Sept. 8, 1953 S. S. STORER, JR 2,651,081

PORTABLE GRANDSTAND

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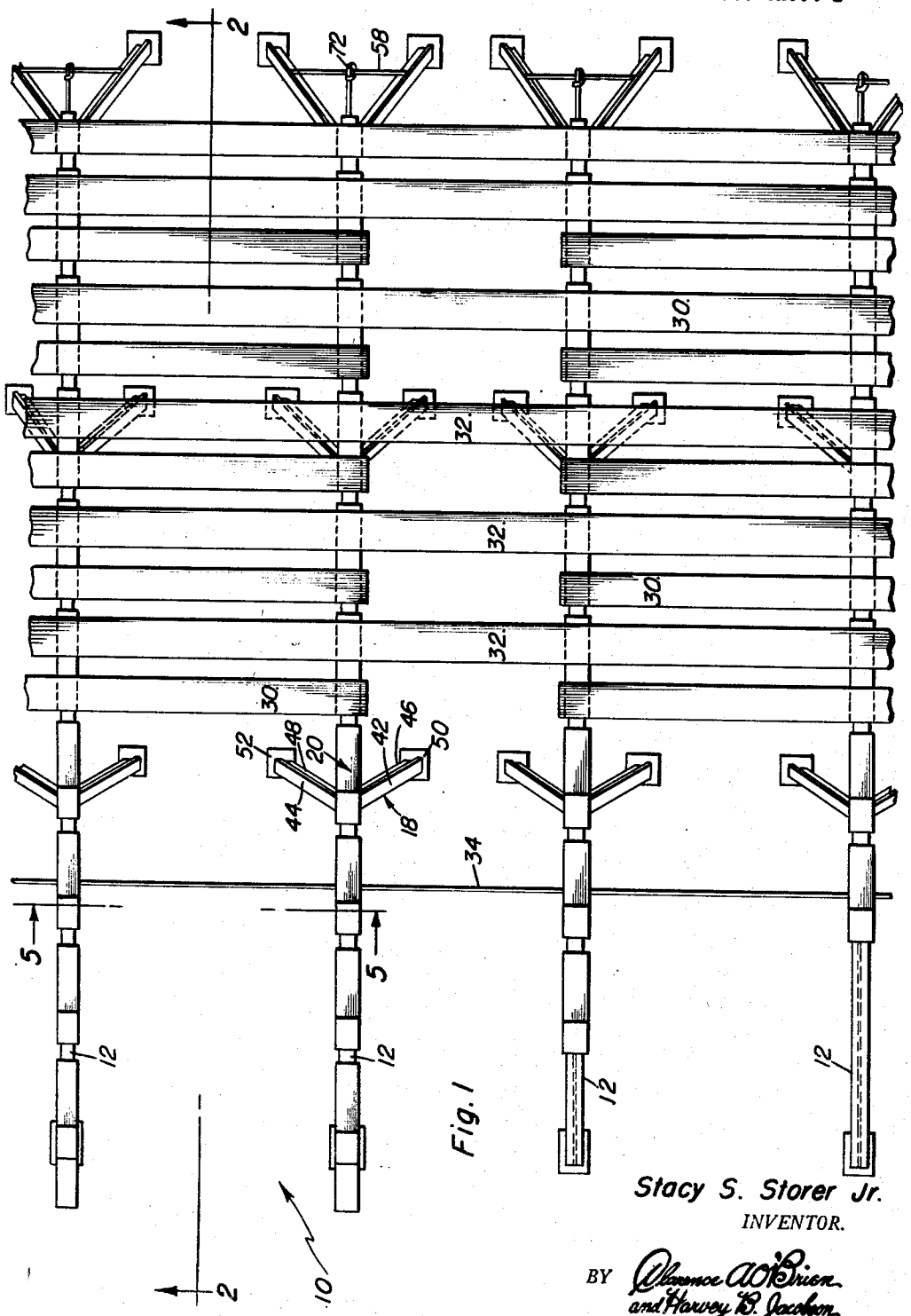


Fig. 1

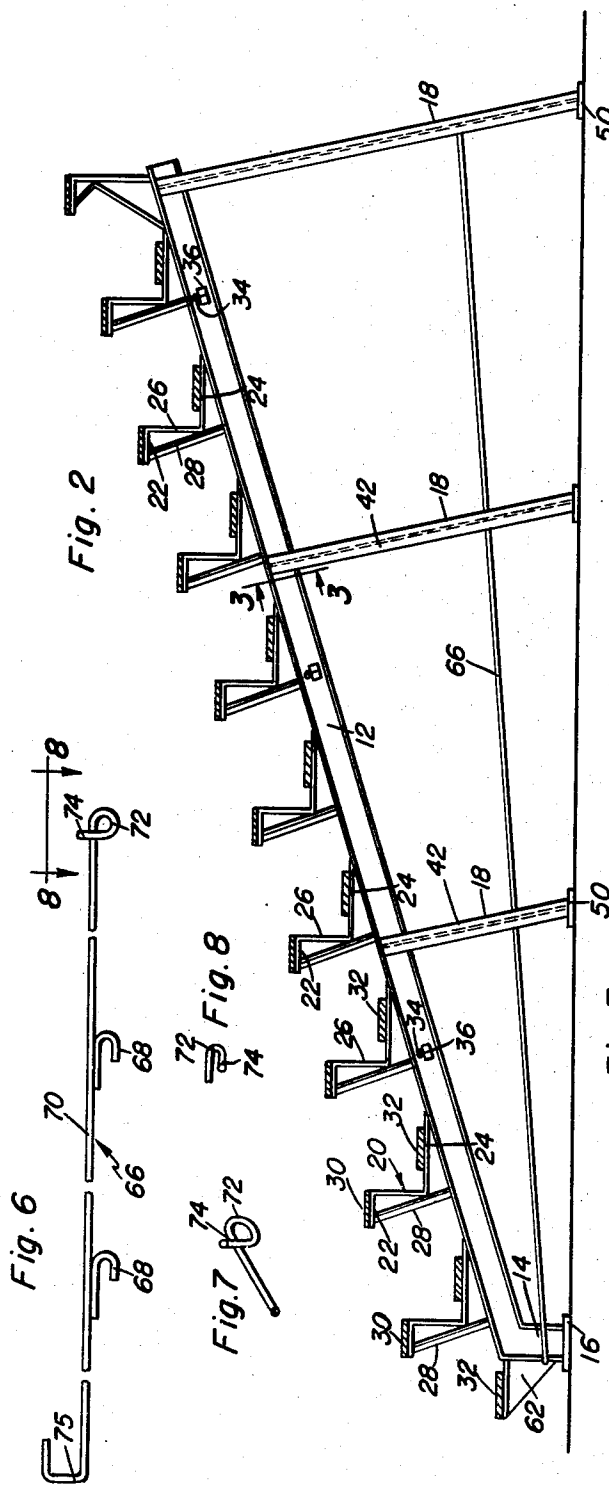
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INVENTOR.

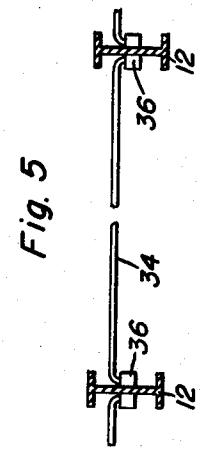
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Attorneys

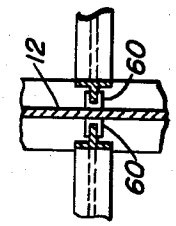
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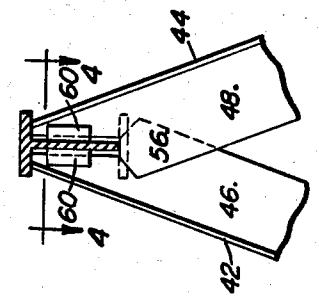
PORTABLE GRANDSTAND

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Fig. 9

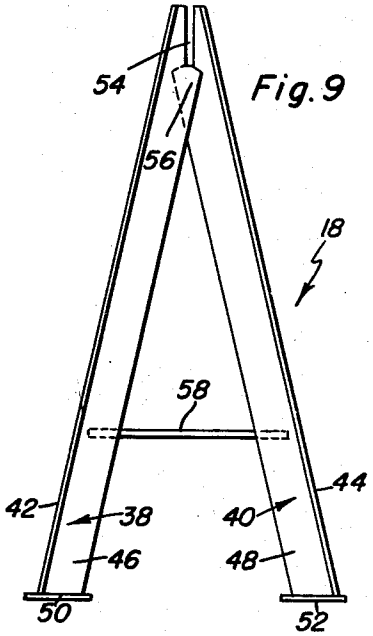


Fig. 11

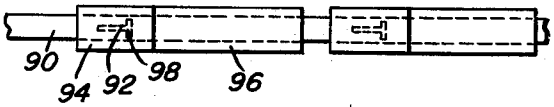


Fig. 12

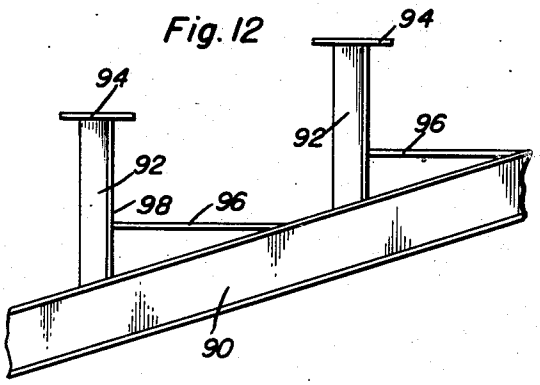
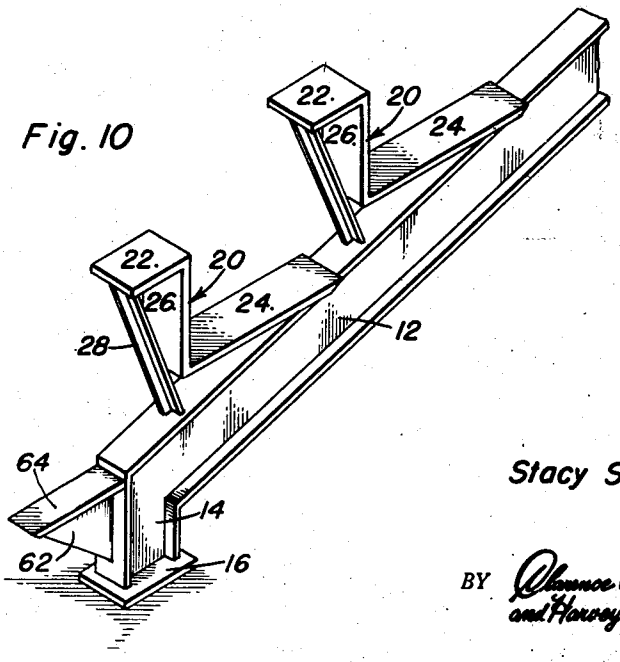


Fig. 10



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Patented Sept. 8, 1953

2,651,081

UNITED STATES PATENT OFFICE

2,651,081

PORTABLE GRANDSTAND

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Application February 1, 1950, Serial No. 141,737

2 Claims. (Cl. 20—1.126)

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This invention relates to seat and deck construction for stadia, and more particularly to a portable grandstand having a substantially rigid steel construction in which the various parts are completely prefabricated in the shop for erection into a strong, unitary, and durable grandstand which may be readily disassembled when no longer needed so that it may be easily stowed or which may be readily transported from one location to another.

An object of this invention is to provide a portable grandstand which is capable of being readily knocked down or disassembled and which, when in this knockdown position, will occupy a minimum amount of space, thereby facilitating the storage and cartage of the various parts forming the grandstand.

Another object of this invention is the protection of a portable grandstand which may be easily set up and taken down and which will be safe in operation so that a number of people may be seated thereon.

Another object of the invention resides in the provision of a novel and efficient tie rod for securing the supporting means for the grandstand in a unitary manner and which will have means associated therewith for preventing the tie rod from becoming unlocked.

A still further object of the invention resides in the provision of the novel Z-shaped seat supports on which the foot rests and seats may be fastened so as to form a unitary grand stand.

A further object of the invention resides in the provision of the brace members which extend perpendicularly to the stringers on which the seat supports are mounted.

Additionally, a further object of the invention includes the provision of substantially A-shaped members for supporting the stringers of the grandstand in an inclined position.

Still further objects of the invention reside in the provision of the portable grandstand that is strong, durable, highly efficient in operation, simple in construction and design, capable of being readily transported or stored, which may be readily fabricated mainly from steel or allied substances, and which is relatively inexpensive.

These, together with the various ancillary objects of the invention which will become apparent as the following description proceeds, are attained by this portable grandstand, a preferred embodiment of which has been illustrated in the accompanying drawings, by way of example only, wherein:

Figure 1 is a top plan view of a portion of a grandstand embodying the principles of the invention, with parts thereof being removed to show other parts in greater detail;

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Figure 2 is a vertical sectional view as taken along line 2—2 in Figure 1;

Figure 3 is an enlarged vertical sectional detail as taken along line 3—3 in Figure 2;

Figure 4 is an enlarged horizontal sectional view as taken along line 4—4 in Figure 3;

Figure 5 is a vertical sectional detail as taken along line 5—5 in Figure 1;

Figure 6 is an elevational view of the novel tie rod used to unify the entire structure;

Figure 7 is a perspective view of the locking end of the tie rod shown in Figure 6;

Figure 8 is a vertical sectional view as taken along line 8—8 in Figure 6 and showing the locking portion of the tie rod in greater detail;

Figure 9 is a front elevational view of one of the A-frame members used to support the stringers;

Figure 10 is a partial perspective view of one of the stringers showing in greatest detail the manner in which the seat-supporting brackets are secured to the stringers;

Figure 11 is a top plan view of a modified form of seat-supporting element or bracket; and

Figure 12 is a side elevational view of the seat-supporting member shown in Figure 11.

With continuing reference to the accompanying drawings wherein like reference numerals designate similar parts throughout the various views, reference numeral 10 generally designates a portion of the portable grandstand comprising the present invention. The various elements of this grandstand include spaced inclined stringers 12, each of which is preferably formed from I-beams and made out of steel or suitable alloys which insure strength and durability for the entire assembly. As shown best in Figures 2 and 10, a leg 14 is welded to an end of the stringers 12. A base plate 16 is welded or otherwise secured to the bottom surface of the leg 14 to provide a greater bearing area for the leg 14. To otherwise support the stringers 12 in an inclined manner, a plurality of A-shaped supporting members 18 are secured thereto in a manner to be henceforth described.

In the preferred form of the invention, as shown in Figures 1 through 10, there is welded or otherwise secured to the stringers 12 a plurality of Z-shaped supporting brackets 20 which are formed with two substantially parallel and horizontal legs 22 and 24 and a central connecting portion forming a riser. These risers are indicated by reference numeral 26. The free ends

of the horizontal legs **24** are welded to the stringers **12**, and angle iron brace members **28** which extend perpendicular to the stringers **12** are terminally welded to the upper leg **22** and the stringer **12**. Then, as desired, planks are positioned and fastened upon the legs **22** and **24** to form seats **30** and foot rests **32**. By eliminating the planks or beams **30** between two adjacent stringers **12**, an aisle can be readily formed out of the remaining members **32** so that a person may easily climb the grandstand to a designated or desired row of seats. Obviously, it is desirable to reduce the size of the aisle by placing the adjoining stringers closer together.

In order to secure adjacent stringers together in a rigid relationship, substantially elongated U-shaped tie rods **34** are provided which are readily inserted in U-shaped members **36** which are welded to the stringers **12** as best shown in Figure 5. The U-shaped members **36** are so welded to the stringers **12** that their free ends abut against the stringers forming an eye in which the opposed legs of the U-shaped tie rods **34** may be readily received.

With reference to the supporting members **18** and with particular reference to Figures 3, 4 and 9, it will be seen that each of these members **18** comprise a pair of inclined legs **38** and **40** which are preferably T-shaped in cross-section. The members **38** and **40**, therefore, are formed with plates **42** and **44** and with webs **46** and **48**, respectively. Base plates **50** and **52** are welded to the bottom surface of the members **38** and **40** in order to provide a greater bearing surface. At the upper end of each of the web portions **46** and **48** there is removed a certain portion so that a slot **54** is formed. The overlapping portions of the web, as at **56**, are welded together and brace rods **58** are also provided to rigidify the construction by being terminally welded to the opposed webs **46** and **48**.

At the location where it is desired to place the A-members **18**, the bottom flange of the I-beam stringers **12** is removed, as can be best seen in Figure 3. U-shaped retaining members **60** are then welded to the web portion of the I member **12** for reception of the webs **46** and **48** adjoining the slot **54**. A highly desirable bearing surface is provided by the plates **42** and **44** which abut against the under surface of the upper flange of the I-beam **12**. The U-shaped retaining members **60** position the members **18** at their proper angle and prevent rotation thereof.

A triangular ledge **62** is secured to the leg **14** and a plate **64** is welded thereto to provide support for the beams **32** forming the foot rests for the lowest seat beam **30**.

Referring now to Figures 6 through 8, in particular, it will be seen that a tie rod generally indicated by reference numeral **66** is provided to lock the supporting members **18** in a rigid manner. A pair of hooks **68** are welded or otherwise secured to the longitudinal rod **70** forming the tie rod **66**. These hooks are adapted to engage the brace rods **58** of the two centrally disposed supporting members **18**. In order to lock the highest supporting member **18** so as to prevent disengagement of the tie rod, a locking means is provided at the end of the tie rod. This locking means comprises a loop **72** formed at the end of the rod **70** to which is integrally formed therewith a substantially L-shaped extension **74** which is spaced from the rest of the rod **70**. In order to lock the tie rod **66** securely to the brace bar **58** of the largest supporting member **18**, it is merely necessary to place this member over the cross or brace rod **58** of the rearmost support member **18** and then rotate it 90° to position the L-shaped extension **74** in such a manner as to prevent the rod from slipping out of engagement with the cross rod **58**, thus allowing the stand to collapse. The rod has a hook **75** at its other end engageable with leg **14**.

Referring now to Figures 11 and 12, there will be seen another form of seat support bracket. On the stringers **90** of this form of the invention there is positioned a substantially T-shaped connecting brace member **92** to which is welded at the upper surface thereof seat plates **94**. The foot rest support plates **96** are terminally welded to the stringer **90** and the flange **98** of the T-iron **92**.

Since, from the foregoing, the construction and advantages of this portable grandstand are readily apparent, further description is believed to be unnecessary.

However, since numerous modifications will readily occur to those skilled in the art after a consideration of the foregoing specification and accompanying drawings, it is not intended to limit the invention to the precise embodiment shown and described, but all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claims.

Having described the invention, what is claimed as new is:

1. A portable grandstand comprising a plurality of inclined horizontally spaced parallel stringers, means for supporting said stringers comprising a plurality of graduated A-shaped members, each of the A-members having a slot in its apex at the upper end and overlapping web portions below said slot, said stringers being of I-beam construction with T-shaped portions slidably received in said slots and resting on said upper ends and said overlapping webs, U-shaped brackets on both sides of said stringers having open vertical sides, and said A-shaped members being received in said open sides adjacent their respective slots.

2. A portable grandstand comprising a plurality of horizontally inclined laterally spaced parallel stringers, a plurality of horizontal beams extending between adjacent stringers, and means for carrying said beams comprising brace members rising from said stringers at a right angle thereto, and Z-shaped beam supporting brackets surmounting said stringers with oppositely extending upper and lower parallel legs joined by a connecting web, the lower legs resting at their extremities on said stringers in horizontal position and the brace-members supporting the extremities of the upper legs and bearing against and supporting said brackets at the juncture of the lower legs with said webs.

STACY S. STORER, JR.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,125,194	Sigmund	Jan. 19, 1915
1,496,624	Christopher	June 3, 1924
1,746,147	Duke	Feb. 4, 1930
1,778,067	Eversole	Oct. 14, 1930
1,839,410	Post	Jan. 5, 1932
1,839,679	Hoppes	Jan. 5, 1932
2,343,832	Pinson et al.	Mar. 7, 1944
2,466,982	Easterwood	Apr. 12, 1949