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PARALLEL BAR CONVERSION KIT

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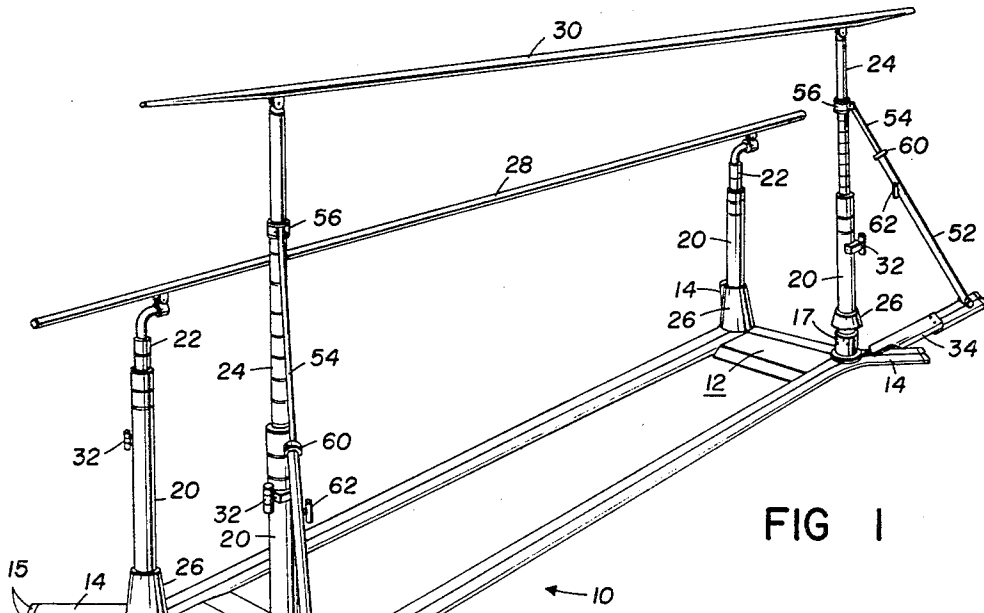


FIG 1

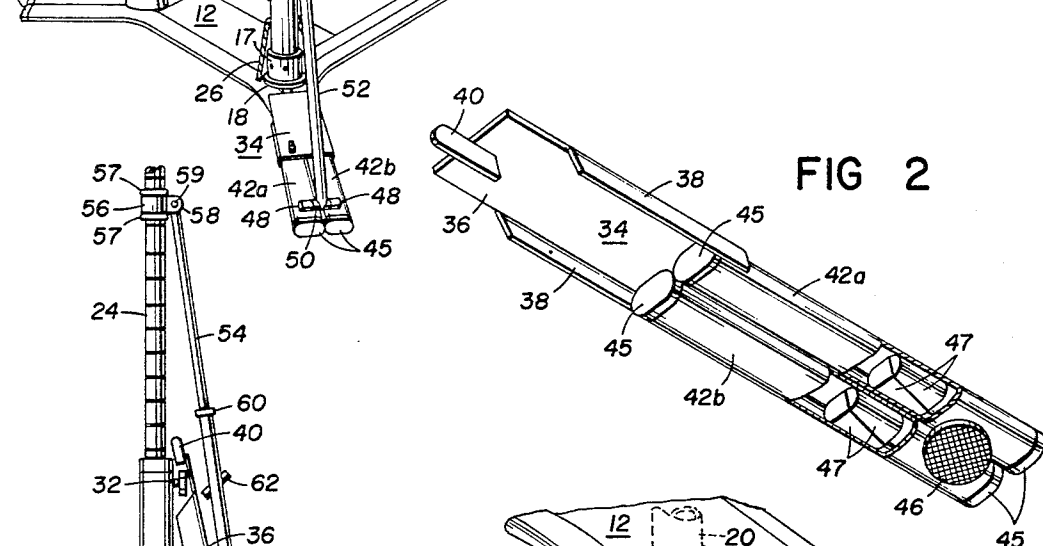


FIG 2

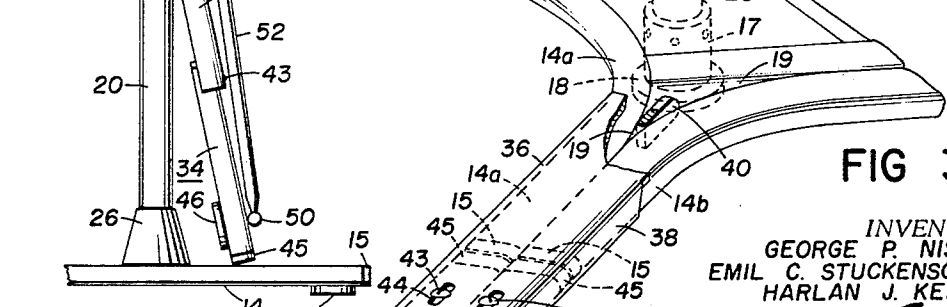
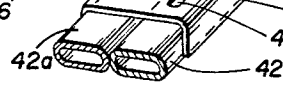


FIG 3

FIG 4



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**PARALLEL BAR CONVERSION KIT**

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5 Claims

**ABSTRACT OF THE DISCLOSURE**

A kit for converting a set of portable parallel bars from even to uneven form, which kit includes a pair of extension pistons for elevating one of the bars to the required height above the other. The important and inventive aspect of the kit is constituted by a brace assembly for each extension piston. Each brace assembly comprises an extension leg which overlies and extends the adjacent splayed leg of the supporting base. An inclined, adjustably telescoping brace is pivotally attached at its respective ends to the extension piston and to the outer end of the extension leg. The inner end of each extension leg is attached to the base in such a manner that its respective extension piston is rigidly braced and yet, when the brace is released, the outer end of the extension leg need be merely lifted to disengage it from the base, whereupon the extension leg and the brace may be folded up to lean against its adjacent extension piston, or merely laid down across the adjacent legs of the base, and the extension pistons lowered. Hence the entire parallel bar apparatus may be readily transported or stored without complete detachment of the brace assembly therefrom.

**Background of the invention**

The particular type of parallel bar apparatus with which the invention concerned is supported wholly by a fabricated base so that it can be moved from place to place, as opposed to that type of parallel bar apparatus which is guyed directly to the floor. Typically, in the former type of apparatus, the base includes a horizontal splayed leg adjacent each corner of the base. It is most desirable that even parallel bar apparatus of this type be readily convertible to uneven form in order to achieve maximum utility and economy of equipment. As is well known, such conversion requires a pair of extension pistons for one of the two bars so that it may be substantially elevated above the other. The increased elevation, in turn, requires some means of bracing the extension pistons in order to accommodate the lateral forces placed upon them by performers. Preferably, the bracing should be to the base, rather than directly to the floor, and, whatever its nature, should also be readily attachable and detachable, both so the apparatus can be more readily transported and stored and so that the change from even to uneven form, or vice versa, may be readily accomplished. Various methods of achieving such bracing are well known. However, such methods have several disadvantages. Particularly, they are relatively time consuming to attach or detach and, moreover, must be removed before the apparatus may be transported through doorways or stored. The chief object of the present invention, therefore, is to eliminate these disadvantages as far as is feasible.

**Brief summary of the invention**

The bracing means utilized in the present invention consists of a pair of extension legs which merely overlie and extend the two splayed legs of the base of the apparatus adjacent the bar to be elevated, which extension legs include lugs at their inner ends that fit into recesses

in the base, and diagonal, adjustably telescoping braces which extend from the outer ends of the extension legs upward to the extension pistons. The engagement of the lugs is such that when the braces are telescopically released, the extension legs need only be lifted at their outer ends to disengage them from the base. Thereafter, the extension legs and the braces may be readily folded against their respective extension pistons, or swung around and laid down across the adjacent legs of the base, and the pistons then lowered so that the apparatus may be readily transported or stored. Additionally, simply by removing the upper ends of the braces, the brace assemblies may readily be wholly detached from the apparatus.

**Brief description of the drawings**

FIGURE 1 illustrates in perspective a set of even parallel bars converted to uneven form by means of the present invention.

FIGURE 2 is a perspective view of the underside of one of the extension legs.

FIGURE 3 is a fragmentary perspective view showing the manner of the engagement of the lugs of the extension legs with the base of the apparatus.

FIGURE 4 is a partial elevational view showing an extension leg and its brace folded up against the adjacent extension piston after the extension leg has been detached from the base.

**Description of the preferred embodiment**

The parallel bar apparatus, generally indicated by 10, in the drawings is essentially the same as that shown in the aforesaid Patent 3,232,609 to which reference may be had for structural details not otherwise set forth herein. Basically, the apparatus 10 includes a generally rectangular base 12 made up of pairs of flattened steel tubing disposed side by side and formed to provide short splayed base legs 14 at the respective corners of base 12 fitted with end plugs 15. The legs 14 extend horizontally outwards from the corners of base 12 along the floor and steady the apparatus 10 while in use, being provided at their outer ends with suitable elastomeric floor pads 16 on their undersides. At each corner of base 12 at the inner end of its respective leg 14, an upright collar 17 provided with a flange base 18 is welded atop the base tubing. Collars 17 are disposed so that their flanges 18 partially overlie the convergences of tubing members 14a and 14b of the legs 14 by means of which recesses 19 are formed beneath the flanges 18. Each collar 17 fixedly receives the lower end of an upright tubular column 20 into which in turn adjustably telescopes the pistons 22 and the extension pistons 24, collars 17 being concealed by soft plastic skirts 26 fitted about columns 20. To the tops of pistons 22 are swivelly attached the lower bar 28 and to the tops of pistons 24 are swivelly attached the upper bar 30 in the usual manner. In order to adjustably fix the pistons 22 and 24 within their columns 20, a suitable clamping device 32 is employed adjacent the upper end of each column 20.

Each brace assembly includes an extension leg 34 comprising essentially two parts. The first is a top plate 36 which overlies and somewhat overhangs its respective base leg 14, the outer lateral portions of plate 36 having downturned lips 38 which partially envelope the sides of its base leg 14. The inner end of plate 36 is provided on its lower face with a lug 40 which extends downwardly therefrom and outwardly beyond the inner end of plate 36. Each lug 40 is fashioned to fit snugly within its respective recess 19 when the extension leg 34 is fitted to base 12 in an inclined position, as shown at the right side of FIGURE 1, and thereafter lowered to the position shown at the left hand side of that figure. The second part

of each extension leg 34 is formed by a pair of laterally adjacent lengths of tubing 42a and 42b, identical to members 14a and 14b of each base leg 14. The inner ends of members 42a and 42b are adjustably fixed, as by screws 43 in longitudinal slots 44 in plate 36, beneath the overhanging end of the latter to abut the outer end of the base leg 14. Members 42a and 42b extend longitudinally outward therefrom along the floor, their open ends being closed by suitable end plugs 45 and their outer end being fitted with a floor pad 46 similar to plugs 15 and pads 16, respectively. Accordingly, each extension leg 34, when in the position shown at the left of FIGURE 1, is restrained from any outward longitudinal movement relative to its base leg 14 by the lug 40 in the recess 19 and from any lateral movement relative thereto by the lips 38. Furthermore, since its lug 40 engages the underside of the flange 18, the inner end of extension leg 34 is also restrained against any upward movement. Yet each extension leg 34, on the other hand, may be quickly detached simply by lifting its outer end and then withdrawing the lug 40 from its recess 19. In order to help maintain each assembly in position on the floor, the tubing members 42a and 42b are provided with weights 47 wedged therewithin.

The outer ends of the top sides of the tubing members 42a and 42b of each extension leg 34 are fitted with a pair of spaced, axially aligned bushings 48 transversely disposed with respect to their extension leg 34. The two pairs of bushings 48 pivotally receive the opposite ends of trunnions 50 transversely fixed at their middle to the lower ends of inclined tubular brace members 52 into which adjustably telescope brace rods 54. The latter are removably secured at their upper ends to their respective extension pistons 24 by means of split collars 56 rotatable on extension pistons 24 and axially located thereon at equal heights by means of two pairs of annular bosses 57 straddling collars 56. The upper ends of rods 54 are transversely pivoted to collars 56 by means of clevises 58 formed thereon and removable pins 59 parallel to trunnions 50. The upper ends of brace members 52 are fitted with guide collars 60 and below that with suitable screw clamps 62 in order to adjust the extension of brace rods 54 therefrom. Thus, when extension legs 34 are fitted to their base legs 14 in the manner described and the upper ends of brace rods 54 are secured to their extension piston 24, each of the latter may be then urged toward the lower bar 28 in order to extend its respective brace rod 54 to the maximum possible extent before its clamp 62 is locked up. The outer ends of extension legs 34 are thereby immobilized and the respective extension pistons 24 are rigidly braced thereagainst.

Should it be desired to transport or store the apparatus 10 without removing the conversion kit entirely, clamps 62 need only be released so that the outer ends of extension legs 34 may be lifted to disengage their lugs 40, whereupon the extension legs 34 may be readily folded up against their respective columns 20 as shown in FIGURE 4. Or, if the extension pistons 24 must also be lowered in order for the apparatus 10 to pass through a doorway, each extension leg 34 may be removed as aforesaid, but instead of being folded up against its respective column 20, may be simply swung horizontally around its piston 24 on collar 56 and then laid down on its side across the two base legs 14 at that end of apparatus 10, the outer end of extension leg 34 resting upon the remoter of the two base legs 14 in order to provide sufficient leeway for brace rod 54 to telescope into brace member 52 as its extension piston 24 is lowered. The apparatus 10 is thus quickly restored essentially to its overall dimensions prior to the conversion without need to detach any of the conversion kit therefrom.

While the invention has been described in terms of a particular embodiment, being the best mode known of carrying out the invention, and detailed descriptive language has been used, it is not so limited. Instead, the

following claims are to be read as encompassing all modifications and adaptations of the invention falling within the spirit and scope thereof.

We claim:

1. Apparatus for use with a set of even parallel bars which have been converted to uneven parallel bars, said converted uneven parallel bars including a pair of upright posts carrying a pair of extension pistons telescopically extending from their respective upper ends and a base assembly supporting said posts having a horizontally outwardly extending base leg adjacent each of said posts, said apparatus comprising: an attachable and detachable brace assembly for each of the extension pistons, each of said brace assemblies including a horizontal extension leg whose inner end when said brace assembly is attached to the parallel bars is detachably engageable with the base assembly adjacent the inner end of one of its base legs in a manner restraining movement of the inner end of said extension leg relative to the base assembly, said extension leg when engaged with the base assembly as aforesaid overlying said base leg and extending horizontally outwardly therebeyond and engaging the ground, and an inclined brace member connected at its lower end adjacent the outer end of said extension leg about a horizontal pivot axis transversely disposed with respect to said extension leg and said brace member, the upper end of said brace member when said extension leg is engaged with the base assembly as aforesaid being detachably engageable with the one of the extension pistons adjacent thereto effective to restrain movement of said brace member axially of said one of the extension pistons, said brace member including two adjustably fixable telescoping portions and releasable means for adjustably fixing said portions relative to each other, and said engagements of said brace member with the extension piston and of the inner end of said extension leg with the base assembly each including pivots effective to permit vertical movement of the outer end of said extension leg when said brace assembly is attached as aforesaid and said adjustable fixing means is released.

2. The device of claim 1 wherein said engagement of said brace member with the extension piston includes means permitting horizontal rotation of said brace member about the extension piston.

3. The device of claim 2 wherein said extension leg comprises an inner portion and an outer portion fixed to each other at their adjacent ends, said outer portion being effective to abut the outer end of the base leg and said inner portion being effective to substantially envelop the exposed longitudinal surfaces of the base leg and thereby prevent lateral movement of said extension leg relative to the base assembly when said extension leg is engaged with the base assembly as aforesaid.

4. The device of claim 3 wherein the inner end of said inner leg portion is provided with a lug extending longitudinally outwardly thereof beyond said end and downwardly therefrom, said lug when said extension leg is engaged with the base assembly as aforesaid engaging a recess in the inner end of the base leg and permitting ready detachment therefrom when said adjustable fixing means are released upon upward and then outward movement of the outer end of said extension leg.

5. The device of claim 4 wherein said outer portion is weighted in order to more effectively maintain said extension leg in position when engaged with the base assembly as aforesaid.

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