Dec. 24, 1957 P. MARGULIES 2,817,522

PORTABLE GYMNASTIC DEVICE

Filed July 26, 1954 4 Sheets-Sheet 1

Fig. 1

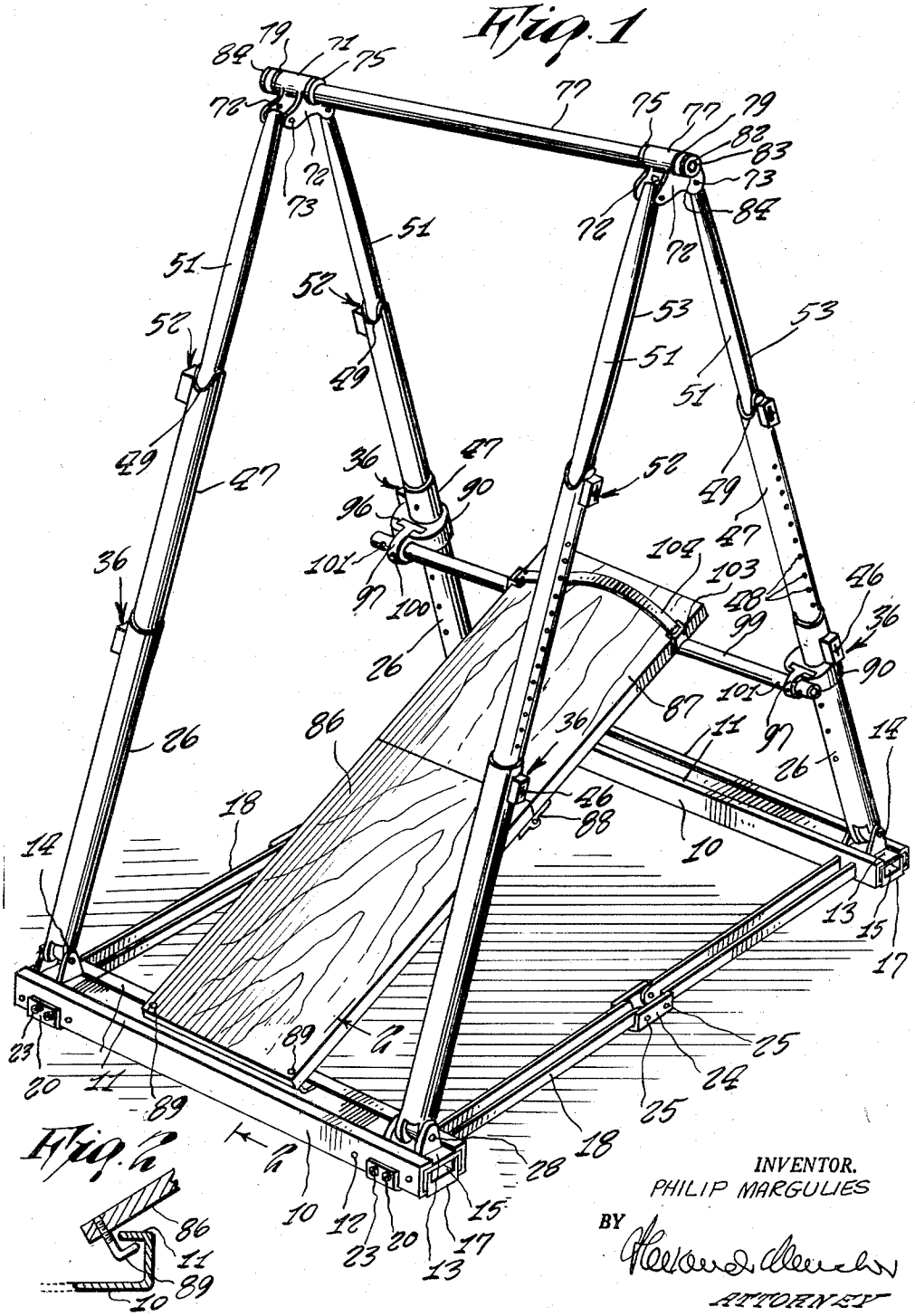


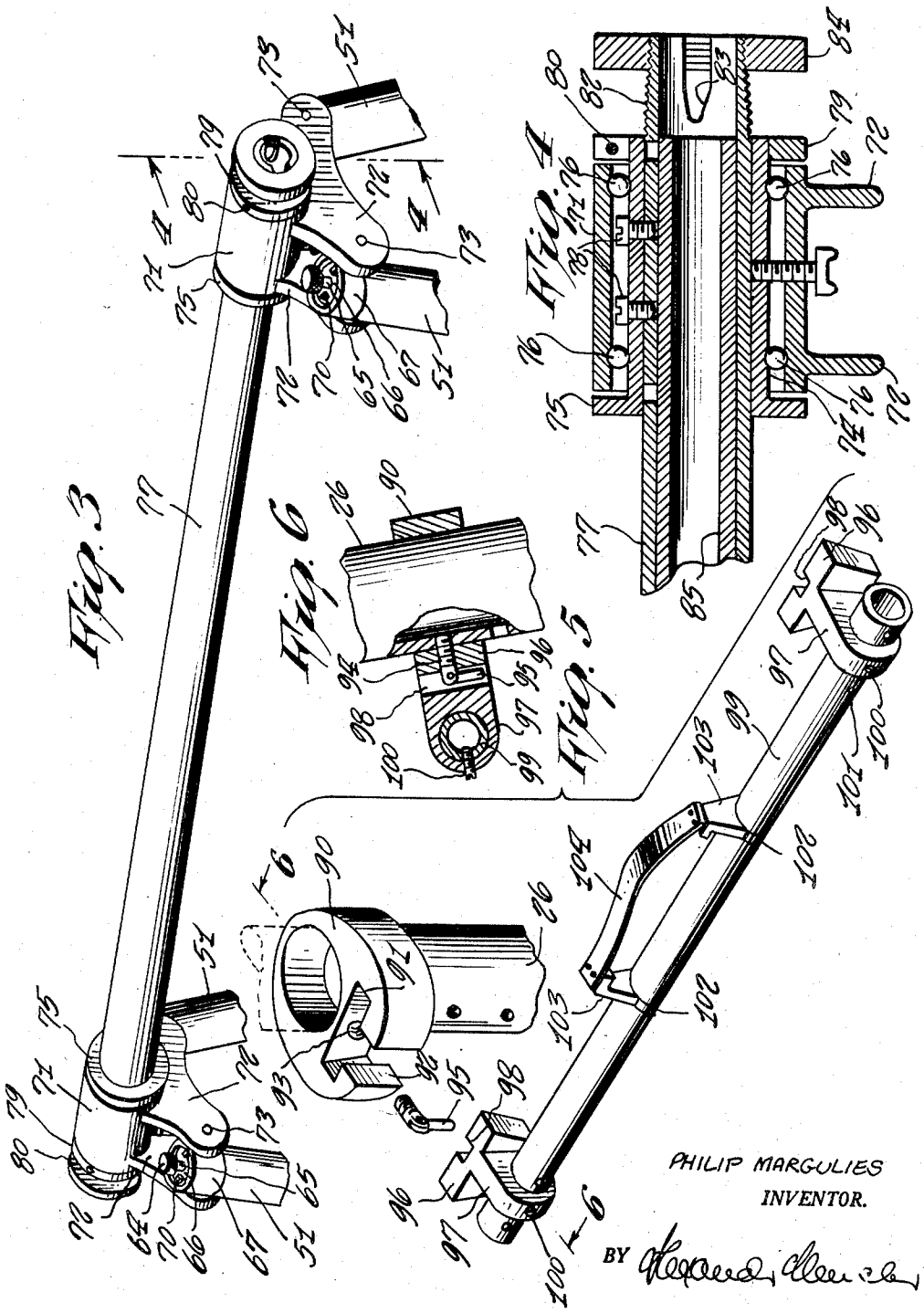
Fig. 2

INVENTOR.
PHILIP MARGULIES
BY
ATTORNEY

Dec. 24, 1957 P. MARGULIES 2,817,522

PORTABLE GYMNASTIC DEVICE

Filed July 26, 1954 4 Sheets-Sheet 2



PHILIP MARGULIES
INVENTOR.

BY

ATTORNEY

Dec. 24, 1957 P. MARGULIES 2,817,522

PORTABLE GYMNASTIC DEVICE

Filed July 26, 1954 4 Sheets-Sheet 3

Fig. 7

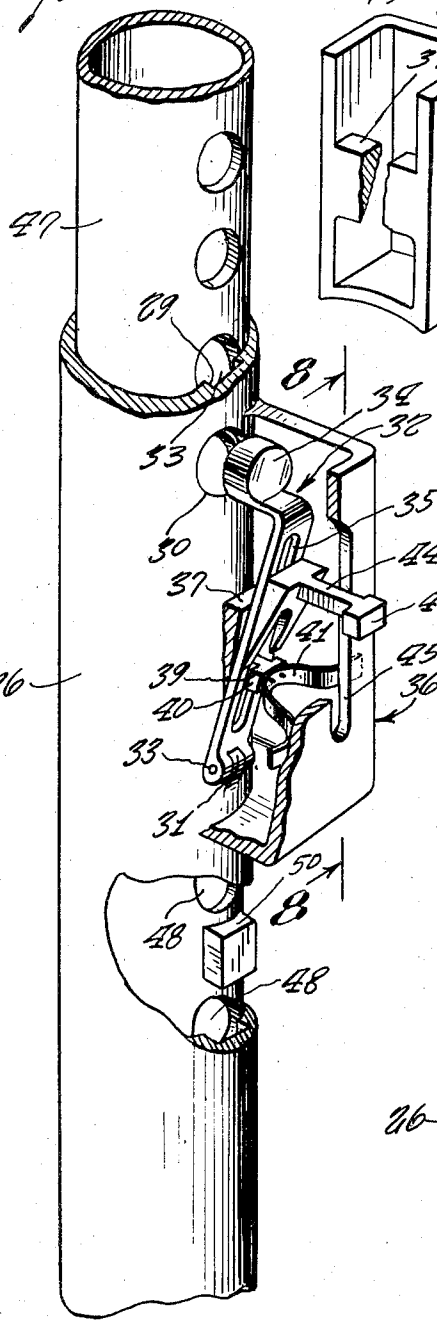
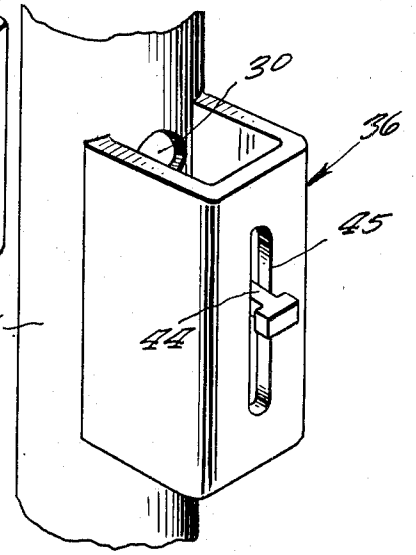


Fig. 9

Fig. 10



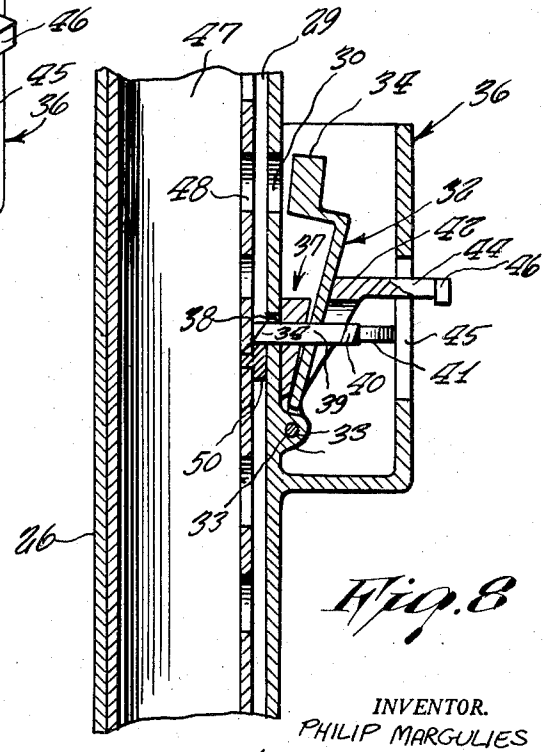


Fig. 8

INVENTOR.
PHILIP MARGULIES

BY

ATTORNEY

Dec. 24, 1957 P. MARGULIES 2,817,522

PORTABLE GYMNASTIC DEVICE

Filed July 26, 1954 4 Sheets-Sheet 4

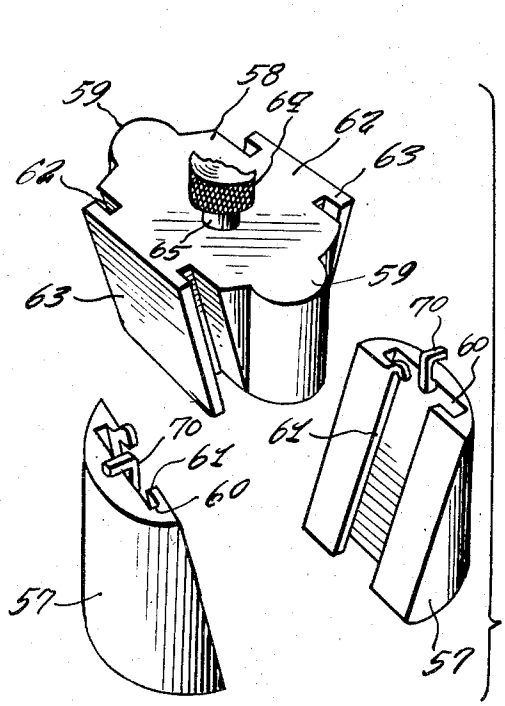


Fig. 13

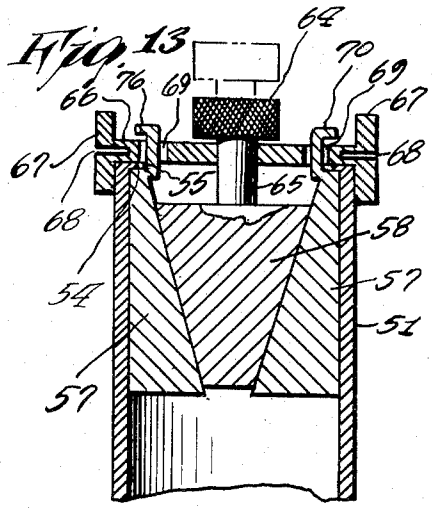


Fig. 11

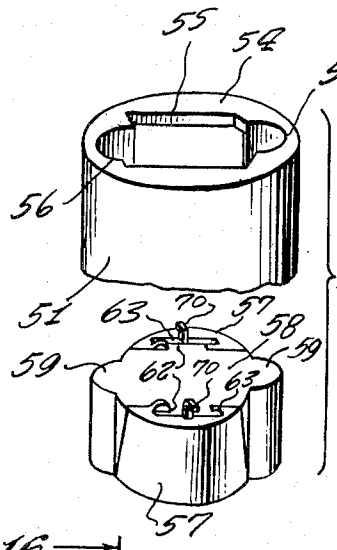


Fig. 12

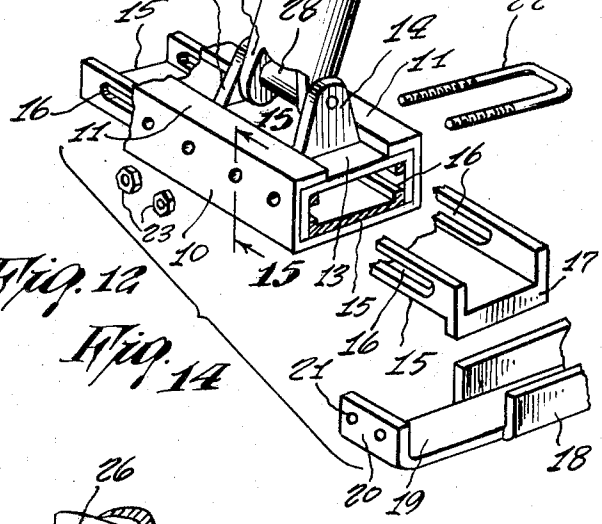


Fig. 14

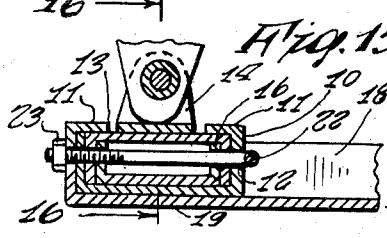


Fig. 15

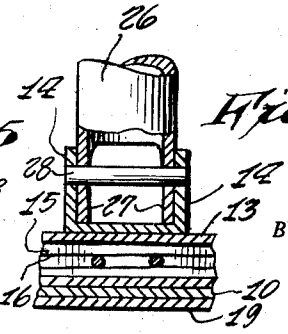


Fig. 16

INVENTOR.
PHILIP MARGULIES
BY
ATTORNEY

United States Patent Office 2,817,522
Patented Dec. 24, 1957

2,817,522

PORTABLE GYMNASTIC DEVICE

Philip Margulies, New York, N. Y.

Application July 26, 1954, Serial No. 445,679
4 Claims. (Cl. 272—58)

This invention relates to gymnastic units.

It is an object of the present invention to provide a gymnastic unit which combines the features of a parallel bar, a chinning bar, and an abdominal board in one unit.

It is another object of the present invention to provide a gymnastic unit of the above type which may be collapsed and folded into a compact unit for convenience in storage and which is portable thereby.

It is another object of the present invention to provide in a gymnastic unit of the above type a chinning bar of adjustable length as well as base members of adjustable length.

Other objects of the present invention are to provide a gymnastic unit bearing the above objects in mind which is of simple construction, inexpensive to manufacture, has a minimum number of parts, is easy to use and efficient in operation.

For other objects and a better understanding of the invention, reference may be had to the following detailed description taken in connection with the accompanying drawing, in which:

Figure 1 is a perspective view of a preferred embodiment of the present invention showing the same in use with an abdominal board;

Fig. 2 is a fragmentary vertical sectional view taken along the line 2—2 of Fig. 1;

Fig. 3 is an enlarged perspective view of the upper portion of the device;

Fig. 4 is a vertical sectional view taken along the line 4—4 of Fig. 3;

Fig. 5 is an exploded perspective view of the abdominal board supporting bar and the means for mounting the ends of the abdominal board;

Fig. 6 is a view shown partly in elevation and partly in section and taken along the line 6—6 of Fig. 5;

Fig. 7 is a fragmentary perspective view shown partly broken away of the supporting tube assembly and the means for adjustably positioning the same;

Fig. 8 is a vertical sectional view taken along the line 8—8 of Fig. 7;

Fig. 9 is a perspective view of one of the parts of the invention;

Fig. 10 is a fragmentary perspective view of a portion of the tube assembly and showing the means for adjusting the same;

Fig. 11 is an exploded perspective view of the means for mounting the ends of the chinning bar;

Fig. 12 is an exploded perspective view showing the parts of Fig. 11 in assembled relationship and the upper end of one of the tubular members receiving the same;

Fig. 13 is a vertical sectional view showing the parts of Fig. 12 in assembled relationship;

Fig. 14 is an exploded perspective view of one end of the base assembly;

Fig. 15 is a vertical sectional view taken along the line 15—15 of Fig. 14; and

Fig. 16 is a vertical sectional view taken along the line 16—16 of Fig. 15.

Referring now more in detail to the drawing, 10 represents a pair of oppositely disposed base members of substantially U-shaped cross section integrally formed along their upper open edges with the laterally extending flanges 11. The opposite sides of each of the base members 10 at each end thereof are provided with the longitudinally spaced, laterally aligned openings 12 (Figs. 15, 14 and 16).

A channel supporting member 13 of inverted U-shaped cross section is slidably disposed within the opposite ends of each of the base members 10, the sides of the channel supporting member 13 being provided with laterally aligned, longitudinally spaced openings adapted to be aligned with the openings 12 while the upper surface thereof is provided with a pair of upwardly extending lugs 14 for a purpose which will hereinafter become clear. Extendible legs 15 of substantially U-shaped cross section are slidably received intermediate the channel supporting members 13 and the base bars 10 at each end of the latter, the opposite sides of the extendible legs 15 being provided with elongated slots 16 aligned with the openings 12. The outer end of each of the extendible arms 15 is integrally formed with a depending flange 17 adapted to abut the ends of the base members 10 whereby to limit the inward displacement of the legs 15, as will be obvious.

A transverse member 18 of U-shaped cross section is secured to the opposite ends of the bars 10 by means of an L-shaped extension 19 provided therein, the vertical portion 20 of the extension 19 having longitudinally spaced openings 21 adapted to be aligned with the openings 12. The parts are retained in assembled relationship by means of a U-bolt 22 (Fig. 14), which passes through the laterally aligned openings in the base member 10, the channel supporting member 13, the extendible legs 15 and the vertical portion 20, the U-bolt being secured in position by the nuts 23.

The other ends of the transverse arms 18 are pivotally connected to each other by means of a U-shaped bracket 24 and pins 25.

A lower tubular member 26 is provided for each pair of lugs 14, the lower end of each such tubular member 26 being integrally formed with the lugs 27 received between each pair of lugs 14 and pivotally connected thereto by a pin 28 (Fig. 16).

As shown in Figs. 7 and 8, the tubes 26 are provided on their inner surfaces with the longitudinal grooves 29, each of the bottom tubular members 26 being provided with an opening 30 therethrough aligned with the internal groove 29 thereof. The outside of each of the tubular members 26 near the upper end thereof is integrally formed with a lug 31 which pivotally mounts the bifurcated lower end of a hammer indicated generally at 32 by means of a pin 33, the hammer 32 including an offset head member 34 adapted to be received through the opening 30. The member 32 is provided with an elongated slot 35 (Fig. 7).

A rectangular shell or casing indicated generally at 36 is provided to enclose the hammer 32 and has a slot 45 for sliding movement of structure on the outside of the bottom tubular member 26, the shell 36 being open along its inner face and integrally formed with a wedge 37 (Fig. 9) adapted to be received between hammer 32 and the bottom tubular member 26.

The tubular member 26 below the opening 30 is provided with a vertical slot 38 through which passes a transverse arm 39, the arm 39 passing outwardly through the slot 35 in the hammer 32 and terminating in a laterally extending head 40. A U-shaped spring 41 is secured to

the outer face of the head 40, the free ends of the spring 41 being bent laterally and in resilient engagement with the inner face of the shell 36.

A separable wedge 42 is provided with an upwardly extending slot 43 which straddles the arm 39 within head 40 thereof, the wedge 42 being integrally formed with an outwardly extending handle 44 which extends outwardly of shell 36 through a vertical slot 45 provided therein, and terminating in a button 46 normally residing in the groove 29.

A middle tubular member 47 provided with a plurality of longitudinally spaced openings 48 adapted to be aligned with the groove 29 and opening 30 of the lower tubular members 26 is telescopically received therein, the upper ends of each of the middle tubular members 47 being provided with saddle shaped openings 49. The tubular members 47 near their lower ends intermediate the lowermost pair of openings 48 each fixedly mounts a screw having a square head 50 adapted to ride within the groove 29, the head 50 being aligned vertically and disposed intermediate the openings 48. The tubular members 47 will normally be received within the lower tubular members 26 in collapsed position. However, when the tubular members 47 are raised to their uppermost positions (Fig. 1), the head 50 will contact the arm 39, raising the latter along with the wedge 37, shell 36, spring 41 and wedge 42. The upward movement of the parts thus described will, by engagement of the head 40 with the wedge 42, force the hammer 32 inwardly and the head thereof 34 within the aligned openings 30, 48, whereby to lock the middle tubular members 47 in their uppermost position to the lowermost members 26. When it is desired to remove the middle tubular members 47 entirely from the lower tubular members 26, it is only necessary to depress the wedge 42 by means of the button 46, which action will move the arm 39 outwardly from the groove 29 and permit the passage upwardly therethrough of the head 50 and the middle tubular member 47.

As shown in Fig. 1, upper tubular members 51 are telescopically received within the middle tubular members 47, the locking of the tubular members 51 to the middle tubular members 47 when in their raised position being effected by a hammer mechanism indicated generally at 52 and similar to the hammer mechanism described in connection with the lower members 26 and their respective middle tubular members 47. The hammer mechanisms 52 may be modified, however, in that each of the upper tubular members 51 is provided with a longitudinal groove 53 aligned with the respective hammer heads, the arm corresponding to the arm 39 projecting inwardly from the middle tubular members 47 into the grooves 51 normally. Protrusions are provided at both ends of the grooves 53 and when the tube 51 is raised into its uppermost position (Fig. 1), the lowermost protrusion will contact this arm and force the hammer mechanism into a similar operation as that described in connection with Figs. 7 and 8, each of the tubular members 51 being provided with an opening therethrough, not shown, within the grooves 53 which receives therethrough the head of the hammer mechanism.

Referring now particularly to Figs. 11 through 13, it will be seen that the upper end of the upper tubular members 51 are integrally formed with top walls or covers 54 having rectangular openings 55 therethrough, the rectangular openings 55 at each end being provided with the semicircular extensions 56. A pair of complementary, frustoconical members 57 are adapted to fit within the upper ends of the upper tubular members 51 below the covers 54 thereof with the upper ends of the members 57 engaging the cover 54 on each side of the rectangular opening 55. In order to retain the frusto-cylindrical members 57 in operative engagement with the inner faces of the tubular members 51 and the covers 54 thereof, a wedge-shaped member having a rectangular body portion 58 and semicylindrical extensions 59 at each end thereof is provided,

the body member 58 being substantially trapezoidal shape in cross section (Fig. 13). Each of the frusto-cylindrical members are provided with transverse slots 60 and openings 61 which communicate with the slots 60, the wedge being provided with extensions 62 which are slidably received within the openings 61 and flanges 63 which are slidably received within the slots 60 (Fig. 12). Thus, upon the insertion downwardly of the wedge 58 intermediate the frusto-cylindrical members 57, the latter will be urged into operative engagement with the inside of the tubular members 51 with the upper ends thereof engaging the undersurface of the cover 54. An externally knurled knob 64 is connected to the top of the wedge by a neck 65 to facilitate the movement of the wedge in the desired direction, as will hereinafter become clear. A disc (Fig. 13) 66 is disposed across the cover 54 and is provided with a central opening receiving the shaft or neck 65 therethrough. The periphery of disc 66 is integrally formed with a flange 67 having oppositely disposed mounting openings 68 for a purpose which will hereinafter become clear. The disc 66 is provided with oppositely disposed openings 69 through which pass L-shaped members 70 integrally formed at the upper ends of the frusto-conical members 57, the openings 69 being sufficiently wide to permit the downward displacement of the members 70 therethrough when the wedge 58, 59 is moved upwardly. However, when the wedge is in the operative position of Fig. 13, the upper portions of the members 70 will engage the cover or disc 66 whereby to prevent the removal of the latter.

Referring now particularly to Figs. 3 and 4, a pair of sleeves 71 are each integrally formed on the undersurfaces thereof with a pair of longitudinally spaced wings 72, the ends of the wings 72 being pivotally connected to oppositely disposed pairs of flanges 79 by means of pins 73 located within the mounting openings 68 thereof. It will be readily apparent that upon raising the knobs 64 from the full line position of Fig. 13 to the dotted line position, that the cover plates 66 may be removed from the upper ends of the tubular members 51 to permit the removal of sleeves 71 pivotally connected thereto.

An inner sleeve 74 (Fig. 4) integrally formed at its inner end with a flange 75 is rotatably mounted within each of the outer sleeves 71 by means of ball bearings 76.

A tubular chinning bar 77 has the opposite ends thereof fixedly mounted within the sleeves 74 by means of the screws 78.

An adjustable collar 79' is mounted on the outer end of each of the inner sleeves 74 and serves to retain the outer sleeves 71 thereon, the collar 79' being adjustable by means of set screws 80. Thus, the chinning bar 77 is rotatably mounted within the removably mounted sleeves 71. When it is desired to lock the chinning bar 77 relative to the outer sleeve 71, it is only necessary to adjust a bolt 81 screw threaded upwardly through the bottom of each of the outer sleeves 71 until it is received within a corresponding opening provided in the inner sleeves 74 (Fig. 4).

The outer ends of the chinning bar 77 extend outwardly of the collars 79' in externally threaded portions 82 provided with slots 83. A nut 84 is provided on the outer end of each of the externally threaded portions 82 and is adapted to restrict the internal diameter of the ends of the chinning bar 77 as the nuts 84 are screwed inwardly, as will be obvious. Tubular extensions 85 are mounted within the opposite ends of the chinning bar 77 and are normally retained therewithin by nut 84. Upon the unscrewing of nut 84, the extensions 85 may be extended outwardly whereby to increase the length of the chinning bar portion.

A collapsible abdominal board is provided and comprises the boards 86 and 87 connected by means of the hinges 88 (Figs. 1, 5 and 6), the end of the board 86 remote from hinge 88 being provided with L-shaped

screws 89 (Fig. 2) which engage the innermost flange 11 of one of the base members 10, whereby to mount the lower end of the abdominal board intermediate the uprights in the manner shown.

In order to support the upper end of the abdominal board, collars 90 are adjustably mounted upon the bottom tubular members 26 as will hereinafter become clear. Each of the collars is eccentric and is provided with a slot 91 which communicates with the outside through an opening 92, the collar portion adjacent the slot 91 having an internally threaded opening 93 into which is screw threaded a stud 94 adapted to lock the collar 90 to the lower tubular member 26. The outer end of the stud 94 is bifurcated and pivotally mounts a lever 95 by means of which it may be tightened. The ends of the slots 91 are tapered inwardly downwardly and receive therewithin the correspondingly shaped flanges 96 integrally formed with the brackets 97, the outer face of each of the flanges 96 being provided with a slot 98 which receives therewithin the outer end of stud 94 and lever 95 (Fig. 6). The slot 98 prevents the rotational movement of the stud 94 and thereby the collars from becoming loose upon the tubular members 26. The brackets 97 are provided with longitudinally aligned openings which receive therethrough the opposite ends of a tubular abdominal bar 99, the bar being secured within the brackets by means of a set screw 100 screw threaded through the brackets 97 and selectively received within one of a plurality of longitudinally spaced openings 101 provided therein.

A pair of longitudinally spaced collars 102 are rotatably mounted on the abdominal bar 99, the collars 102 being located in suitable annular grooves provided therein whereby to prevent longitudinal displacement while permitting rotational movement. Flanges 103 of substantially L-shaped cross section are secured to the collars 102 and mount the opposite ends of a strap 104. The upper end of the abdominal board 87 is received intermediate the bar 99 and strap 104 with the hinges 88 being disposed downwardly as shown in Fig. 1. Thus, as the angulation of the uprights vary, the collars 102 will rotate accordingly.

The unit may be made stationary by securing the base members 10 to the floor or alternately by securing the brackets 24 thereto. The former method would retain the entire unit in a flattened disposition at the base (Fig. 1), while the latter would permit the unit to be folded up in the manner of a book.

Fig. 1 illustrates the device in operative use as an abdominal board. Upon removal of the board, it will be apparent that the device may be used as a chinning bar. To remove the abdominal board, the bolts 89 are rotated through ninety degrees to bring them out of engagement with the flange 11. The bar 99 is then removed by removing the flanges 96 from the slots 91 in the collars 90, the abdominal board then being raised and folded together with the hinges 88 disposed lowermost, at which point the abdominal board may be placed to one side. The upper tubes 51 are then collapsed into the middle tubes 47 and the latter are collapsed into the lower tubes 26 which leaves the chinning bar 77 disposed on top of the brackets 24 and the collapsed tubes 51, 47, 26 disposed on top of the transverse arms 18 in a compact manner. The abdominal board is then placed on top of the depressed chinning bar 77 with the hinges 88 disposed uppermost. The entire device may then be collapsed in the manner of a book, bringing the base members 10 together.

To assemble the device, the base members 10 are rotated outwardly onto the floor, as shown in Fig. 1. The abdominal board is then removed and put aside. The chinning bar 77 is then lifted up over the user's head and the hammer mechanisms will automatically lock the tubular portions 47, 51 in their extension position of Fig. 1.

In order to convert the device to a parallel bar, the upper tubular members 51 are collapsed within the middle tubular members 47 by depressing the buttons 46 of the hammer assemblies 52. This disposes the chinning bar 77 above the upper ends of the converging tubes 47. The knobs 64 are then pulled upwardly, Fig. 13, to permit the removal of the chinning bar assembly. The chinning bar assembly is then placed to one side. Thus, the top tubular members 51 are collapsed within their respective middle tubular members 47 and retained therein. The upper ends of the tubes 51 will be disposed within the saddle shaped cut outs 49 of the middle tubular members 47. The buttons 46 are then depressed to permit the removal of any two upper tubular members 51 from their respective middle tubular members 47 and placed transversely on the saddle shaped openings 49, the ends of the thus removed transverse upper tubular members being secured by raising the shells of the hammer assemblies 52, the opposite ends of the upper tubular members 51 thus selected being provided with suitable openings at the end thereof which receive the heads of the hammers in a manner similar to the lower tubular hammer assemblies. The abdominal board may, of course, be used either with the chinning bar as a unit or with the parallel bar assembly just described. To collapse the parallel bar assembly, the upper tubes 51 are placed within the middle tubes 47 and the chinning bar assembly is placed across the brackets 24 when the tubular members have been collapsed and rotated downwardly.

While the various changes may be made in the detail construction, it shall be understood that such changes shall be within the spirit and scope of the present invention as defined by the appended claims.

What is claimed is:

1. A collapsible gym unit comprising a base frame assembly, four tubular uprights respectively pivotally connected at their lower ends to the base frame assembly for fore and aft pivotal adjustment relative thereto, second tubular uprights respectively telescopically received within said respective first-named uprights, latch devices on the first-named tubular uprights to hold the second tubular uprights in their extended positions thereon, third tubular uprights respectively telescopically received within said respective second tubular uprights, latch devices upon the upper ends of the respective second tubular uprights respectively engageable with the third tubular uprights to hold them in their extended positions thereon, the assembled tubular uprights upon each side of the base frame assembly converging with one another, a chinning bar assembly releasably attached to the converged upper ends of the assembled tubular uprights, the upper ends of said second tubular uprights respectively having saddle-shaped cutous adjacent to the respective latch devices thereon and adapted to receive the ends of a third tubular upright when extended horizontally therebetween, the ends of the third tubular uprights adapted to be retained in their horizontal positions on the second tubular uprights by the latch devices thereof, whereby upon the chinning bar assembly being released, the unit may be converted into a parallel bar apparatus.

2. A collapsible gym unit as defined claim 1 wherein the base frame assembly includes laterally adjustable supporting members for the first-named tubular uprights, retaining devices for holding said supporting members in their laterally adjusted positions, whereby said third tubular uprights when used as parallel bars may be laterally spaced and retained at different distances from each other.

3. A collapsible gym unit as defined in claim 2 wherein an abdominal bar is extended transversely of the unit between first tubular uprights, and retaining means for se-

curing the ends of the abdominal bar for vertical and longitudinal adjustment upon the respective tubular uprights.

4. A collapsible gym unit as defined in claim 3 wherein an abdominal board is extended between the base assembly and the abdominal bar, foot strap means on the abdominal bar for releasibly receiving and retaining one end of the board upon the abdominal bar and means for releasably securing the other end of the abdominal board to the base frame assembly.

References Cited in the file of this patent

UNITED STATES PATENTS

715,530	Wallace	Dec. 9, 1902
860,517	Berglund	July 19, 1907
2,062,813	Knourek	Dec. 1, 1936
2,240,228	Schall	Apr. 29, 1941
2,357,819	Greer	Sept. 12, 1944