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P. W. HUSSEY

2,186,866

SEAT, FOOTBOARD, AND STRINGER STRUCTURE

Filed July 19, 1937

Fig. 1.

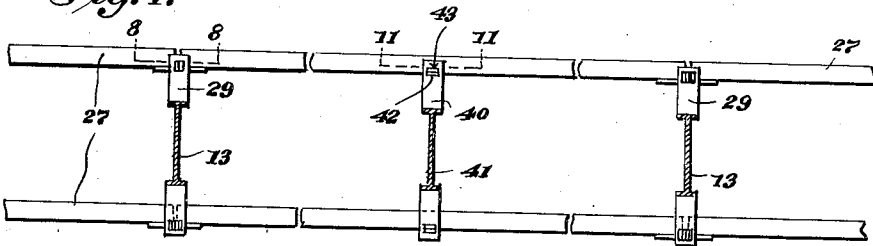


Fig. 2.

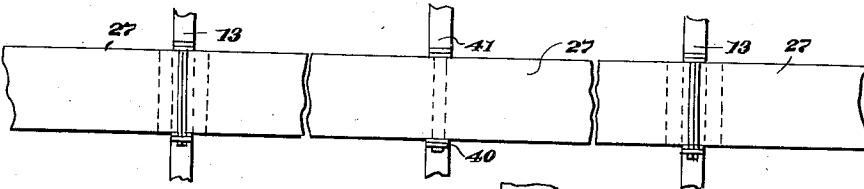


Fig. 3.

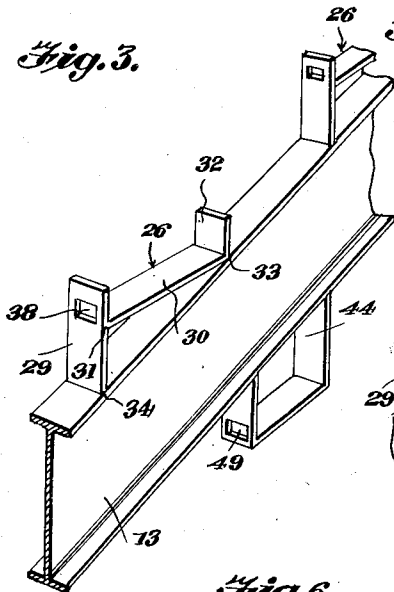


Fig. 8.

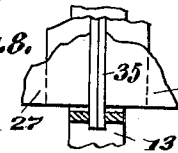


Fig. 9.

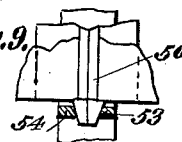


Fig. 4.

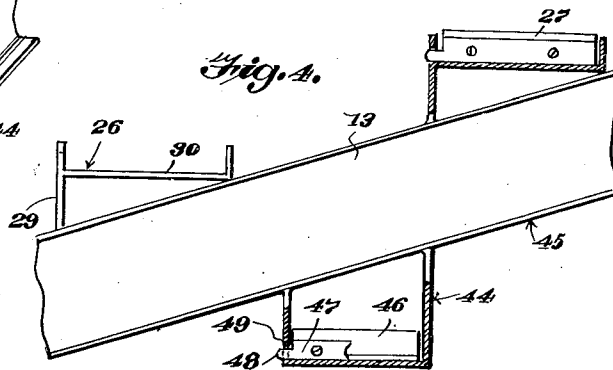


Fig. 5.

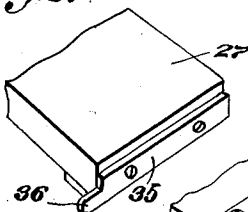


Fig. 6.

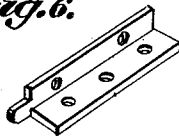


Fig. 10.

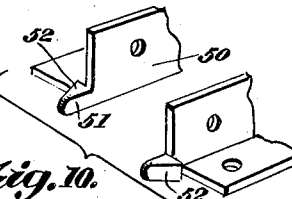
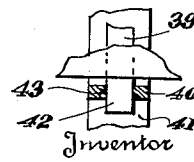


Fig. 11.



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SEAT, FOOTBOARD, AND STRINGER
STRUCTURE

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3 Claims. (Cl. 155—130)

This invention relates to a seat and stringer structure especially adapted for use in connection with portable bleachers.

One of the important objects of this invention is the production of a simple and efficient means for supporting and anchoring seat and foot boards upon the stringers of portable bleachers, which stringers are arranged in parallel relation.

A further object of this invention is the production of a simple and efficient bracket for supporting seat and foot boards upon the stringer of a portable bleacher structure in such a manner as to prevent the boards from tipping up when the occupants stand up upon the boards.

Other objects and advantages of the present invention will appear throughout the following specification and claims.

In the drawing:

Figure 1 is a front elevation of a series of seat and foot boards showing the manner of attaching the seat and foot boards to the stringers, the stringers being shown partly in section;

Figure 2 is a top plan view of a series of seat boards and stringer structure, the stringers being shown broken away;

Figure 3 is a sectional perspective view of a portion of a stringer showing the bracket structure for supporting the seat and foot boards;

Figure 4 is a side elevation of a portion of one of the stringers, showing the manner in which the seat and floor boards are supported by the brackets;

Figure 5 is a perspective view of one end of one of the boards;

Figure 6 is a perspective view of one of the end plates for the seat and foot boards, looking at the inner face of the plates;

Figure 7 is an inverted perspective view of a portion of one of the boards, showing the intermediate anchoring strap;

Figure 8 is an enlarged horizontal sectional view taken on line 8—8 of Figure 1;

Figure 9 is an enlarged horizontal sectional view similar to Figure 8, showing a modified form of securing lug for the end plates;

Figure 10 is a group perspective view showing fragments of adjacent end plates and illustrating said modified type of lug structure;

Figure 11 is an enlarged horizontal sectional view taken on line 11—11 of Figure 1.

By referring to the drawing, it will be seen that a plurality of stringers or beams 13 and 41 are employed, which preferably extend in parallel relation and are arranged on an incline

with their rear ends elevated. These stringers may be anchored and supported in any suitable or desired manner without departing from the spirit of the invention although it is preferable to support the stringers in the manner as disclosed in my previous Patent No. 2,061,465, dated November 17, 1936, and relating to Portable bleachers.

Each stringer 13 supports a plurality of brackets 26 upon the upper face thereof and the brackets of each stringer will constitute an efficient seat supporting bracket for supporting the seat boards 27, constituting rest members, which seat boards 27 may be of any suitable or desired structure but are preferably formed of a wooden board structure. The seat boards 27 are adapted to span the distance between the brackets and stringers, as indicated in Figures 1 and 2 of the drawing.

Each seat supporting bracket 26 comprises a front vertically extending seat supporting strut 29 and a bridge plate 30, as clearly shown in Figure 3. The bridge plate 30 and supporting strut 29 are preferably welded, as at 31, for constituting an integral structure, the bridge plate 30 being connected to the inner face of the supporting strut 29 at a point slightly below the upper edge of the supporting strut 29 whereby the upper end of the supporting strut 29 will constitute a snug abutment for the seat boards 27. The rear end of the bridge plate 30 is provided with an upwardly bent finger 32 which constitutes a rear abutment for the seat boards 27, which upwardly extending finger 32 in combination with the bridge plate 30 and the upper extremity of the supporting strut 29 constitutes a pocket for supporting the seat boards 27 in a cradle-like manner. The rear end of the bridge plate 30 is preferably welded as indicated at 33, to the upper face of the stringer 13 and the lower end of the strut 29 is preferably welded, as indicated at 34, to the upper face of the stringer 13, thereby providing the very rigid, substantial, and practically integral structure for supporting the seat boards 27.

A plurality of these seat supporting brackets 26 may be arranged in proper spaced relation along the upper face of the stringer 13 to provide ample and comfortable seating arrangement for the seat boards 27. In order that these boards 27 may be properly anchored in position and be held against slipping, I have provided a specially constructed anchoring means. Each seat board 27 is provided at each end with an angle plate 35 which extends under the lower

face of the board 27 and vertically in snug engagement with the end face of the board 27, as clearly shown in Figure 5, thereby constituting an efficient protector for the seat board 27 and supporting the seat board 27 upon the upper face of the bridge plate 30, as shown. Each angle plate 35 is provided at its forward end with a projecting lug 36, for fitting in the anchoring aperture 38 formed in the vertically extending strut 29 of the seat supporting bracket 26. In actual practice, two seat boards 27 are placed upon the bracket 26 so as to have their adjoining ends arranged in abutting relation, as shown in Figures 1 and 2 of the drawing, and the respective lugs 36 of the plates 35 extend in pairs through the anchoring apertures 38.

By carefully considering the drawing, it will be seen that a very simple and efficient locking means has been provided for attaching the boards 27 to the seat board supporting brackets 26, and that these wedging lugs 36 will constitute an efficient means for binding the seat boards in position against lateral displacement and will also tend to tie the entire structure together in view of the fact that the seat boards will span the distance between the stringers, as shown. At any suitable or desired location between the anchored ends of the seat board 27, may be carried a plurality of securing members or straps 39 which may be secured to the under face of the seat board 27 for fitting in the upwardly extending brackets 40 carried by an adjacent stringer 41, the strap 39 being provided with a projecting tongue 42 to fit in the square hole 43 formed in the upper end of the bracket 40 and these straps 39 are preferably mounted in the center of the seat boards 27. The brackets 40 are similar to the brackets 26. This structure will constitute an efficient tying means at the center of the seat board for facilitating the tying of the entire structure together. The strap 39, as well as the plates 35, may lie flush with the face of the board if desired, without departing from the spirit of the invention.

The angle iron end on the seat board previously described and illustrated in Figures 2 and 5, is an important feature in that it has a triple function; first, it keeps the seat boards from splitting in the usual rough handling; second, it holds the seat boards in place with the assistance of the strap 39; and third, this structure assists in tying the adjoining stringers together throughout the entire length of the structure acting as a top cord of the truss and preventing wear of the wood at the bearing points. This structure also permits the seat boards to be connected without the necessity of overlapping at their bearing points, which, for safety is a very important feature.

In carrying out my invention, I also provide a plurality of foot board hanger brackets 44, which brackets are substantially U-shaped in formation and are hung from the lower face 45 of the stringers. These foot board hanger brackets are preferably arranged or located between the seat board supporting brackets 26, or in other words are arranged in staggered relation thereto so that the foot boards 46 which also constitutes rest members may be supported in proper relation with respect to the seat boards 27. The foot boards 46 may be narrower than the seat boards, if desired, as shown in Figure 4. The foot boards 46 are provided with angle plates 47 similar to the

plates 35, which plates 47 are provided with projecting lugs 48 similar to the lugs 36, which lugs 48 snugly fit within the apertures 49 formed in the front portion of the brackets 44. The foot boards are supported upon the brackets in the manner similar to the seat boards, the ends of the adjoining foot boards abutting and their respective lugs 48 fitting in pairs through the apertures 49 of the respective brackets 44 in the same manner as is shown in detail in Figure 8 with respect to the seat boards.

In Figures 9 and 10, I have shown a modified type of end plate structure which may be used if desired with the seat and foot boards wherein the plates 50 are constructed similarly to the plates 35, lugs 51, however, being provided with their outer faces 52 bevelled in order to permit the lugs to be wedged tightly through the receiving apertures 53 formed in the supporting brackets 54, the brackets being the same as those shown in Figure 3.

It should be understood that changes in the detail construction, combination and arrangement of parts may be employed without departing from the spirit of the invention, so long as these changes fall within the scope of the appended claims.

Having described the invention, what I claim as new is:

1. A structure of the class described comprising a plurality of supporting stringers arranged in spaced substantially parallel relation, rest member supporting brackets suspended below the stringers, the rest member supporting brackets being substantially U-shaped in formation, the rest member supporting brackets having apertures formed therein, angle plates, rest members supported by said brackets, said angle plates fitting over the ends of the rest members and provided with projecting means fitting in the apertures for locking the rest members upon the brackets against lateral shifting movement.

2. In a structure of the class described comprising a rest member supporting bracket, said rest member supporting bracket having an upstanding arm at its front end formed with an aperture, rest members having their ends supported upon said bracket and arranged in abutting relation to each other, each rest member having an angle plate at each end extending over the end thereof and under a portion of the bottom of the rest member, and each plate being provided with a forwardly projecting tapering lug, the lugs of the plates carried by the abutting ends of the rest members fitting within said apertures and having wedging fit therein for locking said rest members in position.

3. A structure of the class described comprising a plurality of supporting stringers arranged in spaced substantially parallel relation, rest member supporting brackets having vertical walls carried by the stringers, rest members having side edges supported by the brackets, said brackets having apertures formed in their vertical walls, wedge-shaped lugs fixedly secured to said rest members and projecting outwardly from the side edges of the rest members wedging in said apertures and locking the rest members upon the brackets against lateral and vertical shifting movement.

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