June 23, 1942. R. W. PAGE ET AL 2,287,561

PORTABLE GRANDSTAND

Filed July 29, 1940 3 Sheets-Sheet 1

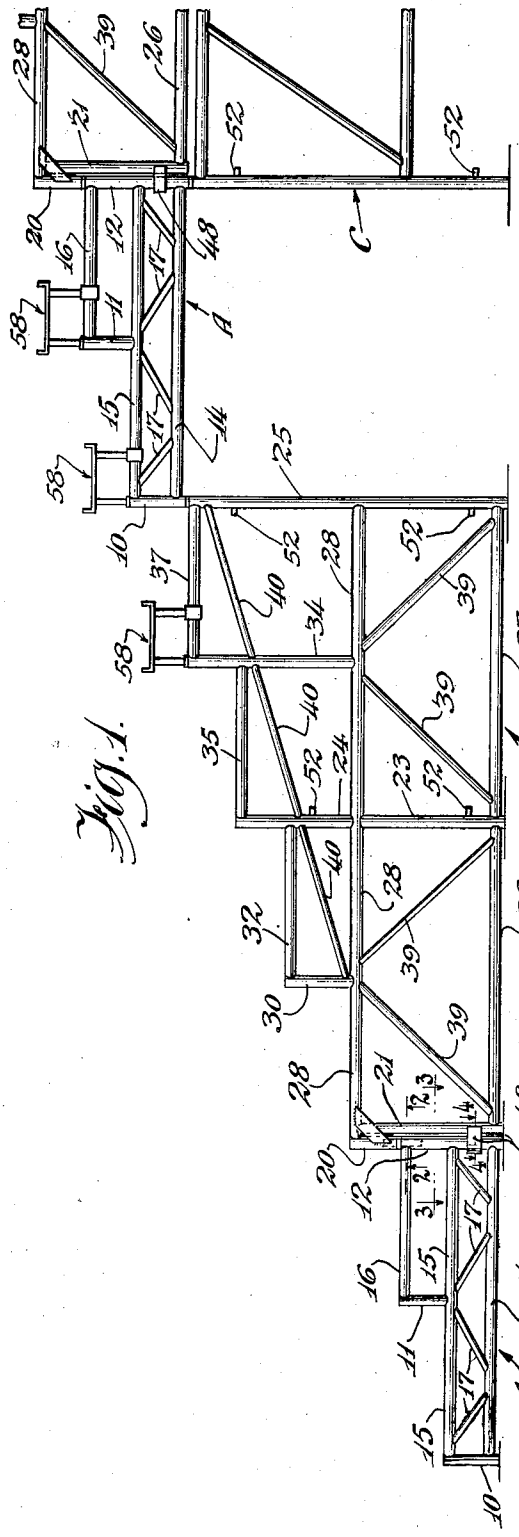


Fig. 1.

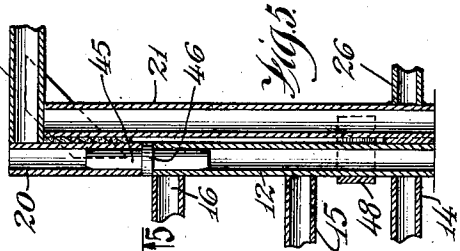


Fig. 5.

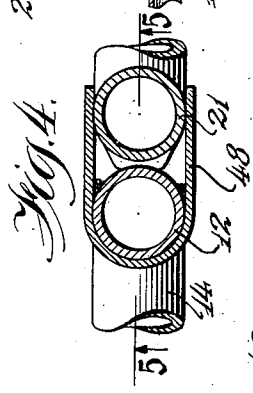


Fig. 4.

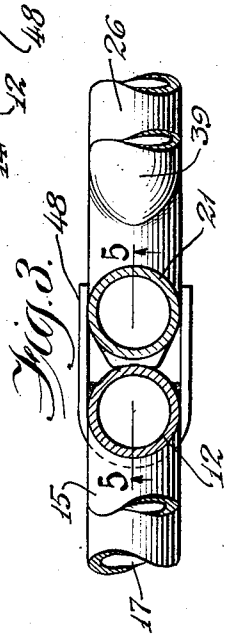


Fig. 3.

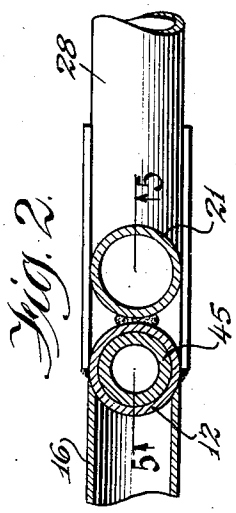


Fig. 2.

Inventors:
John F. Roney
Richard W. Page
By Eugene D. Simpson
Attorney.

June 23, 1942. R. W. PAGE ET AL 2,287,561

PORTABLE GRANDSTAND

Filed July 29, 1940 3 Sheets-Sheet 2

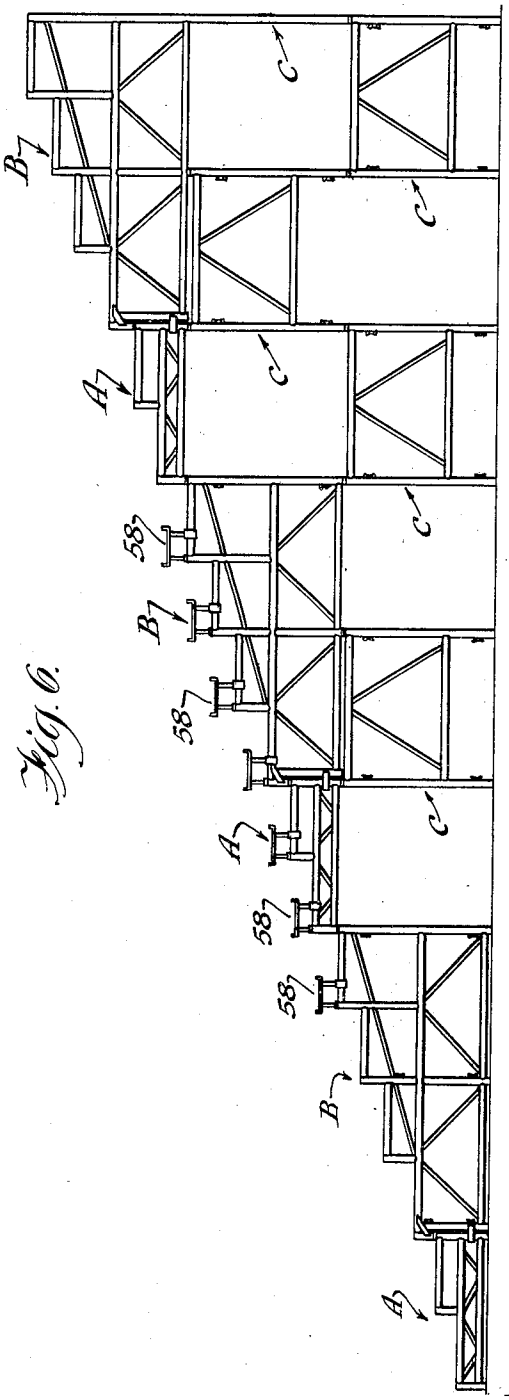


Fig. 6.

Inventors:
John F. Roney
Richard W. Page
By Eugene A. Simpson
Attorney.

June 23, 1942. R. W. PAGE ET AL 2,287,561

PORTABLE GRANDSTAND

Filed July 29, 1940 3 Sheets-Sheet 3

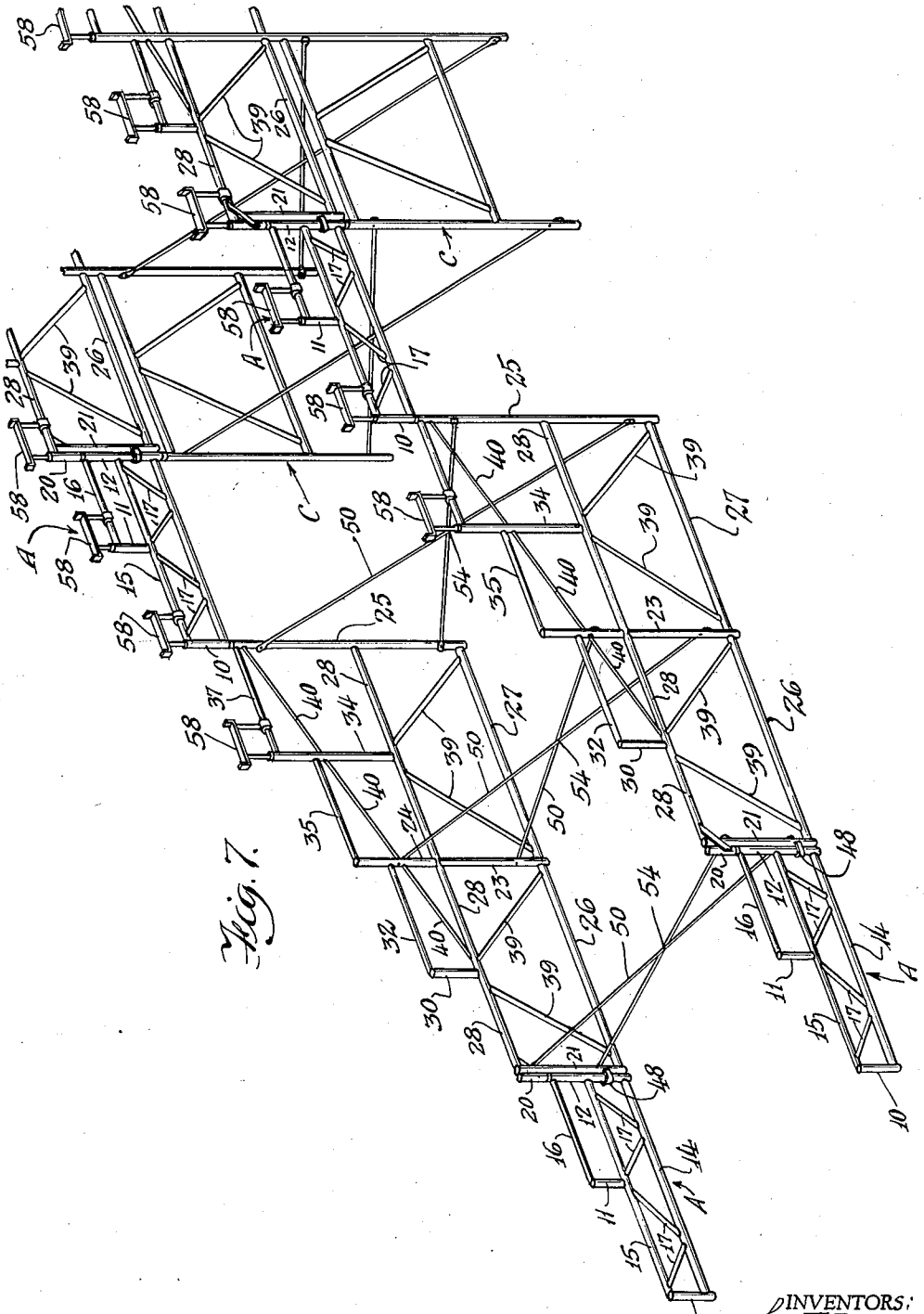


Fig. 7.

INVENTORS:
John F. Roney
Richard W. Page
Eugene H. Simpson
Attorney.

BY

Patented June 23, 1942 2,287,561

UNITED STATES PATENT OFFICE

2,287,561

PORTABLE GRANDSTAND

Richard W. Page and John F. Roney,
Hollywood, Calif.

Application July 29, 1940, Serial No. 348,084

5 Claims. (Cl. 189—2)

This invention relates to portable grandstands or bleachers and more particularly to a grandstand or bleacher that can be built to any desired height.

Portable bleachers and grandstands heretofore devised have been constructed to be used for a certain predetermined height and are not adapted to have sections added in height to increase the seating capacity.

One object of the present invention is to devise a grandstand or bleacher construction which can be increased in height at will by the addition of sections thereto.

Another object is to devise a grandstand or bleacher which will be strong and rigid.

A further object is to devise a grandstand or bleacher which may be erected easily and quickly.

A further object is to devise a bleacher or grandstand in which the danger of collapse is reduced to a minimum.

A further object is to devise a portable bleacher in which the main load bearing elements are in pure compression.

Other objects will be apparent from the following description.

In the drawings:

Fig. 1 is a side elevational view of a portable grandstand or bleacher embodying the present invention;

Figs. 2, 3 and 4 are cross-sections on the lines 2—2, 3—3, and 4—4 respectively, of Fig. 1, looking in the directions of the arrows;

Fig. 5 is a cross-section on the line 5—5 of Figs. 2, 3 and 4, looking in the direction of the arrows;

Fig. 6 is a side elevational view similar to Fig. 1, but showing the grandstand or bleacher built to a greater height; and

Fig. 7 is a perspective view of a complete grandstand or bleacher unit.

Referring to the drawings, in which like numerals indicate like parts throughout the several views, the grandstand or bleacher is composed of three separate types of frames, lettered A, B and C, and through the proper use of the three frames a portable grandstand may be built to any height.

As shown, the frame A is made of tubular material and comprises two seating levels. Referring to Fig. 1 it will be seen that the frame A comprises a forward vertical tubular post 10, a central tubular post 11 and a rearward tubular post 12 of approximately the combined heights of the posts 10 and 11. The post 10 and the post 12 are connected at the lower ends thereof by a horizontal tubular brace 14, while the top of the post 10 is connected to approximately the center of the rear post 12 by a horizontal tubular support 15. The post 11 is integrally connected to the center of the support 15 and extends vertically, parallel to the post 12. The top portions of the posts 11 and 12 are joined by a second horizontal support 16 which is integrally connected between the posts.

A plurality of stiffening braces 17 join the brace 14 and the support 15 to transmit stress therebetween.

The frame B, as shown in Fig. 1, has four seating levels, and comprises a forward post 21, having a connector 20, a center post 23—24, and a rear post 25. The forward post 21, the center post 23 and the rear post 25 are connected adjacent the lower ends by a lower brace 26—27 and are connected adjacent the top of the forward post 21 by a support 28 which extends parallel to the brace 26—27. A post 30 is fixed to the center of the forward half of the support 28 and extends vertically to a point midway between the top of the post 21 and the top of the post 24. A horizontal support 32 is fixed between the top of the post 30 and the center of the post 24 and forms the second level for planking, the first level being formed by the forward quarter of the horizontal support 28. A rear central post 34 is fixed to the center of the rear half of the support 28 and extends vertically to the same elevation as the top of the post 25.

A second horizontal support 35 joins the top of the post 24 with the post 34 and forms the third level for planking. The fourth planking level is formed by a third horizontal support 37 extending and fixed between the tops of the posts 34 and 25. Suitable shear braces 39 and 40 stiffen the frame B and form it into a rigid integral unit.

The forward ends of the frames B are joined to the rear of the frames A by pins 45. The pins 45 (Fig. 5) are of such diameter as to fit snugly within the posts 12 of the frame A and the connectors 20 of frame B, and have a collar 46 fixed thereon which is engageable with the top of the post 12 and the bottom of the connector 20.

A U-shaped guide 48 is welded to the lower portion of the post 12 and has the open ends engageable with the lower end of the posts 21 to maintain the frames A and B in the same plane.

The frame C is used in connection with the frames A and B in a manner set forth below to build the grandstand to any desired height. The

frame C is preferably a standard scaffold unit of the type more fully described and set forth in the U. S. patent to Reinhold A. Uecker, Patent No. 2,043,498, issued June 9, 1936.

The frame C is made the same height as the post **25** of the frame B and is adapted to support the posts of either the frames A or B through pin couplings **45** heretofore described.

To construct a grandstand or bleacher two sets of frames are placed parallel to and spaced from each other, as best seen in Fig. 7, and are connected by cross braces **50** which are joined to the frames B and C through bolts **52** welded on the frames B and C. The cross braces **50** are connected together adjacent their centers by pivots **54** in a manner described in the aforesaid Uecker patent.

Planking is laid on the supports **15, 16, 28, 32, 35** and **37** and chairs placed on the planks to complete the structure.

In order to convert the grandstand into a bleacher construction a removable bracket **58** may be added at will. This bracket will be more fully described and claimed in a co-pending application of Uecker, Beatty and Oertle, Serial No. 350,850 filed Aug. 3, 1940.

Having thus described the invention it will be realized that it is susceptible to various changes and modifications and it is not desired to limit the invention to the precise form herein shown and described but only by the scope of the appended claims.

The invention is hereby claimed as follows:

1. In a grandstand of the character described, a first unitary rigid frame comprising a front post, a rear post, said rear post being substantially longer than said front post, and a step construction joining said posts, a second unitary rigid frame having a front post, a rear post, said rear post being substantially longer than said front post, and a step construction joining said second front post with said second rear post, the rear post of said first frame and the front post of said second frame being positioned adjacent to each other, and means to connect the upper end of said first named rear post with the second named front post.

2. In a grandstand of the character described, a first unitary rigid frame comprising a front post, a rear post spaced from said front post and being substantially longer than said front post, a horizontal brace joining said posts, a step construction joining said posts above said horizontal brace, a second unitary rigid frame having a front post, a rear post, said rear post being spaced from said front post and substantially longer than said front post, a horizontal brace joining said posts, and a step construction joining said posts above said brace, the rear post of said first frame and the front post of said second frame being positioned adjacent each other, and means to connect the upper end of said first named rear post with the second named front post.

3. A grandstand of the character described comprising a plurality of frames, each frame having a front post and a rear post, the length of the rear post being successive integral multiples of the length of the shortest rear post, a scaffold end frame of a height equal to the length of the longest rear post, means to connect the front post of each frame to the rear post of the frame having the next smallest rear post, and means to connect and support a frame of the type having a shortest rear post between the top of the longer rear post and the top of the scaffold end frame.

4. In a grandstand of the character described, a first unitary **frame** comprising a front post, a rear post, **said** rear post being substantially longer than **said** front post, a horizontal support joining said **posts** adjacent the upper end of said front post, and a horizontal brace joining said posts adjacent the lower end of said front post, a second unitary rigid frame having a front post, a rear post, the rear post being substantially longer than said front post, a horizontal support joining said posts adjacent the upper end of said front post, and a horizontal brace joining said posts adjacent the lower end of said front post, the rear post of said first frame and the front post of said second frame being positioned adjacent each other, and means to connect the upper end of said first named rear post with the second named front post.

5. In a grandstand of the character described a first unitary rigid frame comprising a front post, a rear post, said rear post being substantially longer than said front post, and a step construction joining said posts; a second unitary rigid frame comprising a front post, a rear post, said rear post being substantially longer than said front post, a step construction joining the posts of said second frame, the rear post of said first frame and the front post of said second frame being positioned adjacent each other, and a connector carried by the front post of said second frame and superimposed on the rear post of said first frame to join the frames into a continuous series of steps.

RICHARD W. PAGE.
JOHN F. RONEY.