13, 1965 E. L. SNYDER 3,178,227

CARDBOARD CHAIR

Filed June 11, 1962 2 Sheets-Sheet 1

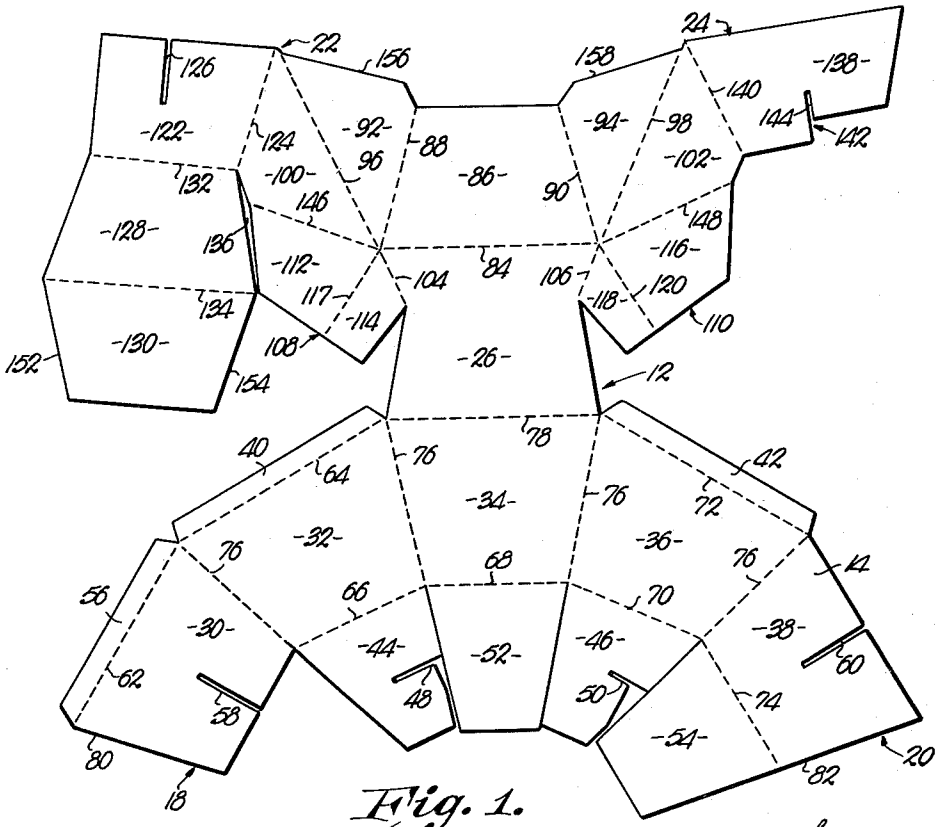


Fig. 1.

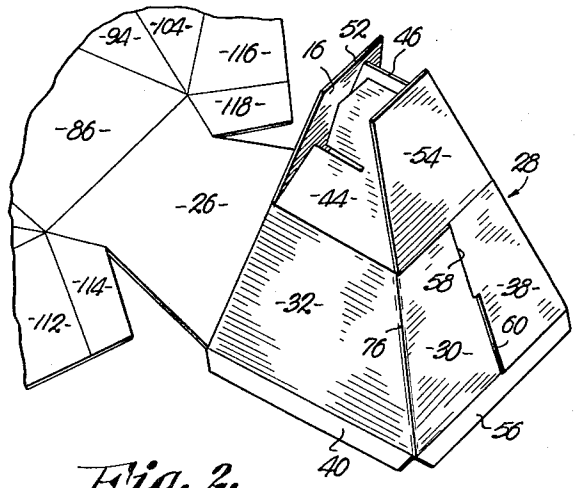


Fig. 2.

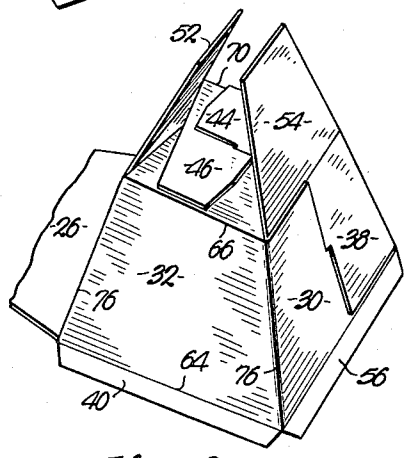


Fig. 3.

INVENTOR.
Ernest L. Snyder

BY
Hovey, Schmidt, Johnson & Hovey
ATTORNEYS

April 13, 1965 E. L. SNYDER 3,178,227

CARDBOARD CHAIR

Filed June 11, 1962 2 Sheets-Sheet 2

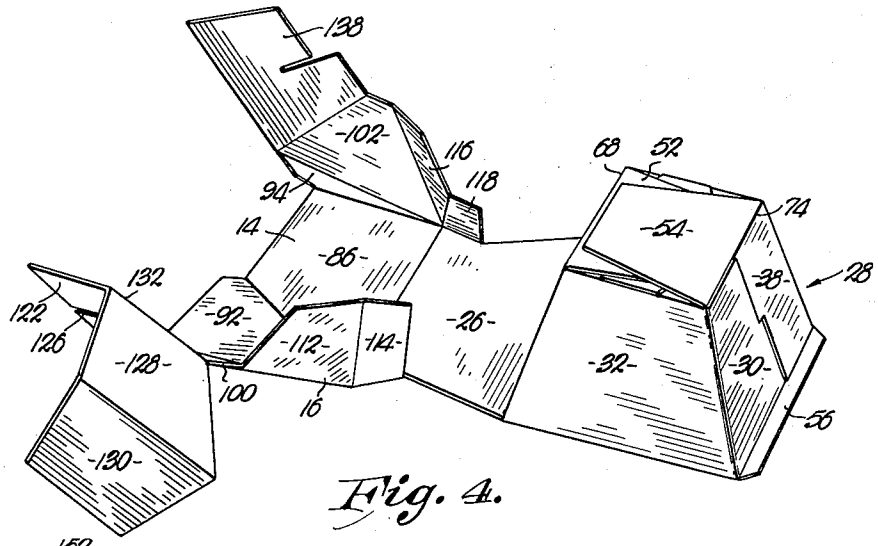


Fig. 4.

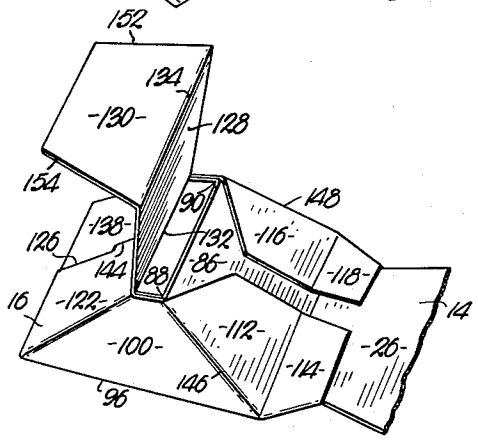


Fig. 5.

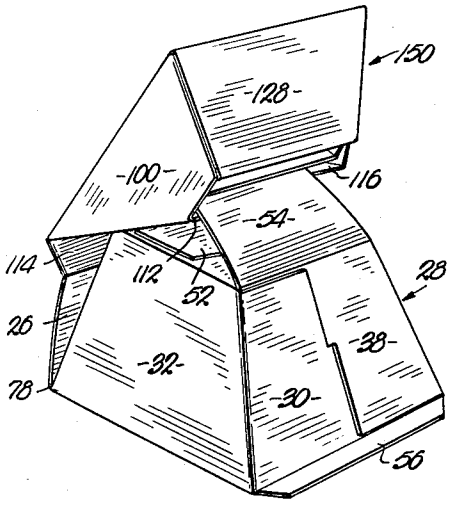


Fig. 6.

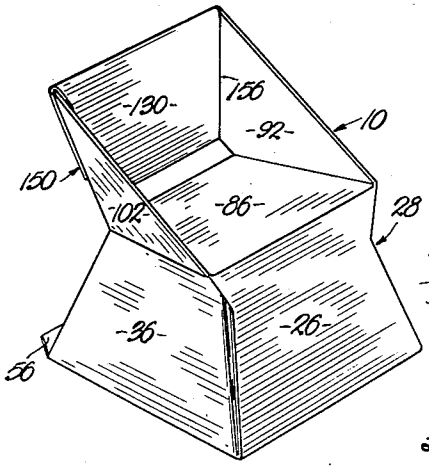


Fig. 7.

INVENTOR.
Ernest L. Snyder

BY

Hovey, Schmidt, Johnson & Hovey
ATTORNEYS.

United States Patent Office 3,178,227 Patented Apr. 13, 1965

3,178,227

CARDBOARD CHAIR

Ernest L. Snyder, 612 W. 40th St., Kansas City, Mo.

Filed June 11, 1962, Ser. No. 201,490
1 Claim. (Cl. 297—440)

This invention relates to a chair fabricated from a single sheet of semirigid material, and more particularly, to a chair which may be fully formed from a blank, the blank being made from a single piece of cardboard or similar material.

It is the primary object of this invention to provide a chair which is formed from a blank, which blank is stamped or cut from a single sheet of cardboard material, the blank in its initial condition being easily transportable and of a size to be conveniently stored, the blank being configured in such a manner that with a very few simple and quickly performed steps, the finished chair may be formed therefrom by folding the portions of the blank in a predetermined manner.

A yet further aim of this invention is to provide a chair having a base portion in the shape of a truncated pyramid, the base portion supporting a seat portion, there being connector means for securing the base portion to the seat portion whereby to complete the chair.

Yet another object of this invention is to provide a blank formed from a single sheet of cardboard material, which blank assumes a substantially X-shaped plan configuration whereby to present four legs, the legs being joined by a common connector, two of the legs being cooperable and joinable whereby to form the base portion of the chair, the remaining two legs of the blank being cooperable and joinable whereby to form the seat portion of the chair.

Other objects of this invention include the particular manner in which the blank is configured and in which the same is scored with lines of fold whereby to present a plurality of members interconnected by fold lines allowing the various separate members to be folded with respect to one another whereby to create the portions of the chair; and other details of construction which will become apparent from the following specification and accompanying drawings, wherein:

FIGURE 1 is a plan view of the blank in a flattened condition;

FIG. 2 is a fragmentary, perspective view showing the chair at one stage of construction, the base portion being partially formed;

FIG. 3 is a fragmentary, perspective view showing primarily the base portion of the chair and illustrating the same in its next step of construction;

FIG. 4 is a perspective view showing the base portion completed and the legs forming the seat portion moved to the initial position thereof;

FIG. 5 is a fragmentary, perspective view showing primarily the seat portion in its next stage of construction;

FIG. 6 is a perspective view showing the manner in which the seat portion is disposed atop the base portion and secured thereto; and

FIG. 7 is a perspective view of the completed cardboard chair.

The completed chair made pursuant to this invention is best shown in FIG. 7 of the drawings and is designated as 10, the blank of material from which the chair 10 is formed being best shown in the plan view thereof in FIG. 1, and said blank being designated as 12.

The blank 12 is formed from a sheet of corrugated cardboard or the like which may be painted or printed in any desired pattern or fashion whereby to create a pleasing over-all appearance for the completed chair 10, it being a particular aim of this invention to provide a chair which can be formed from but a single sheet of material, it being appreciated that the sheet of material from which blank 12 is formed, may be of any desired size, as may blank 12 itself, depending upon the size of chair 10 which is ultimately desired.

Blank 12 has a pair of opposed surfaces 14 and 16 and is substantially X-shaped in plan configuration as clearly seen in FIG. 1, whereby to present a plurality of legs 18, 20, 22 and 24, the legs 18–24 being joined by a common connector 26.

The legs 18 and 20 of blank 12 cooperate to form the base portion 28 of the completed chair 10, and are substantially similar in construction. Thus, each of said legs includes a plurality of substantially trapezoidal-shaped base wall members, said members being designated as 30, 32, 34, 36 and 38 and combining to form the major portion of legs 18 and 20.

Members 32 and 36 are identical in construction and each has adjacent one edge thereof a tab, said tab being designated as 40 in the case of base wall member 32, and as 42 in the case of base wall member 36. The opposed edges of base wall members 32 and 36 each have a flap 44 and 46 joined thereto respectively, said flaps 44 and 46 each having a notch 48 and 50 formed therein adjacent one edge thereof. Base wall member 34 has an extension 52 joined thereto, and base wall member 38 has a similar extension 54 joined thereto.

Base wall member 30 has a tab 56 extending along one edge thereof, there being a slit 58 extending inwardly from the edge of member 30 opposite to that to which tab 56 is secured. A slit 60 is also provided in base wall member 38, said slit extending inwardly from the inner edge of said base member 38.

In FIG. 1 of the drawings, the dashed lines represent in each instance, a line of fold, and it will be seen that there is a line of fold 62 joining tab 56 with base wall member 30; a line of fold 64 joining tab 40 with base wall member 32; a line of fold 66 joining flap 44 with base wall member 32; a line of fold 68 joining extension 52 to base wall member 34; a line of fold 70 joining base wall member 36 to flap 46; a line of fold 72 joining tab 42 to base wall member 36; and a line of fold 74 joining extension 54 to base wall member 38. Likewise, the adjacent edges of base wall members 30–38 are joined together by corresponding lines of fold designated as 76, and the edge of base wall member 34 opposite to that carrying extension 52 is joined to connector 26 by a line of fold 78. The outer edges of base wall members 30 and 38, being designated as 80 and 82 respectively, are free for purposes which will be made clear hereinafter, and extensions 52 and 54 are secured only along fold lines 68 and 74 respectively whereby the same may freely move about their corresponding fold lines; the same being true with flaps 44 and 46 which are secured to the remainder of the blank only along fold lines 66 and 70 respectively.

The other pair of legs 22 and 24 of the blank 12 are utilized to form the seat portion of the chair 10 and are connected to the one pair of legs 18 and 20 by means of connector 26, which connector 26 is secured by a line of fold 84 to a trapezoidal seat member 86, the seat member 86 being secured by lines of fold 88 and 90 to substantially triangular-shaped side portions 92 and 94 respectively, said side portions 92 and 94 being in turn secured, by fold lines 96 and 98 respectively, to complemental side portions 100 and 102, the side portions 100 and 102 also being substantially triangular in configuration.

Connector 26 is also secured by means of fold lines 104 and 106 to coupling members 108 and 110 respectively, said coupling members each being formed from two segments respectively, the segments of coupling member 108 being designated as 112 and 114 and joined by a line of

fold 117, the segments of coupling member 110 being designated as 116 and 118 and being joined by a line of fold 120.

The leg 22 also includes a locking wing 122 secured to side portion 100 by line of fold 124, said locking wing having a slot 126 extending inwardly from the outer free edge thereof. A pair of back sections 128 and 130 are carried by locking wing 122 by means of fold line 132 which joins wing 122 with back section 128, the back sections 128 and 130 being joined by a fold line 134 and being substantially trapezoidal in configuration. An elongated opening 136 is formed in the blank 12 between the inner edge of back section 128 and the proximal edge of side portion 100 and segment 112.

The leg 24 of blank 12 also includes a locking wing designated as 138, said wing 138 being carried by side portion 102 through fold line 140. Locking wing 138 is notched as at 142, there being a slot 144 extending inwardly into wing 138 from the corner of notch 142.

It should also be noted that the coupling members 108 and 110, in addition to being secured to connector 26 by fold lines 104 and 106, also depend from the corresponding side portions of their respective legs through the provision of a fold line such as 146 which joins segment 112 of member 108 with side portion 100, and a fold line 148 which joins segment 116 of member 110 to side portion 102.

Thus, there is presented a blank 12 which may be easily and economically die-cut from a single sheet of rigid material into the form illustrated in FIG. 1, which blank may then be easily transported and, in this regard, may be reduced to a smaller over-all configuration than that shown in FIG. 1 of the drawings by merely folding that portion of the blank, including legs 22 and 24, along fold line 78 whereby legs 22 and 24 will have the surface 14 thereof overlying the surface 14 of legs 18 and 20,, thus virtually reducing the blank to half its size for purposes of shipping and storage. Further reduction in size of the blank may be accomplished, for packaging purposes or the like, by making additional fold where appropriate to thus decrease the over-all size of the blank. However, when it is desired to form the chair 10, the blank should be initially placed in a flat condition as shown in FIG. 1 of the drawings, and thence by utilizing the various fold lines and components of the blank, the completed chair 10 may be rapidly assembled.

The steps in assembly of blank 12 into completed chair 10 are as follows:

With surface 14 of blank 12 facing upwardly, the outer edges 80 and 82 of base wall members 30 and 38, are grasped and slit 60 brought into engagement with slit 58 whereby the same may engage each other in a manner to cause base wall member 38 to partially overlie base wall member 30, and by the same token, to cause base wall member 30 to partially overlie base wall member 38, this resulting from the fact that it is desirable to have the free edges 80 and 82 of the respective base wall members 30 and 38, disposed inwardly of the truncated pyramid which is formed when the slits 58 and 60 are brought into engagement as above described. Thus, base wall members 30 and 38 are in complemental aligned relationship as illustrated in FIG. 2 of the drawings, and the remaining base wall members 32, 34 and 36 are positioned whereby to form an enclosure, the walls of which are defined by said base wall members.

The tabs 40, 42 and 56 are then folded along lines of fold 64, 72 and 62 respectively whereby to extend outwardly substantially perpendicularly to their corresponding base wall members as shown in FIG. 2.

The initial step in assembly is illustrated in FIG. 2 of the drawings, and it will be seen that when the blank is brought to the condition shown therein, the flaps 44 and 46 extend upwardly from their corresponding base wall members 32 and 36, as do the extensions 52 and 54 of base wall members 34 and 38. The legs 22 and 24

remain in their flattened condition during the above described assembly operation, this being accomplished as a result of the provision of connector 26 and the fact that the same may swing along fold line 78 to retain the legs 22 and 24 flattened while the base portion 28 is assembled.

FIGURE 3 illustrates the next step of assembly, and it will be seen therefrom that notch 48 of flap 44 is brought into engagement with notch 50 of flap 46 whereby the same may be interlocked and folded along their respective fold lines 66 and 70 to move to the substantially horizontal position illustrated in FIG. 3 and, through the locking engagement of notches 48 and 50 to serve as a structurally reinforced top wall for the base portion 28.

After the base portion has been assembled into the condition above described and illustrated in FIG. 3 of the drawings, assembly of the seat portion, broadly designated as 150, is commenced, it being noted that prior to such assembly the extensions 52 and 54 are folded downwardly along lines 68 and 74 respectively, to the substantially horizontal position shown in FIG. 4 whereby the same overlie the interlocked flaps 44 and 46. At this stage, assembly of the base portion may be further finalized by folding tabs 40 and 42 inwardly along lines 64 and 72 respectively toward the interior of the base portion 28 whereby the same are disposed interiorly thereof and perpendicular to their corresponding walls extending outwardly from the base portion 28 as shown in FIG. 4 of the drawings, the tabs 40, 42 and 56 combining to give additional support to base 28.

Assembly of the seat portion 150 is then commenced by folding leg 22 about line of fold 96 whereby surface 14 of side portion 100 is brought into overlying aligned engagement to surface 14 of side portion 92. The same is then done with leg 24 as by folding the same along line of fold 98 whereby to bring surface 14 of side portion 102 into overlying aligned engagement with surface 14 of side portion 94. As a matter of convenience, in accomplishing the above steps, it may be necessary to fold leg 22 along line 132 whereby the back sections 128 and 130 do not interfere with the folding of leg 22.

It will be noted that when the above assembly is accomplished, the surface 16 of legs 22 and 24 is facing upwardly and, in addition to surface 14 of side portion 100 overlying surface 14 of side portion 92, and surface 14 of side portion 102 overlying surface 14 of side portion 94, the surface 14 of coupling members 108 and 110 partially overlies the surface 14 of connector 26 and seat member 86. Leg 22 is then folded downwardly along aligned lines of fold 88 and 146 whereby the overlying side portions 92 and 100 are disposed in substantially perpendicular relationship to seat member 86, and the same is accomplished with leg 24 by folding the same downwardly along aligned lines of fold 90 and 148 whereby the overlying side portions 94 and 102 may be disposed substantially perpendicular to seat member 86.

Locking wings 122 and 138 are then folded into complemental relationship, the same being brought into locked engagement through the utilization of slot 144 and slot 126 which are interlocked to retain wings 122 and 138 in overlying engagement, it being desired that the free edges thereof be to the inside whereby to leave the surface 16 thereof exposed.

When wings 122 and 138 are so engaged, the back sections 128 and 130 are folded along fold line 132 as illustrated in FIG. 5 of the drawings, whereby the surface 16 of back section 128 is brought into overlying engagement with the exposed surface 16 of wings 122 and 138, the remaining back section 130 then being folded along line 134 and about the edge presented by wings 122 and 138 whereby the surface 16 of back section 130 may be brought into overlying engagement with the surface 14 of wings 122 and 138. When this is accomplished, the free side edges 152 and 154 of back section 130 are snapped behind the free edges 156 and 158 of side portions 92 and 94 respectively, whereby to retain the back section 130 in its

desired position as a part of the back of the seat portion 150.

Thus, it will be seen that the base portion 28 has been individually assembled and the seat portion 150 has been individually assembled, such being accomplished substantially separately as a result of the provision of connector 26. To then complete the assembly of the chair 10, the connector 26 which carries with it seat portion 150, is folded along line 78 whereby to bring the surface 14 of connector 26 into overlying engagement with the surface 14 of base wall member 34 and thus dispose the seat portion 150 atop the base portion 28. When this is done, the segments 114 and 118 are folded along lines 117 and 120 respectively, which fold lines now correspond to the fold line 84 between the connector 26 and the seat member 86 whereby to cause the segments 112 and 116 to define a channel or slot, which channel receives the free end of extension 54 within the confines thereof whereby to secure the seat portion 150 to the base portion 28. Seat portion 150 is retained in place by virtue of a tight frictional fit between the side edges of extension 54 and the walls of the channel created by seat member 86 and segments 112 and 116.

From the foregoing, it will be appreciated that the chair 10 may be easily and quickly assembled and then utilized by either adults or children, depending primarily upon the size of the chair, for a given length of time and after such use is completed, the chair may be disassembled through reversal of the steps above described and easily and quickly transported to a point of further use or storage.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

A blank of cardboard material for forming a chair, said blank being substantially X-shaped in plan configuration whereby to present four legs; and a common connector joining all of said legs, one pair of said legs comprising five base wall members of trapezoidal configuration, said wall members being joined by lines of fold, the outer edges of each end member being free, certain of said wall members having extensions joined thereto by a line of fold, other of said wall members having flaps joined thereto by a line of fold, the components of said one pair of legs being joinable whereby to form a base portion for said chair, the other pair of legs being joinable to form a seat portion for said chair, said other pair of legs including a seat member, side portions, back sections, coupling members, and locking wings cooperable to form said seat portion.

References Cited in the file of this patent

UNITED STATES PATENTS

2,100,979	Rowe	Nov. 30, 1937
2,170,953	Spots	Aug. 29, 1939
2,806,514	Smith	Sept. 17, 1957
2,922,562	Pellaton	Jan. 26, 1960
2,960,149	Throssel	Nov. 15, 1960