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V. J. MORFORD ETAL

3,230,907

PORTABLE BLEACHER UNIT

Filed Aug. 22, 1962

2 Sheets-Sheet 1

FIG. 1

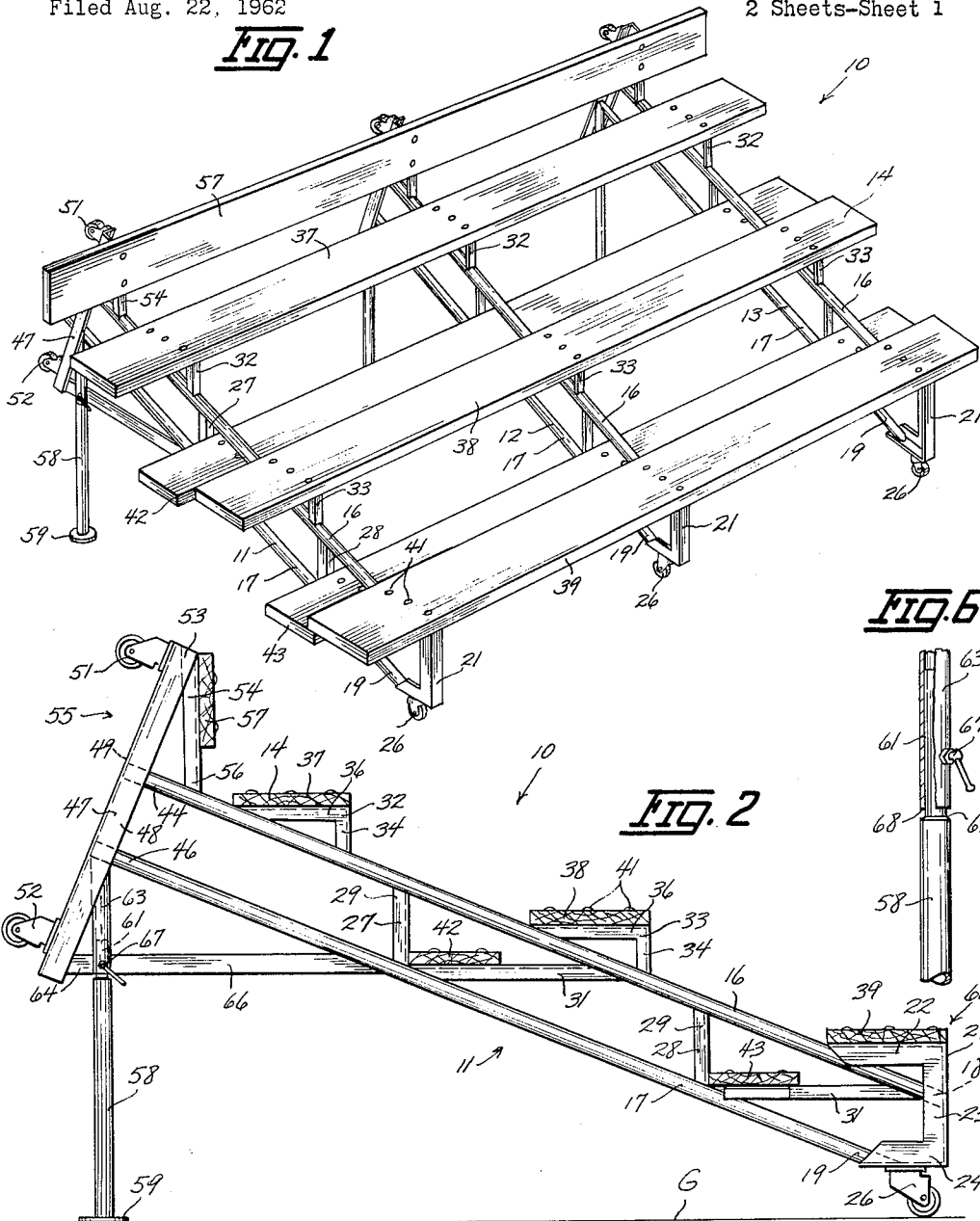


FIG. 6

FIG. 2

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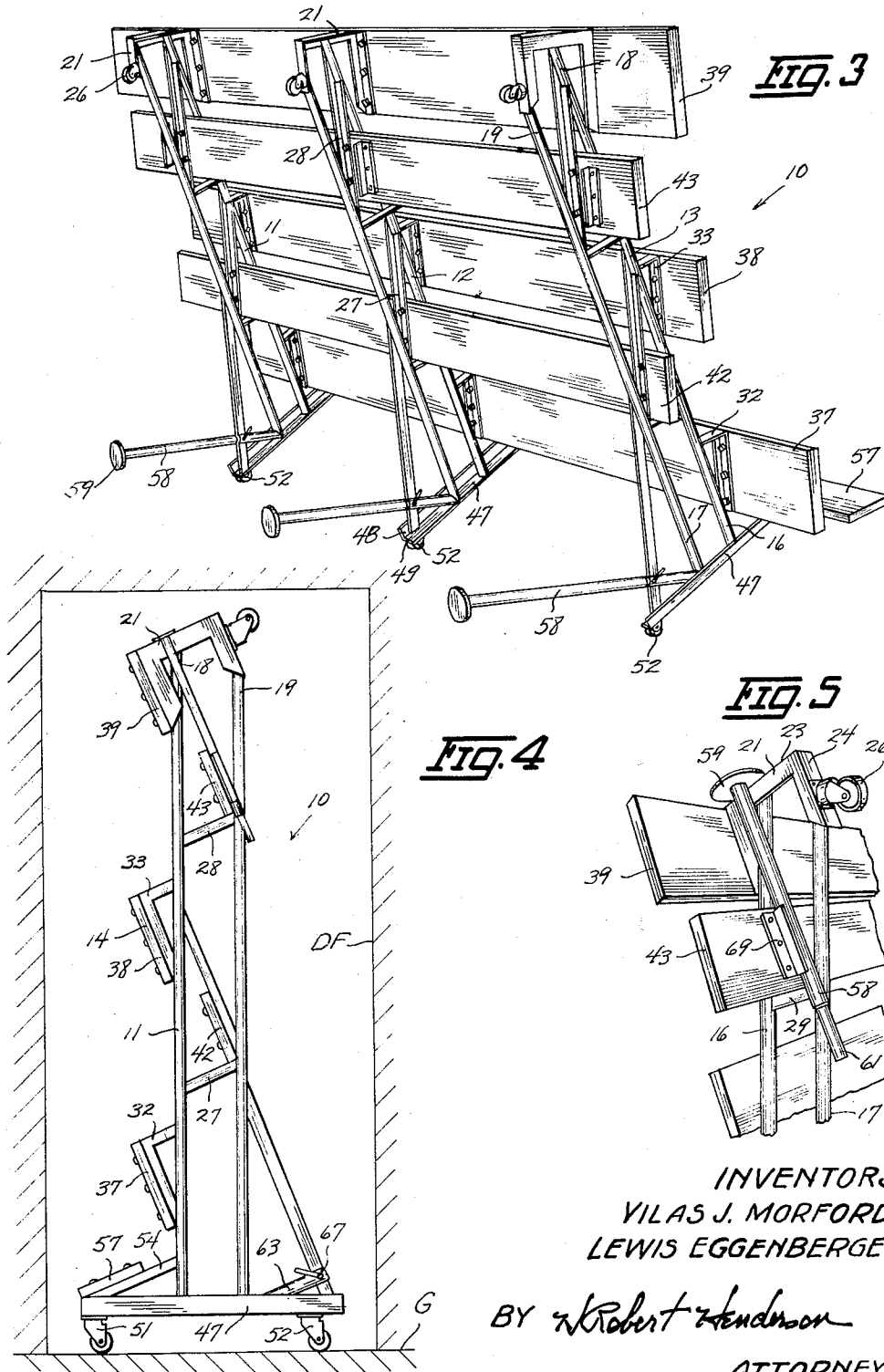
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PORTABLE BLEACHER UNIT

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1 Claim. (Cl. 108—50)

This invention relates to bleachers for seating purposes, and particularly to portable bleachers.

All of us at one time or another have stood in the third or fourth row of a group of people, or even in the second row but behind a taller person, and have been unable to see a demonstration being put on in front of us for our benefit. And while desiring to be comfortably seated to more clearly see and enjoy the demonstration, we also realize at the same time that the group sponsoring and putting on the demonstration cannot afford expensive chairs or permanent or knock-down type bleachers.

Furthermore, we appreciate that in many instances, present facilities do not lend themselves to chairs or bleachers. In many of our classrooms where space is at a premium, permanent bleachers cannot be built, and the knock-down type bleachers are too time consuming to deal with. We have found, therefore, a definite and compelling need for a bleacher which can readily and quickly be brought through a conventional door frame into a classroom, for example, and set up in a matter of even seconds. And more so, which can be removed from the room as expeditiously as it was brought in.

It is an object, therefore, of this invention to provide a new and novel portable bleacher.

It is another object of this invention to provide a portable bleacher capable of comfortably seating approximately twenty persons, which can readily be moved through an existing conventional door frame, positioned, used, repositioned, and removed through the door frame, and with a change in position of but one element.

Another object of this invention is to provide a bleacher unit capable of seating a plurality of persons with a device cooperable with the frame of the bleacher for rendering the bleacher easily portable upon changing the position thereof.

Yet another object of this invention is the provision of a portable bleacher employing an elongated leg member when set upon its seating position, and which member is readily removed and repositioned when the bleacher is changed to its transport position, providing a reduction in the transport width of the bleacher.

Still another object of this invention is to provide a portable bleacher capable of attaining the above mentioned objectives which is economical to manufacture, easy to service, and effective in operation.

These objects and other features and advantages of this invention will become readily apparent from the following description when taken in conjunction with the accompanying drawings, wherein:

FIG. 1 is a perspective view of our portable bleacher shown in its seating position;

FIG. 2 is an enlarged side elevational view of the portable bleacher of FIG. 1, certain of the parts shown in dotted lines for illustrative clarity;

FIG. 3 is a perspective view of the portable bleacher from the rear and one side thereof, with the bleacher in a tipped position substantially halfway between the seating position and the transport position;

FIG. 4 is an end elevational view of the bleacher in a transport position, showing it passing through a door frame;

FIG. 5 is an enlarged perspective fragmentary view

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showing the position of a leg during transport of the bleacher; and

FIG. 6 is an enlarged fragmentary detail view of the position of the upper portion of the leg during use thereof in the seating position of the bleacher, a portion of the socket therefor broken away for clarity of illustration.

Referring now to the drawings, a preferred embodiment of our portable bleacher is indicated generally at 10 in FIG. 1 and is depicted therein in its seating position. The bleacher 10 is comprised basically of a trio of transversely spaced, parallel frames 11, 12 and 13 of identical construction, and which frames are interconnected by a plurality of straight, flat boards or planks 14 designated more particularly hereinafter.

As the frames are identical, only one will be described, with like reference numerals indicating like parts. Each frame includes a pair of elongated tubular members 16 and 17 (FIG. 2) disposed parallel to each other and in vertical alignment. The common lower ends 18 and 19, respectively, of the members 16 and 17 are secured to and embraced by a U-shaped element 21 (FIG. 2).

The element 21 includes an upper portion 22 disposed substantially horizontal over the upper member end 18, when the bleacher 10 is in the seating position. It further includes a middle vertically upstanding portion 23, and a lower substantially horizontal portion 24 extended beneath the lower member end 19. A caster wheel device 26 is mounted on the underside of the lower portion 24 for aiding the maneuverability of the bleacher 10.

Intermediate the tubular members 16 and 17, a pair of L-shaped, angle iron brackets 27 and 28 are secured thereto, as best illustrated in FIG. 2. Each bracket 27 and 28 includes a vertical leg 29 and a horizontal leg 31, both of which are secured, as by welding, at opposite ends to the respective tubular members 16 and 17. Additionally, another pair of L-shaped, angle iron brackets 32 and 33 (FIG. 2) are secured to the upper member 16 and on the upper side thereof. Each bracket 32 and 33 has a vertical leg 34 and a horizontal leg 36.

To provide support for persons using the bleacher 10, the planks 14 are provided as follows. Three planks 37, 38 and 39 (FIGS. 1 and 2) are secured by carriage bolts 41 to the three horizontal legs 22, 36, 36 (FIG. 2) of each group of brackets for each frame the planks extend the entire transverse width of the bleacher 10, and provide seat support. Two planks 42 and 43 are secured also by carriage bolts 41, to the two horizontal legs 31, 31 of each group of intermediate brackets for each frame, and also extend the entire transverse width of the bleachers 10.

The plank 42 (FIG. 2) serves as a foot rest for the person seated on plank 37, and the plank 43 serves as a foot rest for the person seated on plank 38. The person seated on plank 39 places his feet upon the ground, indicated by the letter G in FIGS. 2 and 4. Referring to FIG. 2, it will readily be seen that planks 37 and 42, and also planks 38 and 43, are disposed in parallel planes which extend angularly to the plane of the tubular members 16 and 17, and to the longitudinal axis of each frame 11, 12 and 13. At the common upper ends 44 and 46 (FIG. 2), respectively, of each pair of members 16 and 17, an elongated angle iron support 47 is secured thereto which extends in a plane at right angles to the longitudinal axis of each frame.

To function as a means for supporting the bleacher 10 in the upright transport position of FIG. 4, the support 47 extends laterally beyond each side of both members 16 and 17. One leg 48 (FIG. 2) of the support 47 is contiguous with and disposed parallel to the sides of the members 16 and 17, whereas the other leg 49 is flat

against the bottoms of the upper ends 44 and 46. A pair of caster wheels 51 and 52 are secured in spaced relation to opposite ends of the support 47 on the side of leg 49 opposite the junction thereof with the member ends 44 and 46.

At the upper end 53 (FIG. 2) of each support 47, a straight section 54 of angle iron is secured at its upper end thereto and is disposed vertically with the lower end 56 secured to the tubular member upper end 44. The trio of sections 54 provide a back stop support for a plank 57 (FIGS. 1 and 2), which functions as a back rest for a person seated on the upper plank 37.

For supporting in an elevated position the end 55 (FIG. 2) of each frame opposite the end 60 thereof, supported on the ground G by the caster wheel 26 (FIG. 2), an elongated leg 58 is provided. The leg 58 has a circular foot 59 at one end, and has a stub section 61 (FIGS. 2 and 6) of a smaller diameter at the other end, a shoulder 62 formed thereby. Each frame 11, 12 and 13 includes a tubular socket 63 (FIGS. 2 and 6) secured at its upper end to the junction of the lower tubular member 17 and the support 47.

The socket 63 is supported by a pair of braces 64 and 66 (FIG. 2) which are secured respectively to the support 47 and the member 17. Each socket 63 is provided with a lock bolt 67 (FIG. 6) and a handle therefor for tightening against the leg stub section 61. By this arrangement, should the bleacher 10 be placed on uneven ground, the three legs 58 can be individually adjusted as to their respective length of extension from the socket 63. As illustrated in FIG. 6, the leg 58 is locked relative to the socket 63 with the shoulder 62 spaced away from the end 68 of the socket. Upon loosening the lock bolt 67, the stub section 61 could be pushed further inwardly of the socket 63 until the shoulder 62 engaged the socket end 68.

It will be noted by referring to FIG. 2, that when the leg 58 of each frame is inserted in the socket 63 for elevating the frame upper end 55, the leg 58 is disposed in a plane which extends perpendicular to the parallel planes of the planks 37 and 42, and of the planks 38 and 43. When not in use as illustrated in FIG. 2 each leg 58 is removed from the socket 63 and supported on its respective frame in a manner best illustrated in FIG. 5. The foot 59 is rested on the middle section 23 of the bracket 21, and the leg proper extends downwardly to a rest position against the under surface of the plank 43 and up against the horizontal leg 31 (hidden from view in FIG. 5) of the bracket 28, the vertical leg 29 of which is seen in FIG. 5.

To provide lateral support on the side of the leg 58 opposite the bracket leg 31, a short section 69 (FIG. 5) of angle iron is secured to the under surface of the plank 43. It will therefore be appreciated that each leg 58 may be quickly changed from a storage and transport position of FIG. 5 to a frame elevating position of FIGS. 1 and 2.

When the bleacher 10 is not in use it is supported on the support 47 and caster wheels 51 and 52, with the frames upstanding in a vertical position best shown in FIG. 4. In the particular embodiment illustrated herein, the length of all planks 14 is ten feet, the upper tubular members 16 are six feet in length, and the lower tubular members 17 are five feet ten inches. The length of each support 47 is two feet four inches, and each leg 58 has an overall length of approximately two feet two inches.

The overall height of the bleacher 10 when in the transport and storage position of FIG. 4 is approximately six feet seven inches. As the average dimension of the door frame at most universities and colleges is seven feet in height and three feet in width, it will be readily appreciated that with the legs 58 removed from their supporting position, the bleacher 10 can easily pass through

these door frames, such as the one depicted at DF in FIG. 4.

When the bleacher 10 has been wheeled to the area where it is needed, the three legs 58 are removed from their transport positions (FIG. 4) and inserted into and locked in their sockets 63. Then the bleacher 10 is tilted clockwise as viewed in FIG. 3 about the casters 52 and the legs 58 until the front casters 26 (FIG. 2) engage the ground. The bleacher 10 is then ready for use, the particular bleacher described herein being adapted to comfortably support eighteen to twenty-one adults, depending upon their size.

After the bleacher 10 has served its purpose and it is desirable to store the bleacher in another area, one method of returning it to its upright position is to lift the front end 60 of the bleacher upwardly about the feet 59 of the legs 58, the latter acting as fulcrums, until first the caster wheels 52 (FIG. 3) and then the caster wheels 51 engage the ground. When the bleacher 10 is fully supported by the support 47 and the caster wheels 51 and 52 therefor, the legs 58 are removed and placed as best illustrated in FIG. 5. The bleacher can thus be moved back through the door frame DF (FIG. 4) to a place of storage in its upright position. Another and preferred method of returning the bleacher 10 to the upright position for storage is to lift up the rear end 55 thereof sufficient to remove the legs 58, then lowering the bleacher until the lower ends of the supports 47 engage the ground. The front end 60 of the bleacher is then lifted upwardly about the support lower ends until all caster wheels 52 and 51 engage the ground and the bleacher is upright as shown in FIG. 4.

In summary, we have provided an economical portable bleacher readily stored and movable in a space-saving position, and readily placed in a position for supporting a plurality of persons, the construction providing maximum stability to the bleacher.

Some changes may be made in the construction and arrangement of our portable bleacher unit without departing from the real spirit and purpose of our invention, and it is our intention to cover by our claims, any modified forms of structure or use of mechanical equivalents which may be reasonably included within their scope.

We claim:

A portable bleacher comprising in combination:

- at least a pair of parallel, transversely spaced frames each of which includes a pair of parallel, elongated tubular members and a plurality of brackets certain of which are secured between said members and certain others are secured to one only of said members on one side only of each said frame, said members and said brackets for one said frame lying in one plane;
- a plurality of straight, flat elements secured to said brackets and extended between said frames in at least a pair of parallel planes;
- a U-shaped bracket embracing common first ends of each pair of said members;
- a caster wheel device secured to said bracket for engaging the ground;
- an elongated support bar secured at its center to common second ends of each pair of said members and extended laterally from said second ends at substantially right angles to said members;
- a pair of caster wheel devices secured to said support bar for engaging the ground in a position of said bleacher wherein said former caster wheel device is spaced from the ground; and
- a leg member releasably secured to each said support bar for engaging the ground simultaneously with said former caster wheel device.

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