

Oct. 31, 1950

W. B. HINES  
PORTABLE FOLDING SEAT

2,528,433

Filed Jan. 12, 1946

2 Sheets-Sheet 1

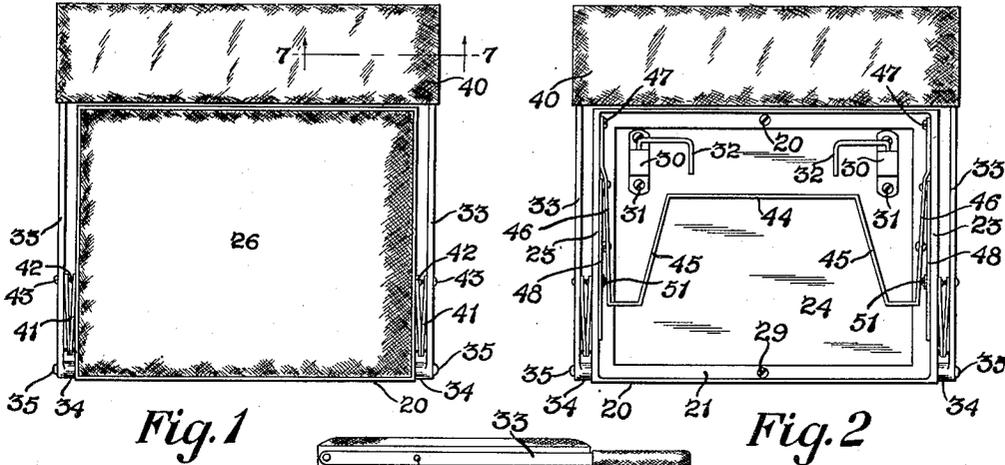


Fig. 1

Fig. 2



Fig. 3

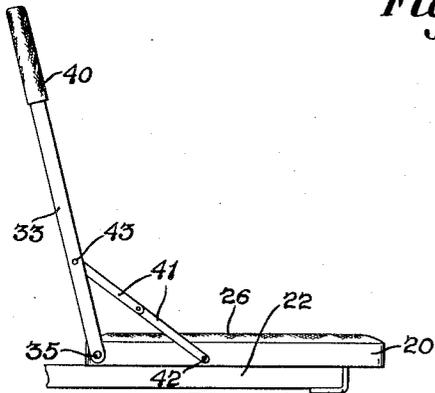


Fig. 4

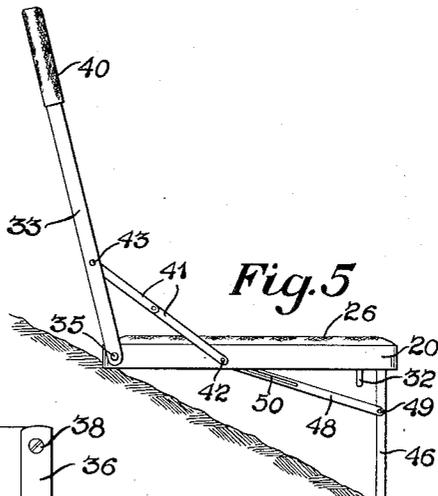


Fig. 5

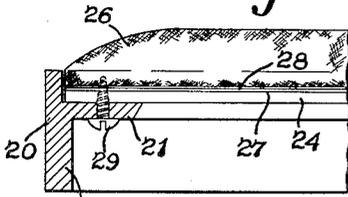


Fig. 6

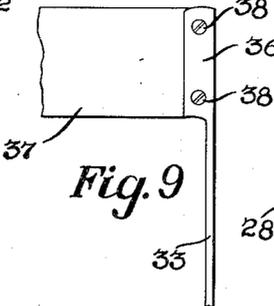


Fig. 9

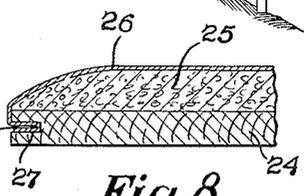


Fig. 8

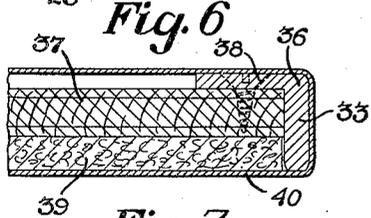


Fig. 7

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2 Sheets-Sheet 2

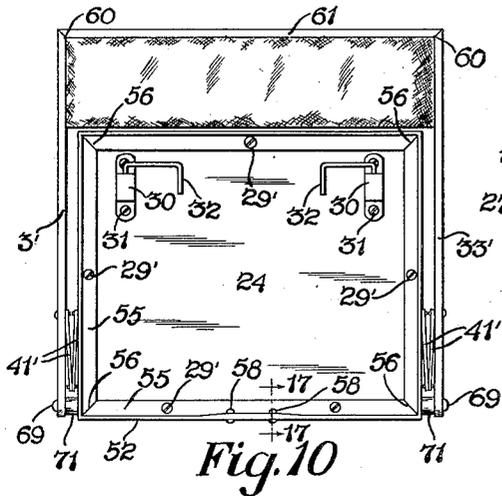


Fig. 10

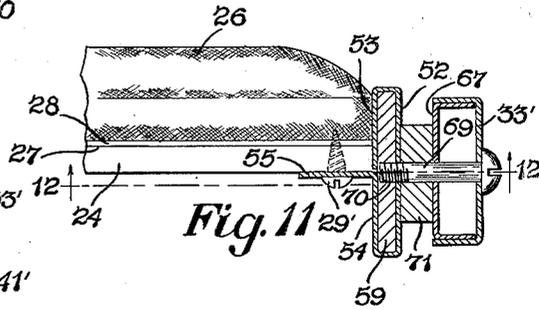


Fig. 11

Fig. 12

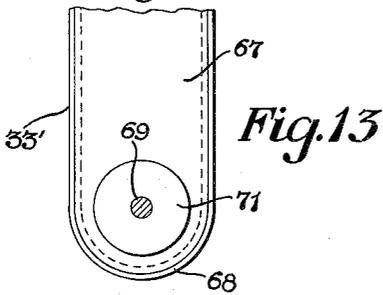
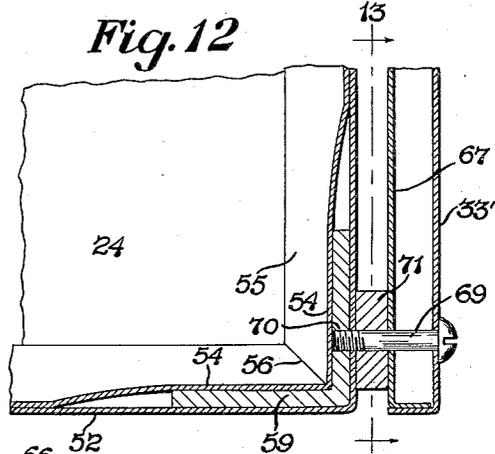


Fig. 13

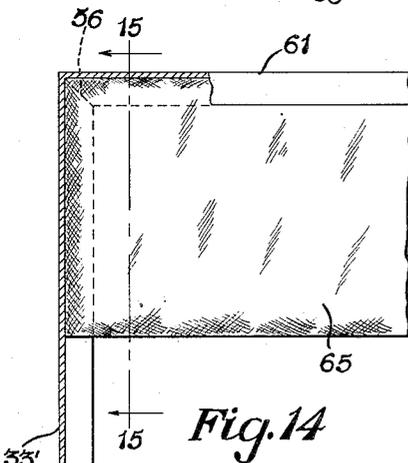


Fig. 14

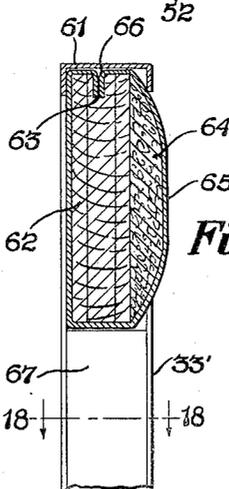


Fig. 15

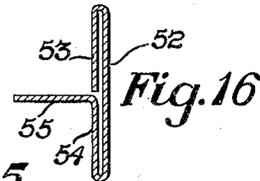


Fig. 16

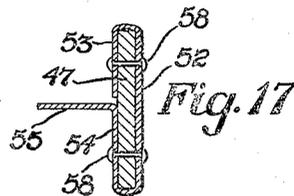


Fig. 17

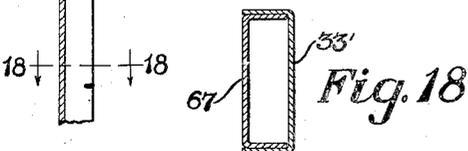


Fig. 18

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# UNITED STATES PATENT OFFICE

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## PORTABLE FOLDING SEAT

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Application January 12, 1946, Serial No. 640,908

2 Claims. (Cl. 155—133)

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The invention relates to portable seats and more particularly to a folding seat for use in stadiums, gymnasiums, row boats or other places provided with seats constructed of concrete, iron or wood without any back supporting means, and the present invention is concerned with certain improvements over the folding seat disclosed in my Patent No. 2,220,865, dated November 5, 1940.

In stadiums and similar places where no overhead cover is provided the seats being exposed to the weather are cold and frequently wet or covered with snow or ice, making their use both uncomfortable and dangerous to the health of the occupants thereof.

For this reason it is common practice for those attending football games or other events in such stadiums to carry cushions, blankets or other articles with which to provide a dry and more comfortable seat. Even with the use of such articles however the usual stadium seats are not comfortable as they are generally not provided with back rests.

It is therefore an object of the invention to provide a portable, folding seat which may be easily carried by the user and which may be readily clamped in place upon the ordinary seat in stadiums and similar places providing a dry comfortable cushion seat having a back rest thereon.

Another object is to provide such a seat with a folding back rest so constructed and arranged that it will fold down into the normal plane of the seat cushion so as to provide a compact article which will occupy a minimum of space when carried or stored.

A further object is to provide a portable folding seat comprising novel means for attaching a seat cushion thereto.

A still further object is to provide novel means for attaching the covering to the seat cushion.

Another object is to provide a seat of this type in which a novel and simple means is provided for applying a cushioned back rest thereto.

Still another object of the invention is to provide a removable slip cover for the back rest, upon which may be displayed any desired advertising matter or the names of colleges, schools or the like.

It is a further object to provide a seat of the character referred to with a hill side attachment whereby the seat may be rigidly supported in horizontal position upon a slope or incline.

A still further object is to provide a one piece frame for the seat proper which may be formed as by die casting and which contains certain novel details of construction.

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Another object of the invention is to provide a simple, inexpensive and durable sheet metal frame.

The above objects, together with others which will be apparent from the drawings and the following description, may be attained by constructing the various features of the improved portable folding seat in the manner hereinafter described in detail and illustrated in the accompanying drawings, in which:

Figure 1 is a top plan view of the preferred form of the seat, showing it in the folded condition;

Fig. 2 a bottom plan view of the folded seat showing the clamping means by which the portable seat may be attached to a stadium seat or the like, and also showing the hill side attachment by means of which the seat may be held in horizontal position upon a slope or incline;

Fig. 3 a side elevation of the improved seat in folded position;

Fig. 4 a side elevation of the improved seat in operative position clamped upon the seat of a stadium or the like;

Fig. 5 a similar view of the seat showing the hill side attachment in use to support the seat in horizontal position upon a hill side;

Fig. 6 an enlarged, fragmentary section through the metal frame showing the manner in which the seat cushion is attached thereto;

Fig. 7 an enlarged, fragmentary section through the back rest, taken on the line 7—7, of Fig. 1;

Fig. 8 an enlarged, fragmentary section through the seat cushion, showing the means for attaching the cushion pad and covering to the base;

Fig. 9 an enlarged, fragmentary rear elevation of a portion of the back rest and an adjacent portion of one of the lever arms carrying the same;

Fig. 10 a bottom plan view of a modified form of the improved portable seat, showing the same in folded condition;

Fig. 11 an enlarged, fragmentary sectional view through a corner portion of the modified seat frame showing the pivotal connection of one of the lever arms thereto;

Fig. 12 a section on the line 12—12, Fig. 11;

Fig. 13 a section on the line 13—13, Fig. 12;

Fig. 14 an enlarged, fragmentary sectional elevation of one end portion of the modified back rest showing an adjacent portion of one of the lever arms;

Fig. 15 a section on the line 15—15, Fig. 14;

Fig. 16 an enlarged, detached cross section of the modified seat frame;

Fig. 17 a similar view through the joined ends thereof, taken as on the line 17—17, Fig. 10; and Fig. 18 a section on the line 18—18, Figs. 14 and 15.

Referring first to the form of the invention illustrated in Figs. 1 to 9 inclusive, the seat frame indicated generally at 20 may be of rectangular shape and of suitable thickness to provide a comfortable seat and is formed of any suitable metal and may be die cast or otherwise formed to provide a horizontal flange 21 extending entirely around its inner side.

For the purpose of providing bearing surfaces for resting upon the usual seat 22 of a stadium or the like, the two opposite side rails of the seat frame 20 may be of thicker cross section as indicated at 23.

The seat proper may comprise the base portion 24, preferably in the form of a rectangular board of plywood or the like, having a pad 25 of upholsterer's wool, sponge rubber or other suitable cushion material mounted upon its upper surface and covered by any suitable water proof fabric material as indicated at 26.

In order to provide a simple and inexpensive means for attaching the covering material to the base 24, a slot 27 may be formed around the four edges of the board 24 and the edge portions of the covering material 26 forced therein as indicated at 28, by any suitable tool, so as to fixedly hold the covering material in position over the cushion and attached to the base.

The board 24 is of suitable size and shape so as to just fit within the rectangular frame 20 and rests upon the horizontal flange 21 thereof to which the board may be connected as by screws 29.

The clamping means for detachably connecting the portable seat to the seat of a stadium, row boats or the like, may be the same type disclosed in detail in my prior Patent No. 2,220,865, above referred to, and comprises generally a bearing plate 30 of U-shape attached to the underside of the board 24 as by screws 31 and having the U-shape clamping member 32 pivotally mounted therein and spring loaded as illustrated and described in detail in said patent.

The back comprises a pair of lever arms 33, each of which may be die cast or otherwise formed of suitable metal having a box 34 at one end for pivotal connection to the rear corner portions of said frame 20 as indicated at 35, the other end of each lever arm having an angular flange 36 formed integrally thereon for connection to the back rest.

This back rest may comprise a base in the form of a board 37 of plywood or the like attached to the flanges 36 of the lever arms as by screws 38 and having a pad or cushion 39 of any suitable cushion material cemented or otherwise fixed to its front face.

A slip cover 40 of any suitable water proof material is adapted to be detachably mounted over the back rest and the free end portions of the lever arms as indicated in the drawings, this slip cover being preferably of the same material and same color as the water proof covering 26 upon the seat.

If desired any advertising matter or the like, of any college or school name may be displayed upon the slip cover 40, and since these slip covers are removable, they may be interchanged from time to time, in order to display different advertising or school names thereon as occasion may require.

For the purpose of limiting the opening movement of the back a pair of pivoted links 41 is pivotally connected to each side of said frame 20 as at 42 and to the adjacent lever arm 33 as at 43 and the heads of the pivots 42 and 43 are so proportioned that they will contact each other and stop the lever arms 33 when they reach the folded position shown in Figs. 1, 2 and 3 in which position the lever arms 33 lay along side of the seat frame 20 with the back rest 40 positioned just beyond the forward edge of the seat and in the normal plane thereof, whereby the improved portable folding seat when folded occupies a minimum of space and may be easily carried under the arm or stored in a small space.

In order that the seat may be used upon a hill side or inclined surface, the hill side attachment shown in Figs. 2 and 5 may be provided upon the underside of said frame. This hill side attachment comprises a single bar or rod of metal having the central substantially U-shape portion, having the flat bar 44 joining the diverging legs 45, the ends of the metal bar or rod being then bent backward forming the legs 46 which are pivotally connected to the forward corner portions of the seat frame 20 as indicated at 47, slotted links 48 being pivotally connected to the legs 46 as indicated at 49, the slots 50 slidably engaging the studs 51 on the underside of the seat frame.

When not in use this hill side attachment is folded flat against the bottom of the seat as shown in Fig. 2 and when opened up for use as indicated in Fig. 5, the legs 46 will rest upon a lower portion of the slope while the rear edge of said frame 20 will rest upon a higher portion of the slope holding the seat in horizontal position as shown in said figure.

In Figs. 10 to 18 inclusive is shown a modification of the invention in which the seat frame and the lever arms are made of sheet metal which may be rolled or otherwise formed in order to provide an inexpensive but strong and durable construction.

To this end a single strip 52 of metal of suitable gauge is rolled or otherwise formed to the cross sectional shape shown in Fig. 16, one edge portion thereof being folded back upon itself to substantially the center of the finished frame as indicated at 53, the other edge portion being folded back upon itself to substantially the center of the frame as indicated at 54 terminating in the inturned, horizontal flange 55.

The flange portion 55 is mitered at suitable intervals, as indicated at 56, to conform to the corners of the frame which is then bent to rectangular shape as best indicated in Fig. 10, the abutting ends of the formed strip being connected by inserting a straight strip of metal 47 between the body 52 and folded flanges 53 and 54 and connecting them by means of rivets 58.

The corner portions of the frame may be reinforced by angle irons 59 located between the body 52 of the metal strip and the folded flanges 53 and 54.

The seat proper may be of the same construction as above described and the same reference numerals are applied thereto as in Figs. 1 to 9 and the seat may be attached to the frame as by the screws 29' in the manner above described.

The same clamping members may be attached to the underside of the seat at its front portion, for detachably connecting the seat to a stadium seat or the like and the same reference numerals are applied to these clamping members as in

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the form of the invention illustrated in Figs. 1 to 9.

The back member is formed of a metal strip bent into channel form and mitered as indicated at 60 so as to form the lever arms 33' connected together at one end by the top member 61.

In this form of the invention the back rest may, if desired, be of the form best shown in Fig. 15, comprising the base 62 which may be a board of plywood or similar material, grooved along its upper edge as at 63, a pad 64 of suitable cushion material being provided upon the forward side thereof and a cover 65 of any suitable waterproof material entirely covering the board 63 and the cushion 64, the edges of the covering material being forced into the groove 63 as indicated at 66.

This back rest is slidably positioned within the channels of the lever arms 33 and the top member 61 and in order to hold it in position each lever arm may be reinforced by a channel strip 67 which extends from the back rest to the opposite end of the lever arm 33'.

Both the lever arm 33' and the channel reinforcing member 67 may be rounded at their ends as indicated at 68. These ends of the lever arms may be pivotally connected to the rear corner portions of the seat frame as by the screws 69, which are threaded into tapped openings 70 in the corner angle irons 69, a spacing washer 71 being located between each lever arm and the seat frame.

The pivoted links 41' are provided for limiting the opening movement of the back in the same manner as shown in Figs. 4 and 5.

If desired the hill side attachment shown in Figs. 2 and 5 may be attached to the bottom of the seat of this form of the invention in the same manner as above described.

From the above it will be evident that a simple, durable portable folding seat is provided which may be folded into a minimum of space or easily carried under the arm and which may be easily and readily attached to a stadium seat or

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the like and opened up to provide a comfortable seat cushion and back rest, or which may be mounted upon a hill side or slope to provide a horizontal seat.

I claim:

1. A portable folding seat comprising a seat portion, a back pivotally connected to the seat, a substantially double U-shape bar pivoted to the under side of the seat and slotted links pivotally connected to the double U-shape bar and slidably connected to the seat for supporting the seat in horizontal position upon an inclined surface.

2. A portable folding seat comprising a rectangular seat frame, a seat carried by the frame, a pair of lever arms each pivoted at one end to the outside of the seat frame, an angular flat flange at the other end of each lever arm and a back rest comprising a rigid base, screws attaching the ends of the rigid base to said flanges, a cushion upon the front of said base and an envelope slip cover of flexible material removably mounted over the base and cushion and the flanged ends of the lever arms.

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