Aug. 17, 1965 R. M. FENNER ETAL 3,201,119

PORTABLE SUPPORTING STRUCTURE FOR GYMNASTIC EQUIPMENT

Filed Nov. 30, 1962 3 Sheets-Sheet 1

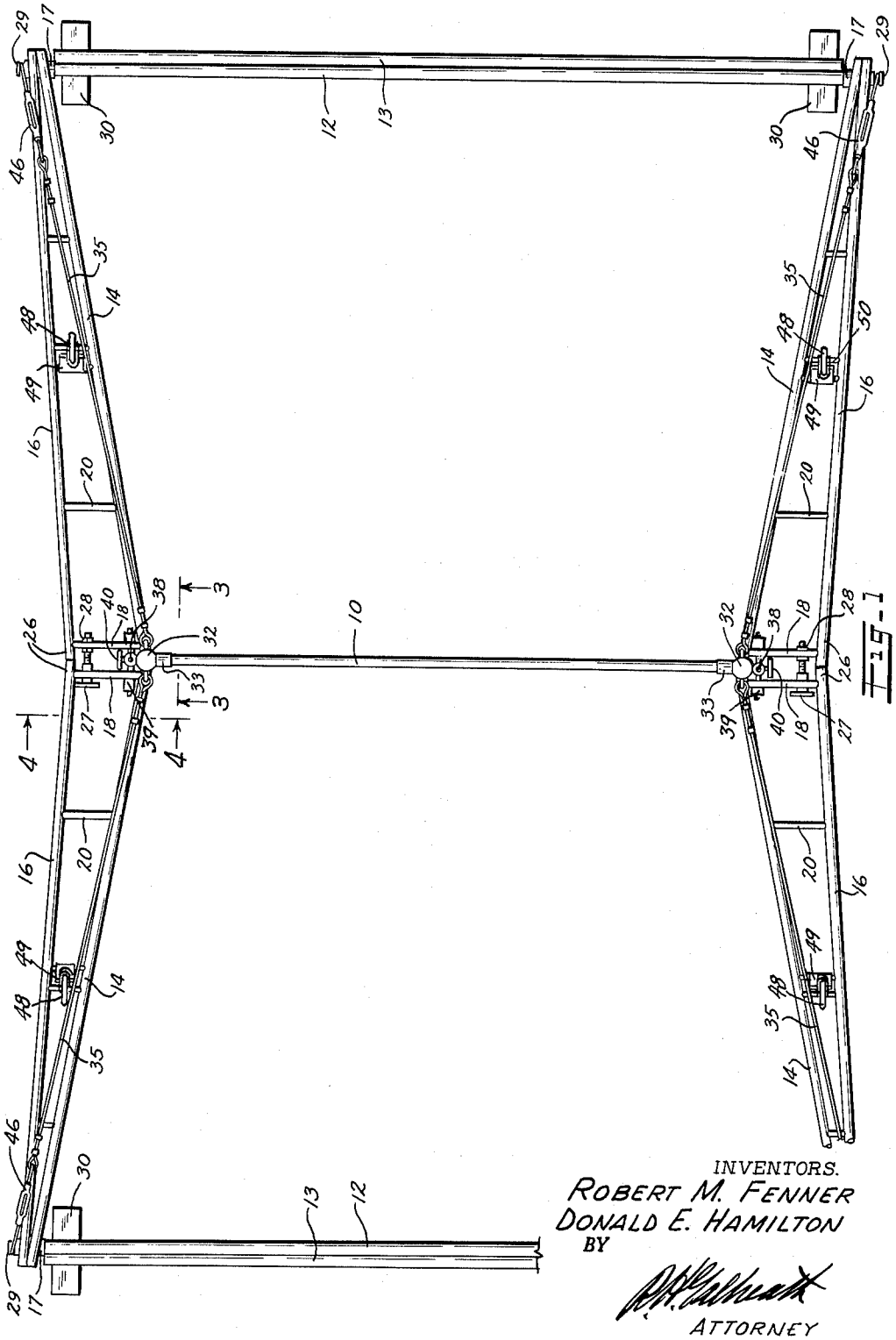

FIG. 1

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3 Sheets-Sheet 2

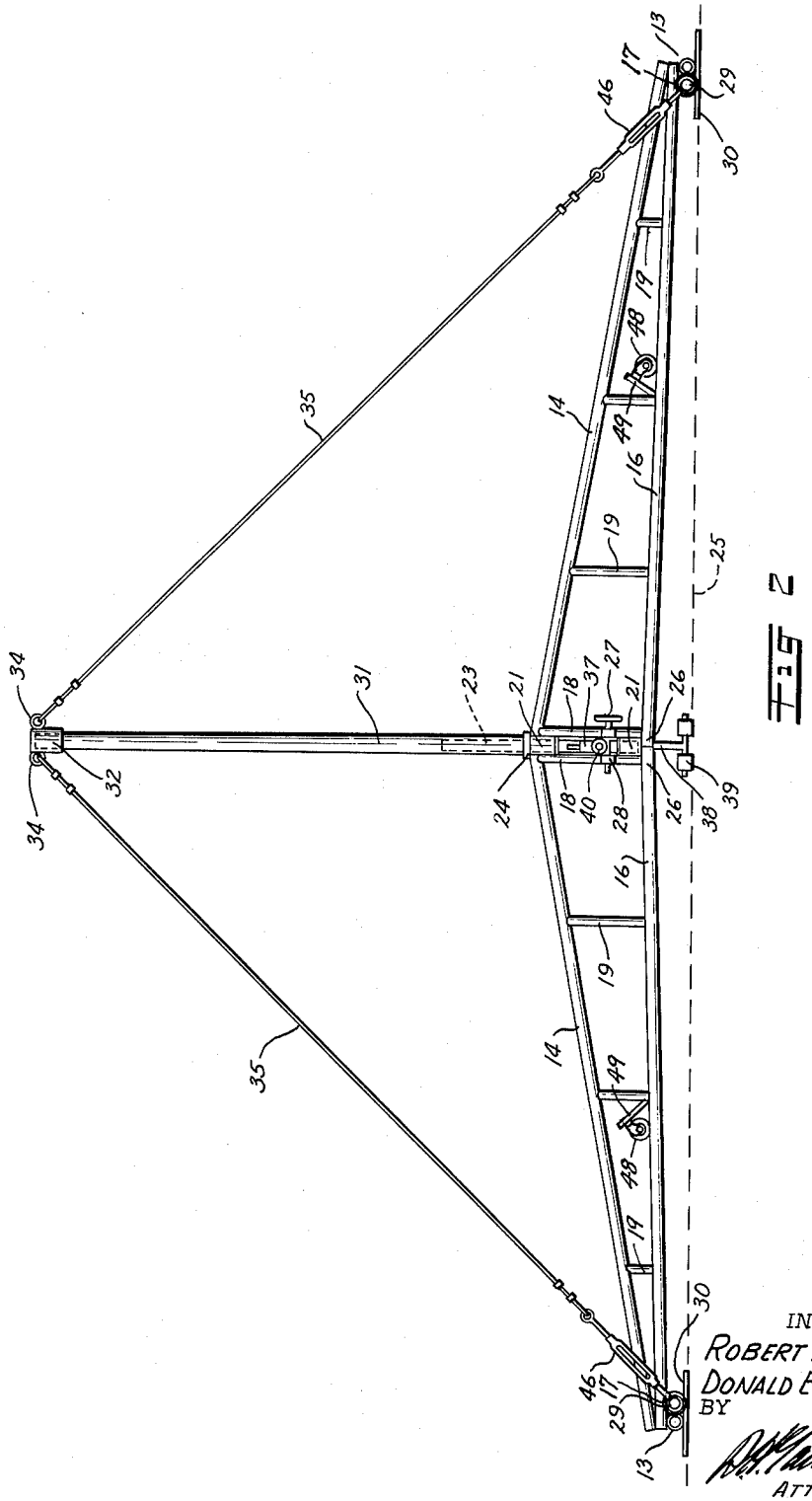

FIG. 2

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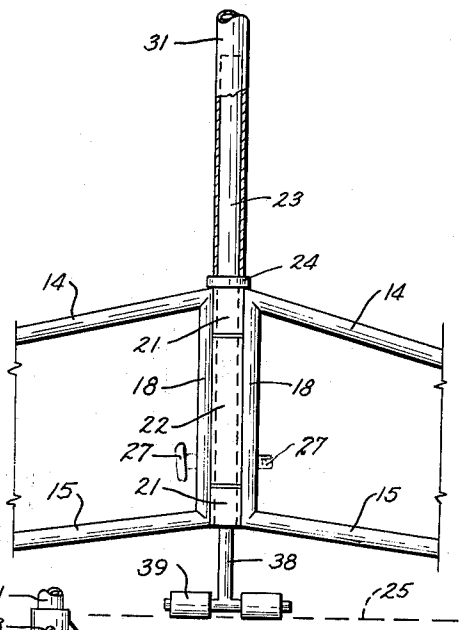

Fig. 3

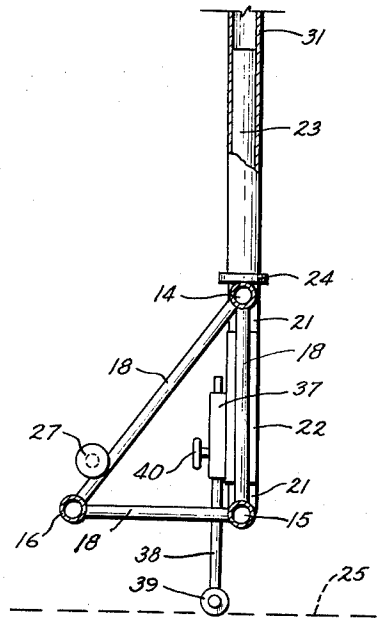

Fig. 4

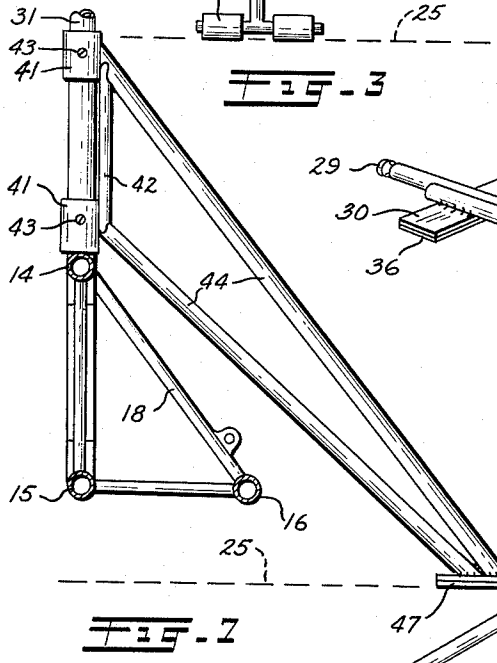

Fig. 7

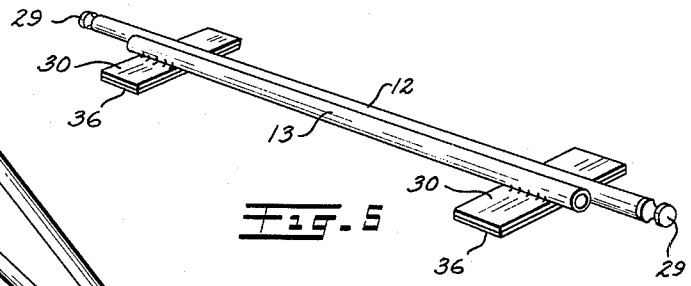

Fig. 5

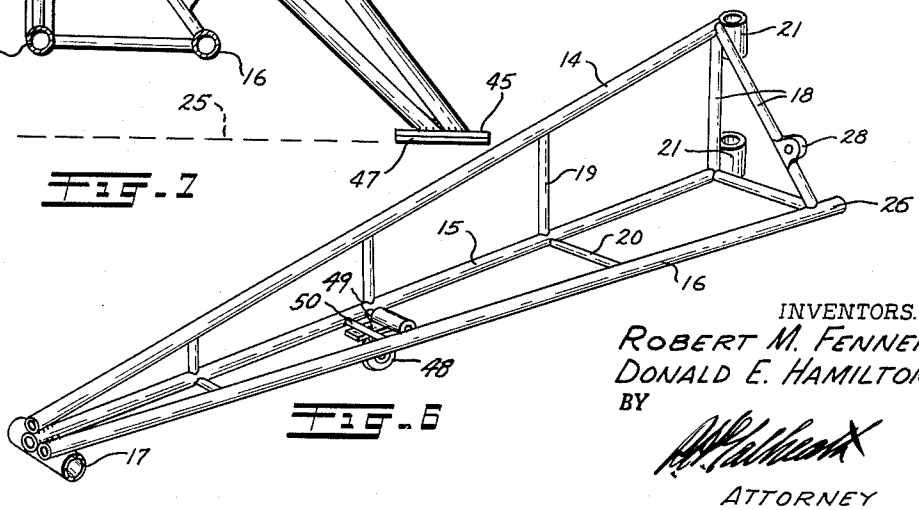

Fig. 6

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3,201,119

PORTABLE SUPPORTING STRUCTURE FOR GYMNASTIC EQUIPMENT

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Filed Nov. 30, 1962, Ser. No. 241,403
7 Claims. (Cl. 272—62)

This invention relates to gymnastic equipment and more particularly to horizontal bars and still ring units for gymnasts.

The principal object of the invention is to provide a portable erectable supporting structure for horizontal turning bars and similar equipment which can be easily and rapidly assembled and erected when and where desired for use and which will provide a safe, solid non-tilting, non-sliding support for horizontal turning bars, trapezes and rings for gymnastic training, practice and performing purposes.

A further object is to provide a supporting structure of the above type which can be quickly disassembled for transportation and storage and which will provide a supporting structure which will be entirely self-supporting so as to require no attachment to the floor, the ground or other structures.

Other objects and advantages reside in the detail construction of the invention, which is designed for simplicity, economy, and efficiency. These will become more apparent from the following description.

In the following detailed description of the invention, reference is had to the accompanying drawing which forms a part hereof. Like numerals refer to like parts in all views of the drawing and throughout the description.

In the drawing:

FIG. 1 is a top plan view of the improved supporting structure for gymnastic equipment showing it fully assembled for supporting a horizontal turning bar;

FIG. 2 is a side elevational view thereof;

FIG. 3 is an enlarged fragmentary, detail view as viewed on the line 3—3, FIG. 1;

FIG. 4 is a similarly enlarged fragmentary detail cross section taken on the line 4—4, FIG. 1;

FIG. 5 is a detail perspective view of a separator element to be later described;

FIG. 6 is a similar perspective view of a side truss element employed on the structure; and

FIG. 7 is an enlarged, detail cross section through a side truss element illustrating an attachable side brace which may be applied to the improved supporting structure.

The gymnastic equipment supporting structure, which forms the subject matter of this invention, has been illustrated supporting a horizontal turning pole or bar 10 of a conventional type upon which a gymnast performs.

The structure employs two side truss structures, each comprising two spaced apart pairs of similar, joined, truss members, such as illustrated in FIG. 6. Each truss member of each pair comprises three tubular longerons 14, 15 and 16 welded together at the outer extremities upon a transversely extending spacer sleeve 17 and welded in triangular relation to the corners of a vertical right triangle frame 18 at their inner extremities. The longeron 15 is the medial member and vertical truss members 19 extend upwardly therefrom to the longeron 14 and horizontal truss members 20 extend horizontally therefrom to the longeron 16. The vertical leg of the right triangle frame 18 of one truss member of each pair of truss members is provided with two vertically spaced and aligned mast sleeves 21 and the vertical leg of the other truss member of the pair is provided with a medial, vertical mast sleeve 22 which passes between the two vertically spaced sleeves

21 of the other truss member to receive a mast post 23 which acts to pin the two truss members of each pair together as shown in FIG. 3. The mast post 23 is provided with a projecting stop ring 24 to limit its descent into the sleeves.

When the truss members are joined, the right triangle frames 18 are in vertical, spaced, parallel relation and the longerons 15 and 16 gradually incline outwardly and downwardly to the sleeves 17 while the longeron 14 similarly inclines at a steeper angle so that the juncture between the truss members of each pair is maintained in elevated, spaced relation to the floor, the position of which is indicated on the drawing by the broken line 25.

It will also be noted that when viewed from the top, as in FIG. 1, the longerons 14 and 15, at the two sides of the structure flare outwardly as the extremities of the structure are approached so that the overall width will be greater at the extremities than at the medial portion of the structure. The width differential of the structure is preset by allowing the inner extremities of the longerons 16 to project outwardly beyond the frames 18, as shown at 26, so that the latter projecting extremities will contact each other when the frames 18 are in parallel relation. After assembly, they may be clamped together by means of a clamp screw 27 mounted on the inclined side of one frame 18 of each pair which threads into an aligned nut 28 mounted on the inclined side of the adjacent frame 18.

The two truss structures are connected together at their opposite extremities by means of tubular separators 12 shown more in detail in FIG. 5. The separators are formed from a length of relatively heavy metal pipe to which a second shorter stiffening pipe 13 is welded. An attachment spool 29 is fixedly positioned in each extremity of each separator and a flat floor plate 30 is welded beneath the separators 12 and 13 adjacent the extermities of the latter.

The extremities of the separators 12 are adapted to be slipped through the spacer sleeves 17 until the latter contact the ends of the stiffening pipe 13 with the attachment spools 29 projecting oppositely outward from the spacer sleeves 17 as shown in FIG. 1 The length of the stiffening pipe 13 is in excess of the length of the horizontal bar 10 to accommodate the outward flare of the truss structures. In a typical set up, the horizontal bar and the stiffening pipe will have lengths of eight and twelve feet, respectively.

The structure is erected by pivotally securing the two truss members of each pair together by propping the mast posts 23 through the sleeves 21 and 22 of each pair. The spacer sleeves 17 are then slipped over the extremities of the two tubular separators 12 to support the two side truss structures in their proper erected position and the two clamp screws 27 are tightly threaded into their respective nuts 28 to lock the supporting structure in position.

Tubular masts 31 of equal length are now fitted vertically downward over the mast posts 23. The masts 31 are capped by cap fittings 32 provided with bar sockets 33 for receiving the extremities of the horizontal bar 10 and with cable ears 34 to which the upper extremities of brace cables 35 are fixedly attached. The lower extremities of the brace cables are attached to conventional turnbuckles 46 which are hooked to the projecting attachment spools 29 on the separators 12. Actuation of the turnbuckles places the four cables 35 under equal tension and the equipment is ready for us.e

It will be noted that the entire structure rests solidly upon the four widely spaced floor plates 30 which for floor use are preferably provided with cushion pads 36. Thus, the horizontal bar is solidly supported against tipping or sliding when in use.

If desired, the rigidity of the supporting structure can be still further increased by welding vertical leg tubes 37 to the medial mast sleeves 22. A leg rod 38 is vertically slidable in each of the tubes 37 and can be locked in any desired vertical position thereon by means of a set screw 40. The rod 38 terminates in a T-shaped, padded foot 39 which can be locked in contact with the floor to resist excessive downward movement of the masts 31.

The rigidity of the supporting structure can be still further increased by adding an attachable side brace structure such as illustrated in FIG. 7. The latter side brace structure employs two attachment collars 41 maintained in vertically-spaced-relation by means of a vertical spacing tube 42 welded thereto. The collars 41 are adapted to be positioned over and about the masts 31 and locked thereon adjacent the lower extremity thereof by suitable set screws 43. Two diagonal braces 44 extend outwardly and downwardly from the collars 41 at each side of the structure to an attachment with a side floor plate 45 preferably provided with a floor cushion 47.

When using the side brace structure of FIG. 7, the leg rods 38 previously described are not necessary as the brace structure will absorb both vertical and sideward stresses on the masts.

A caster wheel 48 is mounted on each of the truss structures. The caster wheels are mounted on hinged plates 49 rotatably pivoted on one of the horizontal truss members 20 so as to swing against a horizontal stop member 50 extending between the longerons 15 and 16. When the plates 49 are swung over the stop members 50 the caster wheels are supported out of contact with the floor as shown in FIG. 1. For transportation the plates 49 are swung beneath the stop members.

While the invention has been described as supporting a horizontal bar, the same structure can be employed for trapezes, still rings, safety belts or training rigs by simply increasing the height of the masts and lengthening the brace cables 35. The horizontal bar could then be replaced by any suitable horizontal bar or beam member from which the rings or other equipment would be suspended between the two masts.

While a specific form of the invention has been described and illustrated herein, it is to be understood that the same may be varied within the scope of the appended claims, without departing from the spirit of the invention.

Having thus described the invention, what is claimed and desired to be secured by Letters Patent is:

1. A portable supporting structure for gymnastic equipment comprising: two side frame structures, each side frame structure consisting of two truss elements; means for detachably joining the two truss elements together at their inner extremities, said elements extending

outwardly and downwardly from the point of attachment; a detachable spacing means joining the outer extremities of said side frame structures and maintaining them in horizontal, spaced relation; and a tubular, equipment-supporting mast arising from each of said points of attachment.

2. A portable supporting structure for gymnastic equipment comprising: two side frame structures, each side frame structure consisting of two truss elements having vertically aligned mast sleeves formed on the inner extremities of said elements in mutually overlapped relation; a vertical mast post removably positioned in said overlapped sleeves so as to pivotally join the latter, said elements extending outward and downward from said sleeves; a detachable spacing means joining the outer extremities of said side frame structures and maintaining them in horizontal spaced relation; and a tubular mast fitted downwardly over each of said posts to provide a supporting structure for gymnastic equipment.

3. A portable supporting structure as described in claim 2 having means for locking the adjacent truss elements in each side frame together to prevent rotation about said mast posts.

4. A portable supporting structure as described in claim 2 in which the detachable spacing means comprises: a spacer sleeve mounted below the outer extremity of each truss element, the sleeves of the opposite side frame members being in axial alignment, and an elongated separator extending through the aligned sleeves and maintaining said side frame members in vertical spaced relation.

5. A portable supporting structure as described in claim 4 having cable attachment means on the extremities of each spacer and cables extending from said attachment means upwardly and inwardly to said masts.

6. A portable supporting structure as described in claim 2 having a vertical leg tube mounted on a mast sleeve of each side frame; a leg rod vertically adjustable in each leg tube; and a floor-engaging foot on the lower extremity of each leg rod.

7. A portable supporting structure as described in claim 2 having detachable diagonal, outwardly and downwardly extending, braces attached to each mast and a floor-engaging foot on the outer extremity of said braces.

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