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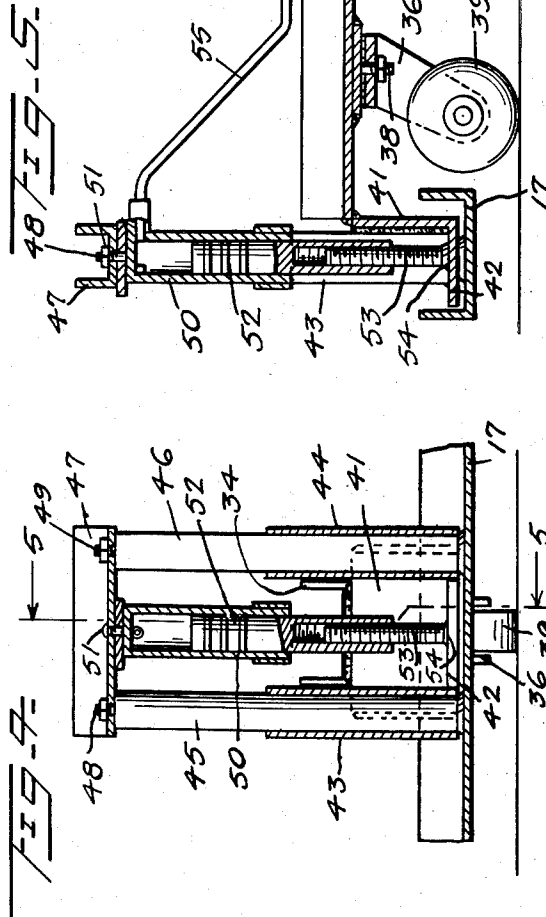
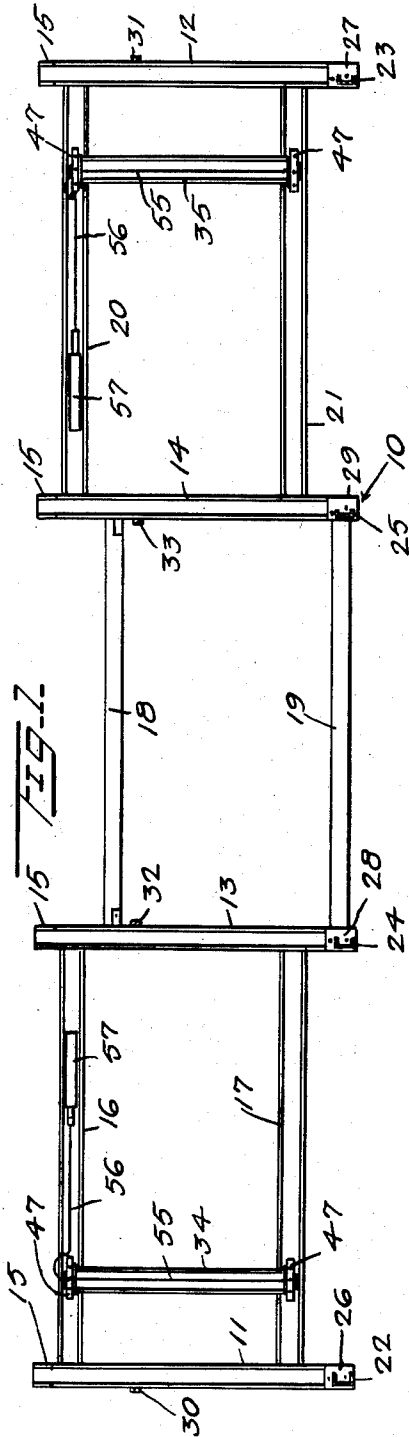
D. E. VANCE

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MOVABLE FOLDING BLEACHER

Filed Nov. 19, 1956

2 Sheets-Sheet 1



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MOVABLE FOLDING BLEACHER

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1 Claim. (Cl. 20—1.126)

The present invention relates to movable folding bleachers, and more particularly to structures attached to foldable bleachers for raising them onto wheels for transport from place to place.

The primary object of the invention is to provide a bleacher structure having wheels on which the bleacher can be elevated for moving the bleacher when in folded position from place to place.

Another object of the invention is to provide a roll-away bleacher unit having tracks on which the bleacher wheels can rest when in folded position.

A further object of the invention is to provide a roll-away foldable bleacher construction which is inexpensive to manufacture, simple to use, and which is durable in rough service.

Other objects and advantages will become apparent in the following specification when considered in the light of the attached drawings, in which:

Figure 1 is a plan view of the elevating frame.

Figure 2 is an enlarged fragmentary plan view of one end of the elevating frame shown partially in section.

Figure 3 is a transverse cross-section taken along the line 3—3 of Figure 2, looking in the direction of the arrows.

Figure 4 is a fragmentary horizontal cross-section taken along the line 4—4 of Figure 2, looking in the direction of the arrows.

Figure 5 is an enlarged fragmentary transverse cross-section taken along the line 5—5 of Figure 4, looking in the direction of the arrows.

Figure 6 is a fragmentary end elevation of the elevating frame with the bleacher construction removed.

Figure 7 is a fragmentary transverse cross-section taken along the line 7—7 of Figure 2, looking in the direction of the arrows.

Referring now to the drawings in detail wherein like reference characters indicate like parts throughout the several figures, the reference numeral 10 indicates a portable bleacher construction for bleachers of the type illustrated in Patent No. 2,147,564, issued February 14, 1939. The specific folding bleacher framework has not been shown in the present application since it in no way affects the present invention.

The portable bleacher 10 includes a channel track 11 at one end thereof and a second channel track 12 at the opposite end thereof. A pair of spaced channel tracks 13 and 14 are arranged in equispaced relation to the channel tracks 11 and 12 and all of the channel tracks 11, 12, 13 and 14 are arranged parallel to each other. The channel tracks 11, 12, 13 and 14 are chamfered at 15 at their forward ends.

A pair of spaced apart parallel longitudinally extending frames 16 and 17 extend between and are secured to the tracks 11 and 13, as best seen in Figure 1. A pair of longitudinally extending spaced parallel frames 18 and 19 extend between the tracks 13 and 14 and have their opposite ends secured thereto. A pair of spaced apart parallel longitudinally extending frames 20 and 21

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extend between and are secured at opposite ends to the tracks 12 and 14. The channel tracks 11, 12, 13, 14 along with the frames 16, 17, 20, 21 and the frames 18, 19 form a horizontal substantially rigid framework for supporting a folding bleacher structure when in folded position.

A plurality of upright posts 22, 23, 24 and 25 are provided, respectively, with feet 26, 27, 28 and 29 which rest on and are secured to the rear ends, respectively, of the tracks 11, 12, 13 and 14. The upright posts 22, 23, 24 and 25 form the rear upright members of the folding structure illustrated in the aforementioned patent. The upright posts 22, 23, 24 and 25 are provided with angularly extending braces 30, 31, 32 and 33, respectively, which extend downwardly to the tracks 11, 12, 13 and 14, respectively, as best seen in Figure 6.

A frame 34 is positioned adjacent to the track 11 in spaced parallel relation thereto extending from a point overlying the frame 16 to a point overlying the frame 17, as best seen in Figures 2 and 3. A second frame 35 is positioned adjacent to the track 12 in parallel spaced relation thereto and extending from a point overlying the frame 20 to a point overlying the frame 21. The frames 34 and 35 are identical in every respect, and it should be understood that the following detailed description of the frame 34 and its attachment to the frames 16 and 17 refers also to a duplicate structure relating the frame 35 to the frames 20 and 21.

The frame 34 is provided with caster yokes 36 and 37 adjacent opposite ends thereof and secured to the frame 34 by pivot bolts 38. Caster wheels 39 and 40 are journaled, respectively, in the caster yokes 36 and 37 and engage the ground or floor in supporting relation to the frame 34. Each end of the frame 34 has a vertically depending flat plate 41 welded to the end thereof carrying a horizontal plate 42 in outwardly projecting relation on its lower end.

A pair of spaced apart upright parallel tubular guides 43 and 44 are welded to the opposite sides of the plate 41 and to the opposite side edges of the plate 42. A pair of cylindrical guide pins 45 and 46 are arranged in spaced parallel relation with their lower ends welded to the frame 17 and extending, respectively, through the tubular guides 43 and 44. A header 47 extends in bridging relation across the tops of the cylindrical guide pins 45 and 46 and is secured thereto by bolts 48 and 49, respectively, as best seen in Figure 4.

A hydraulic ram 50 has one end thereof secured by securing pins 51 to the center of the header 47 with the ram 50 depending therefrom in parallel relation to the guide pins 45 and 46.

A piston 52 is arranged for reciprocation in the ram 50 and is provided with a threadably adjustable piston rod 53 projecting from its lower end. The piston rod 53 has its lower end welded as at 54 to the center of the plate 42 so that when hydraulic pressure is applied to the piston 52 the header 47 will move upwardly with respect to the plate 42 thus raising the frame 17 with respect to the frame 34 so that the frame 17 will be supported on the wheels 39 and 40.

A tubular conduit 55 extends between the rams 50 at opposite ends of the frame 34, and a conduit 56 extends from the hydraulic rams 50 to a hand operated hydraulic pump 57 mounted on the frame 16, as best seen in Figure 1.

Thus it can be seen that by operating the pump 57 at each end of the portable bleacher 10, the wheels 39 and 40 can be caused to support the portable bleacher 10 so that it can be transported from place to place. The portable bleacher 10 is, as illustrated in the aforementioned patent, foldable horizontally and is supported

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on a plurality of wheels 58 which are journaled in yokes 59 secured to the bottom of the portable bleacher 10.

In the use and operation of the invention the tracks 11, 12, 13 and 14 are engaged with the floor and the bleacher seat supporting wheels 58 are rolled off the tracks 11, 12, 13 and 14 onto the floor to open the bleacher seats for use.

When it is desired to store the bleacher seats at the close of the game or close of the season, the wheels 58 are all rolled rearwardly onto the tracks 11, 12, 13 and 14. With the wheels 58 all retracted onto the tracks 11, 12, 13, and 14, the hand pumps 57 are actuated to lift the tracks 11, 12, 13 and 14 with respect to the frames 34, 35, respectively, to support the tracks 11, 12, 13 and 14 and the bleacher seats on the wheels 39, 40 for movement to storage.

Under normal folding and unfolding operation of the folding bleachers the tracks 11, 12, 13 and 14 are in lowered position in engagement with the floor with the upright posts 22, 23, 24, and 25 arranged adjacent to a side wall of the room. The folding bleachers are unfolded with the wheels 58 rolling outwardly on the tracks 11, 12, 13 and 14 and forwardly therefrom across the floor until the folding bleachers are completely open. The bleachers are folded with the wheels 58 rolling across the floor and then on to the tracks 11, 12, 13 and 14. When the space occupied by the folded bleachers is required for other uses, then the tracks 11, 12, 13 and 14 are elevated on to the wheels 39, 40 to make the bleacher unit as a whole portable to permit its movement to a storage room.

Having thus described the preferred embodiment of the invention, it should be understood that numerous structural modifications and adaptations may be resorted to without departing from the scope of the appended claims.

What is claimed is:

In combination a foldable bleacher of the type having a plurality of uprights and a plurality of wheeled supporting members positioned forwardly therefrom, and a portable support therefor comprising a framework including a plurality of spaced parallel tracks receiving and sup-

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porting said wheeled supporting members with said foldable bleacher in folded position, said uprights having their lower ends secured to said tracks at the rear ends thereof, a plurality of caster wheels, and means for elevating said framework and said foldable bleacher in folded position thereon with respect to said caster wheels whereby said framework and said folded bleacher are supported on said caster wheels, said means for elevating said framework comprising a horizontal frame at each end of said framework, a pair of caster wheels supporting each said horizontal frame, a pair of upright parallel cylindrical guides secured to each end of each said frame, guide pins fixed to said framework slidably received in said guides, a transverse plate extending between each pair of guide pins, a hydraulic ram secured at its upper end to each transverse plate, an adjustable screw carried by the other end of each ram, means mounting each screw on said frame, and an independent hydraulic pump for each pair of rams.

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