March 21, 1967 C. A. CONNELL 3,310,341

PORTABLE STADIUM SEAT

Filed Aug. 10, 1965

Fig. 1

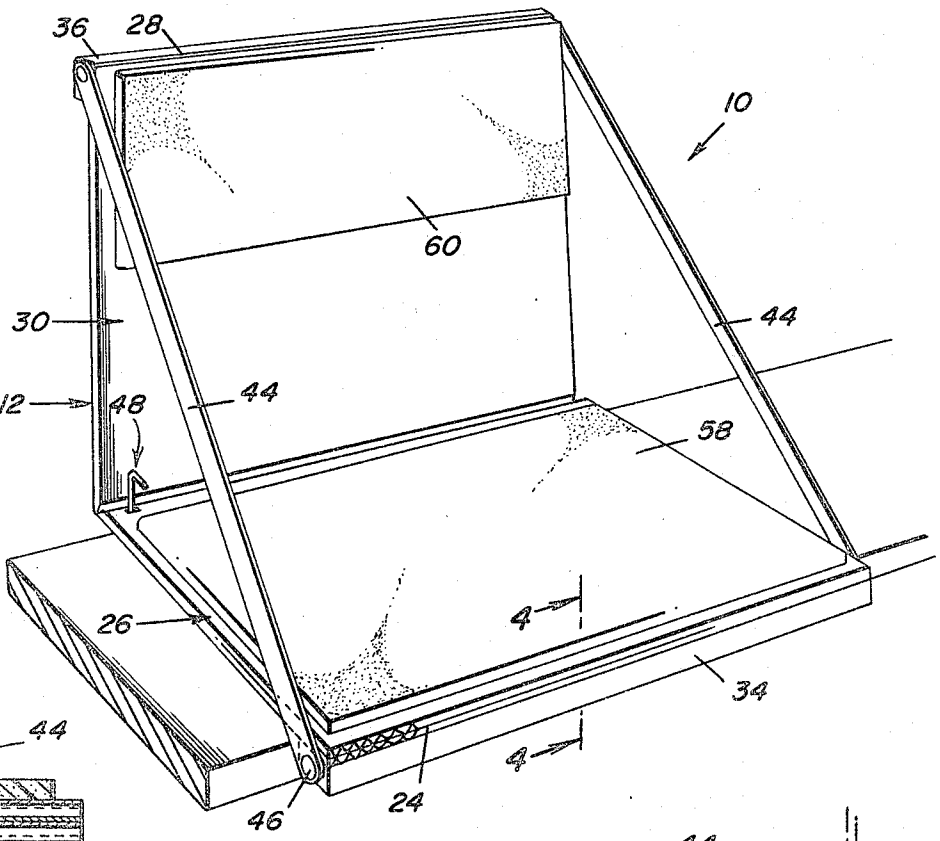


Fig. 4

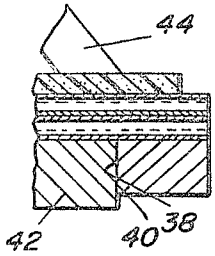


Fig. 3

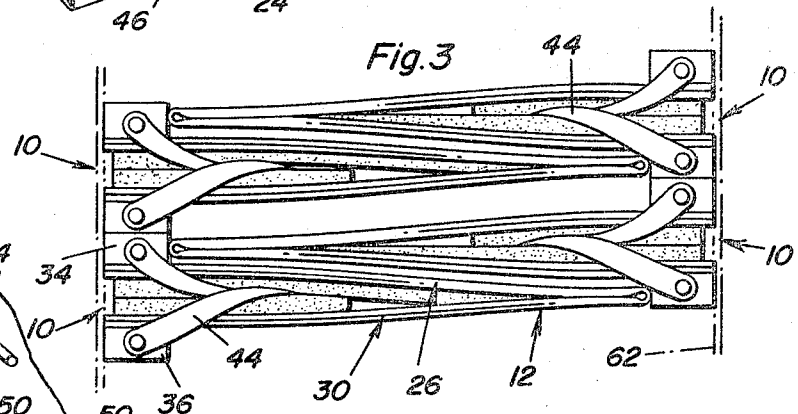
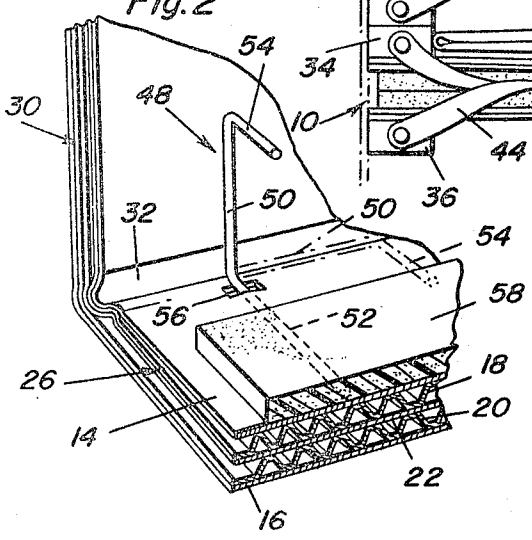


Fig. 2



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PORTABLE STADIUM SEAT

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The present invention is generally concerned with portable seats, and more specifically relates to a folding temporary seat and backrest particuluarly adaptable for use on bench-type seats such as normally provided in football stadiums.

It is a primary object of the instant invention to provide a portable folding seat which, while possessing a degree of rigidity in its operative position sufficient so as to adequately support and brace a user, can be so economically manufactured and sold as to actually constitute a disposable or throw-away item.

In conjunction with the above object, it is also a significant object of the instant invention to provide a folding seat which, because of its structural stability, can in fact be repeatedly used.

Furthermore, a significant object of the instant invention resides in the utilization of a single flat member in forming not only the back and seat panels, but also the full width flexible joint therebetween.

Also , it is a significant object of the instant invention to provide a folding seat wherein rigidifying bars are provided so as to not only receive a major portion of the weight introduced thereto, but also so as to constitute a means for positively locating the seat relative to the supporting bench.

In addition, a significant object of the instant invention resides in the incorporation of unique retaining means for fixing the panels in their operative position relative to each other.

Also, an important object of the instant invention resides in the provision of a portable seat which can be folded into a compact substantially flat unit capable of being packed for shipping with similar units in a manner whereby substantially no waste space is present, and in a manner whereby the seats themselves, in the package, substantially eliminate any possibility of damage being sustained thereby.

Furthermore, it is a significant object of the instant invention to provide a portable stadium seat wherein a major portion of the construction thereof consists of multi-layer cardboard.

Basically, in achieving the above objects, it is contemplated that the portable seat of the instant invention consists primarily of an elongated multi-layered cardboard member transversely creased or folded centrally thereacross so as to form two equal sized panels, this creasing of the member resulting in a flattening of the intermediate layer or layers of corrugated cardboard. In addition, the free ends of each of the panels formed by the hinge defining crease are to be rigidified by elongated rectangular bars intimately contacting and secured to the panels and along the full length of the free ends, with at least that bar secured to the seat end depending therefrom a sufficient distance so as to provide a means for positioning the seat through engagement with a bench front edge. Further, cushioning pads are provided on both the seat and back panels with these panels being fixed for limited movement relative to each other by a pair of straps engaged between the corresponding ends of the panel bars. Finally, a pivoted clip-like retainer is mounted in the seat panel for rotation from a first position flat there-against to a second position projecting upwardly therefrom so as to form an abutment preventing the folding down of the back panel.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a perspective view of the portable stadium seat of the instant invention positioned upon a conventional backless bench;

FIGURE 2 is an enlarged detailed view of the hinged integral joint between the panels, this view also illustrating the retaining clip or member and the cross-sectional construction of the panels;

FIGURE 3 is a side elevational view of a plurality of the seat units stacked for reception within a storage or shipping container; and

FIGURE 4 is a partial cross-sectional view taken substantially on a plane passing along line 4—4 in FIGURE 1.

Referring now more specifically to the drawings, reference numeral **10** is used to generally designate the portable folding seat comprising the instant invention. This seat consists basically of an elongated one-piece cardboard member **12** including inner and outer sheet-like layers **14** and **16** bonded to and sandwiching therebetween two corrugated layers **18** and **20**, these corrugated layers in turn being bonded to and separated by a third intermediate sheet-like layer **22**. As will be appreciated from the drawings, and in particular FIGURE 2, the corrugations in the corrugated layers **18** and **20** run longitudinally of the basic member **12** from the free end **24** of the seat panel or portion **26** thereof to the free end **28** of the back panel or portion **30** thereof. The degree of rigidity introduced into the cardboard seat and back panels **26** and **30** by so orientating the corrugations has been found to be more than ample so as to provide a stable unit, in conjunction with structure which shall be referred to subsequently, regardless of the weight of the user.

The seat and back panels **26** and **30** are defined by a centrally located integral flexible portion **32** extending transversely across the entire width of the member **12**. This flexible portion **32**, more clearly seen in FIGURE 2, is formed by compressing the inner and outer layers **14** and **16** toward each other along a linear portion of the member **12** in a manner so as to compress and flatten the corrugated layers **18** and **20** into intimate contact with the layers **14**, **16** and **22**. It is through this creasing or crimping of the member **12** that a flexible area in the joint **32** is formed. It will be appreciated that several particularly significant features reside in so providing for the pivotal interconnection of the panels **26** and **30**. For example, not only does the joint extend along the full width of the panels **26** and **30**, but also no extrinsic mechanical fasteners are required such as would tend to greatly increase both the expenses incident to the construction of the seat **10** and the subsequent selling price thereof, in addition to giving rise to a possible weakening of the jointed area.

Further strength and rigidity is introduced into the member **12** by the provision of elongated rectangular rigid bars **34** and **36** along the free ends **24** and **28** of the panels **26** and **30**. Each of the bars **34** and **36** is intimately secured to its corresponding end along the full length thereof by any suitable bonding means, such as for example a series of staples or adhesive. The seat bar **34** in particular projects a substantial distance below the bottom layer **16** of the seat panel **26** and has a flat inner face **38** along the full length thereof for flush engagement against the forward edge **40** of a conventiontal stadium bench or seat **42**. In this manner, a positive engagement is had with the front edge **40** of the supporting bench **42** along the full length of the front end of the seat panel

26 with this engagement being effected through the elongated bar which is in turn intimately engaged with the seat panel along the full length thereof. Thus, not only may be portable seat **10** be properly and quickly positioned, but also, a stable engagement is insured which is not dependent upon a particular thickness of the bench **42**.

The outer ends of the rigidifying bars **34** and **36** are located generally coplanar with the side edges of the panels **26** and **30** with the corresponding ends of the bars **34** and **36** being interconnected by elongated fixed-length flexible straps or cords **44**. These straps **44**, fixed to the end portions of the bars by suitable fasteners, limit the opening pivotal movement of the panels **26** and **30** relative to each other to a substantially right angle as shown in FIGURE 1, while at the same time allowing for a complete collapsing of the panels **26** and **30** as illustrated in FIGURE 3. It will be appreciated that the two rigid bars **34** and **36**, through the flexible side straps **44** support a substantial portion of the weight of the body of the user introduced into the seat defined by the reinforced cardboard panels **26** and **30**.

In order to retain the back panel **30** upright should a user thereof temporarily leave the seat, a small rotatably mounted retainer or retaining clip **48** is provided. This retainer **48**, consisting of in effect a bent rigid rod, includes an elongated stem **50** having an integrally formed elongated right angularly related foot **52** on one end thereof and relatively shorter integral right angularly bent handle **54** on the other end thereof. The elongated foot **52** is introduced through a slot or aperture **56** within the top sheet-like layer **14** of the panel **26** and into the upper corrugated layer **18**. There it is rotatable between a first position, illustrated in phantom lines in FIGURE 2, wherein the stem **50** and handle **54** overlie the top layer **14** in order to enable a folding of the seat, and a second position wherein the stem **50** projects perpendicularly upward from the seat panel **26** so as to form an abutment or stop preventing a downward folding of the back panel **30**. As should be appreciated from FIGURE 2, the retainer **48** will most likely have the foot **52** thereof inserted through the aperture **56** prior to the mounting of the straps **44**. Further, if so desired, a portion of the foot **52** rearward of the aperture **56** can overlie the top layer **14** thereof thus providing for a slight frictional resistance to a rotating of the retainer **48** such as would tend to maintain the stem **50** perpendicularly once so positioned and until manually returned to its down position through a grasping of the handle **54**.

It is also contemplated that cushioning pads **58** and **60** be bonded to the inner layers **14** of the seat and back panels **26** and **30** so as to introduce an additional factor of comfort, the panels **58** and **60** being made of suitable cushioning material, such as polyurethane slabs.

With particular reference to FIGURE 3, it should be appreciated that the manner in which the seat **10** can be compactly folded constitutes a significant feature of the instant invention. Upon folding the seat, the straps **44** being received between the panels **26** and **30**, the rigidifying rectangular bars **34** and **36** are located parallel to each other which, when alternating the folded seats **10**, tends to provide, in a packing or storing carton **62**, a solid frame for both rigidifying the carton **62** itself and providing a protected enclosure for the more vulnerable cardboard members **12**.

From the foregoing, it should be appreciated that a highly novel foldable portable seat has been defined, this seat being capable of extremely economical manufacture and at the same time possessing a high degree of rigidity and stability so as to make it uniquely adapted for use under relatively rough conditions, for example at sport events, as auxiliary seats on boats, etc.

Incidently, while not specifically noted supra, it should be appreciated that the full back panel **30** presents an enlarged rear surface upon which any suitable advertising or promotional material could be applied.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A portable seat comprising an elongated planar member, a flexible area defined in said member between the opposite ends thereof and extending across the width thereof so as to divide said member into two generally equal size pivotally joined panels, said panels constituting a seat panel and a back panel, an elongated rigid bar intimately engaged with each panel along substantially the entire free end thereof, limit means engaged between the bar of the back panel and the bar of the seat panel so as to limit pivotal movement of the panels between a first overlying relationship and a second generally right-angular relationship, the rigid bar engaged with the seat panel end projecting below the bottom of the seat panel along substantially the full length thereof, said seat panel bar including a flat inner edge face orientated at generally a right angle to the bottom of the seat panel so as to define a full length bench abutting face, said member being formed of cardboard and including inner and outer sheet-like layers and at least one intermediate corrugated layer bonded therebetween, the corrugations of the corrugated layer extending lengthwise from one end of the member to the other end thereof, said cardboard member, in said flexible area, having the sheet-like layers compressed together with the corrugated layer therebetween being flattened and intimately conforming to the sheet-like layers, thereby allowing for a pivotal movement of the panels relative to each other, and movably mounted means on said seat for selectively retaining said panels at substantially right angles to each other, said movable retaining means comprising an elongated stem, and an elongated foot integral with said stem at a first end thereof and projecting at substantially a right angle thereto, said foot being rotatably mounted on one of said panels lengthwise thereof with said stem being located adjacent said flexible area, whereby said stem, through a rotation of the foot, is selectively positionable overlying the foot mounting panel or projecting at a substantially right angle thereto for engagement by the other panel so as to restrict movement of the panels toward each other.

2. The structure of claim **1** wherein the limit means between the panel bars comprise elongated fixed length flexible strap-like members.

3. The structure of claim **2** wherein said panel bars, upon a folding of said panels into overlapping relation, parallel and overlie each other.

4. The structure of claim **1** wherein the panel mounting the stem foot has an aperture defined in the inner sheet-like layer, said foot being introduced into a corrugation in the corrugated layer through the aperture.

5. A portable seat comprising an elongated planar member, a flexible area defined in said member between the opposite ends thereof and extending across the width thereof so as to divide said member into two generally equal size pivotally joined panels, said panels constituting a seat panel and a back panel, an elongated rigid bar intimately engaged with each panel along substantially the entire free end thereof, limit means engaged between the bar of the back panel and the bar of the seat panel so as to limit pivotal movement of the panels between a first overlying relationship and a second generally right-angular relationship, and movably mounted means on said seat for selectively retaining said panels at substantially right angles to each other, said movable retaining

means comprising an elongated stem, and an elongated foot integral with said stem at a first end thereof and projecting at substantially a right angle thereto, said foot being rotatably mounted on one of said panels lengthwise thereof with said stem being located adjacent said flexible area, whereby said stem, through a rotation of the foot, is selectively positionable overlying the foot mounting panel or projecting at a substantially right angle thereto for engagement by the other panel so as to restrict movement of the panels toward each other.

6. The structure of claim 5 wherein said member is formed of cardboard and includes inner and outer sheet-like layers and at least one intermediate corrugated layer bonded therebetween, the corrugations of the corrugated layer extending lengthwise from one end of the member to the other end thereof, said rigid bars transversely stabilizing said member at the opposite ends thereof and constituting the sole securing means for the limit means, said limit means comprising elongated fixed length flexible strap-like members.

7. A portable seat comprising an elongated self-supporting planar member, said member being formed of cardboard and including at least one corrugated layer, the corrugations thereof extending lengthwise from one end of the member to the other end thereof, a flexible area defined in said member between the opposite ends thereof and extending transversely across the width thereof so as to divide said member into two generally equal size pivotally joined panels, said panels constituting a seat panel and a back panel, a straight elongated rigid bar intimately engaged with each panel solely along substantially the entire free end thereof, flexible strap means extending between and having the opposite ends thereof directly connected to the side ends of the bar of the back panel and the bar of the seat panel so as to limit pivotal movement of the panels between a first overlying relationship and a second generally right angular relationship, the rigid bar engaged with the seat panel projecting below the bottom of the seat panel along substantially the full length threof and constituting the sole projection therebelow, said seat panel bar including a flat inner edge face orientated at generally a right angle to the bottom of the seat panel so as to define a full length bench abutting face.

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