United States Patent [19]

Walker

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[45] **Jan. 9, 1973**

[54] COMPACT AND STORABLE EXERCISING APPARATUS

[76] Inventor: **Wendell R. Walker,** 2026 E. Silver, Tucson, Ariz. 85719

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[21] Appl. No.: **179,748**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 65,193, Aug. 24, 1970, abandoned.

[52] **U.S. Cl.** .....**272/58,** 272/62, 272/63, 272/83 R, 297/118

[51] **Int. Cl.**.....**A63b 1/00,** A63b 3/00, A63b 21/02, A63b 21/10

[58] **Field of Search** ...272/58, 57 R, 60, 62, 63, 83 R

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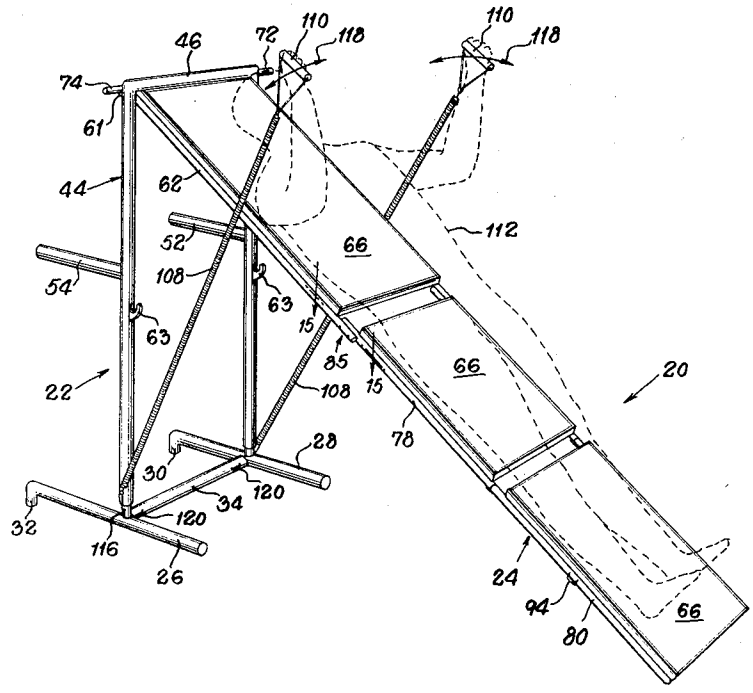
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Primary Examiner—Anton O. Oechsle
Assistant Examiner—H. G. Strappello
Attorney—Samuelson & Jacob

[57] **ABSTRACT**

A compact and readily storable exercising apparatus. The apparatus in its folded form resembles a chair and may be so utilized. It comprises an upright stand member including a support base, a pair of tubular uprights, a U-frame adjustably telescoped on the uprights and a pair of arm pieces projecting from the legs of the U, and a three piece foldable board, one end of which may be engaged with pairs of supporting hooks on the stand with the remainder of the board arranged in accordance with the exercise program being undertaken. The board may be folded and supported by the arm pieces and uprights to yield the chair-like structure. With the board disengaged from the stand, the latter may be adjusted in height and utilized in chinning and lift-off exercises. A pair of tubular springs and hand pieces are stored in the hollow arm pieces and are attachable to points on the stand member for use in various parts of an exercise program.

8 Claims, 15 Drawing Figures



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SHEET 1 OF 7

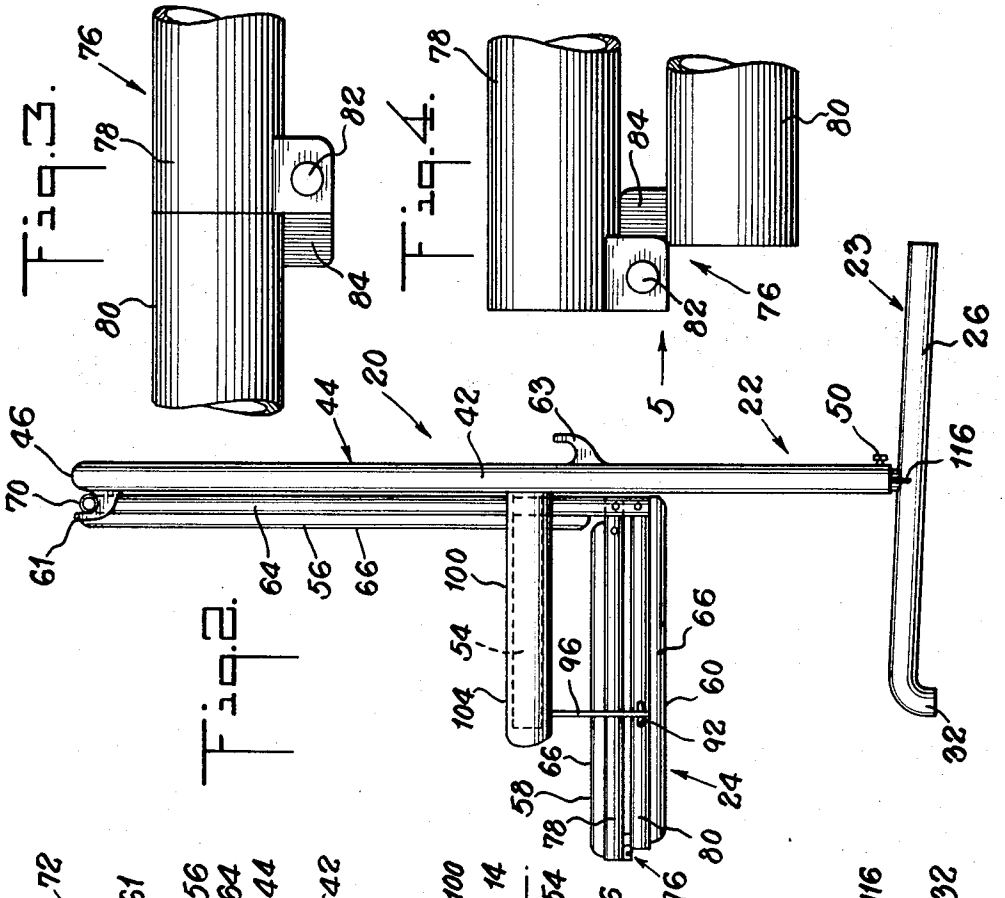


Fig. 3.

Fig. 4.

Fig. 2.

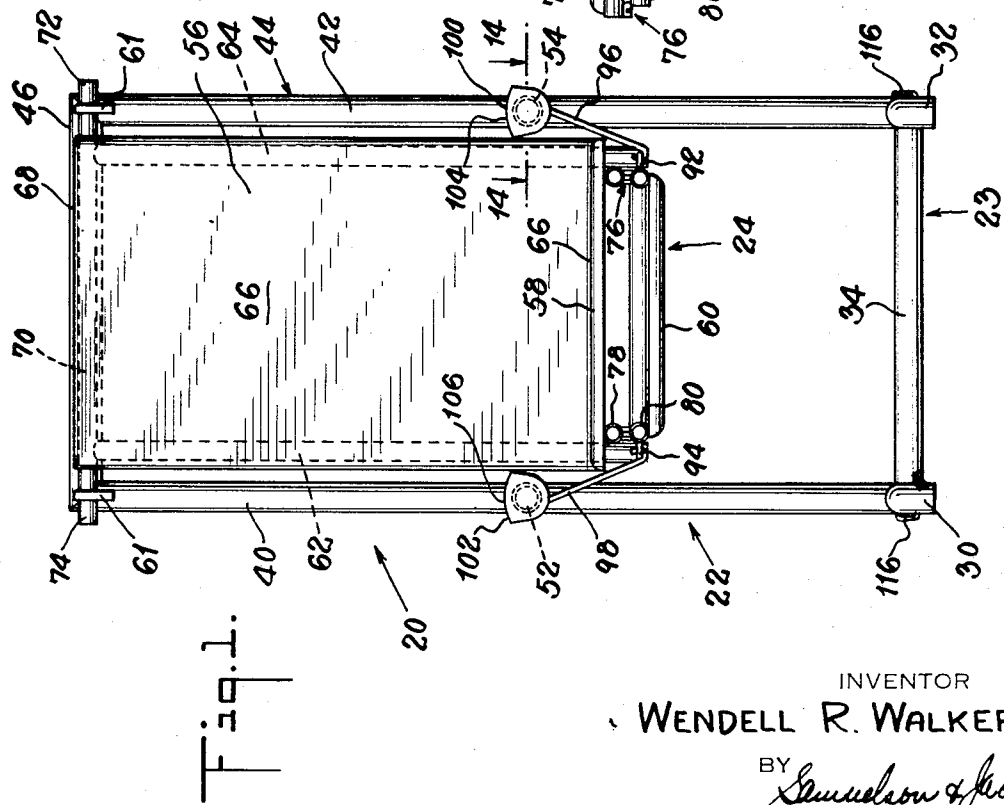


Fig. 1.

INVENTOR
WENDELL R. WALKER
BY Samuelson & Jacob
ATTORNEYS

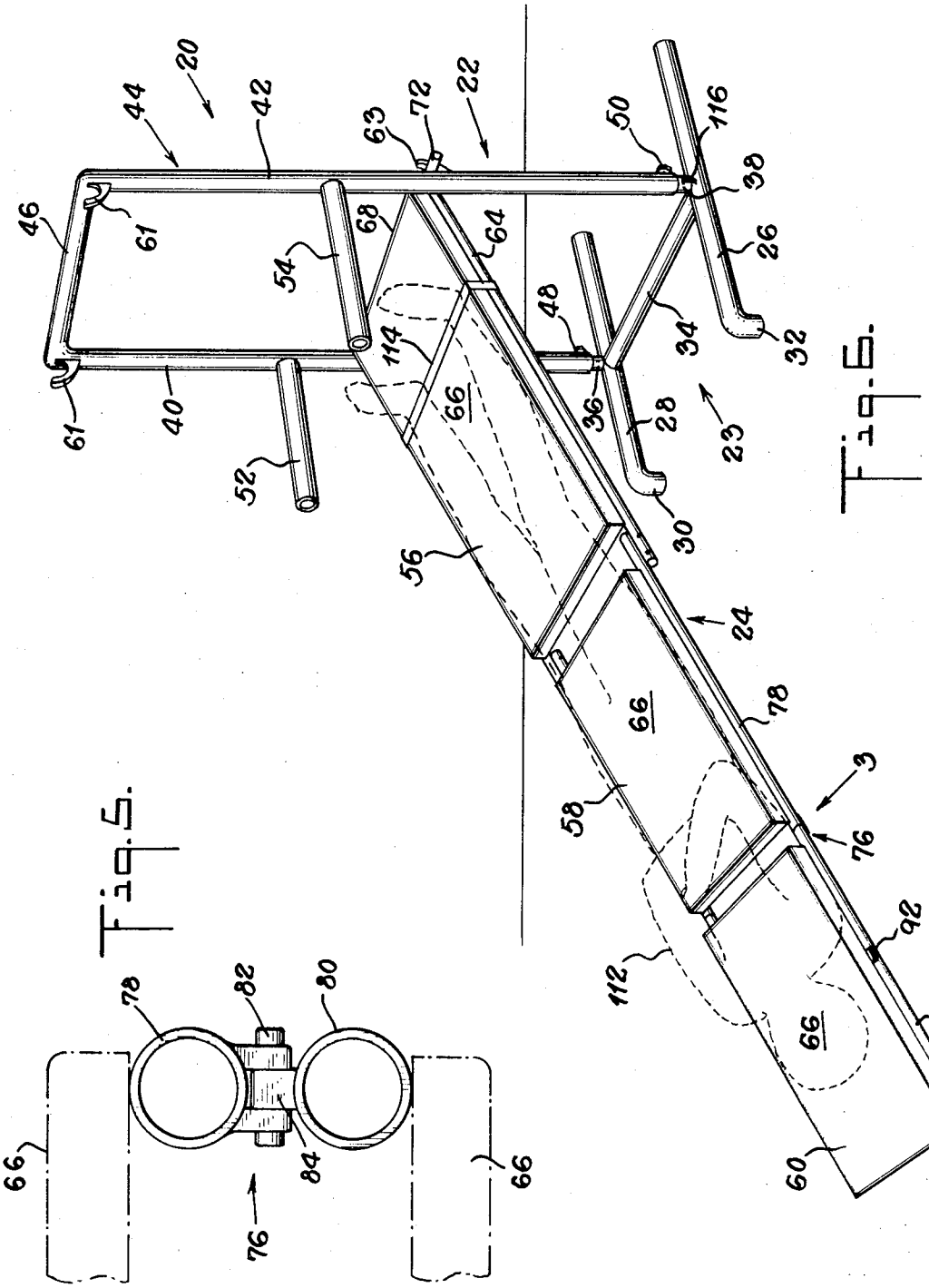


Fig. 6.

Fig. 5.

INVENTOR
WENDELL R. WALKER
BY
Samuelson & Jacob
ATTORNEYS

Fig. 7.

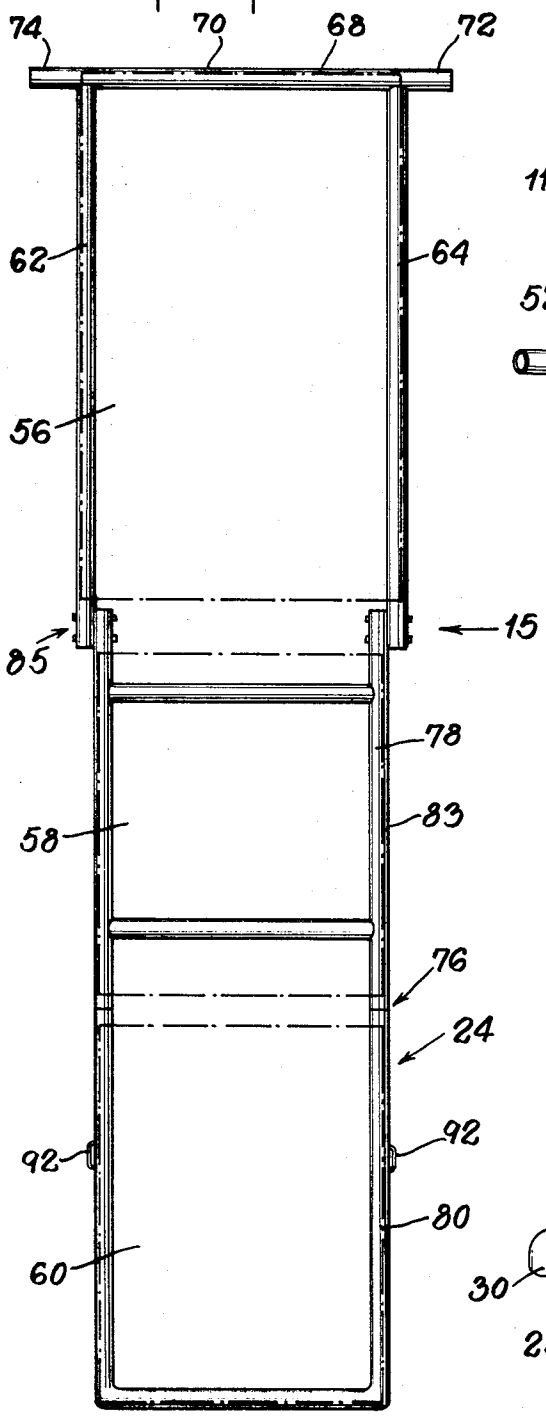
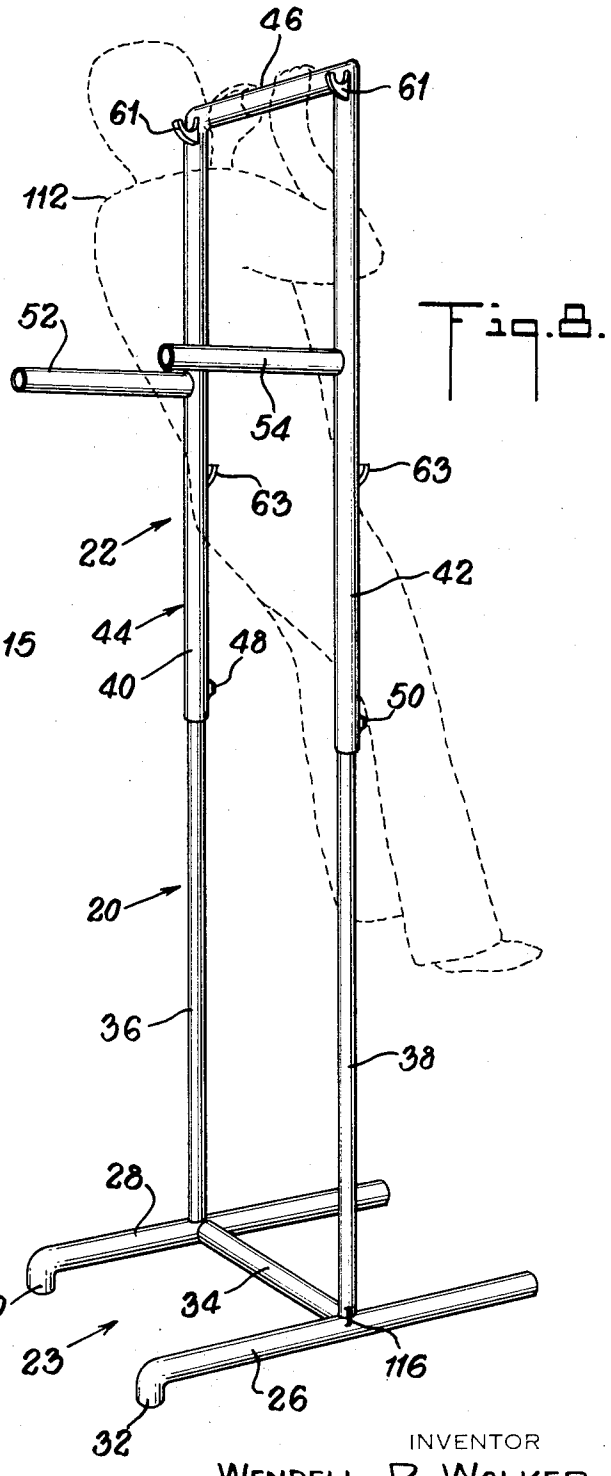


Fig. 8.



INVENTOR
WENDELL R. WALKER

BY
Samuelson & Jacob
ATTORNEYS

Fig. 14.

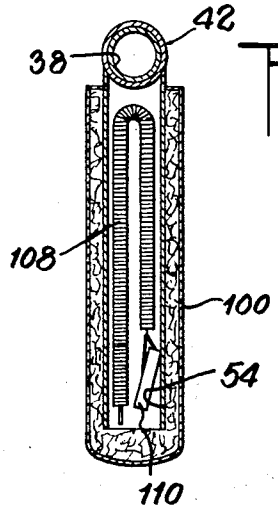


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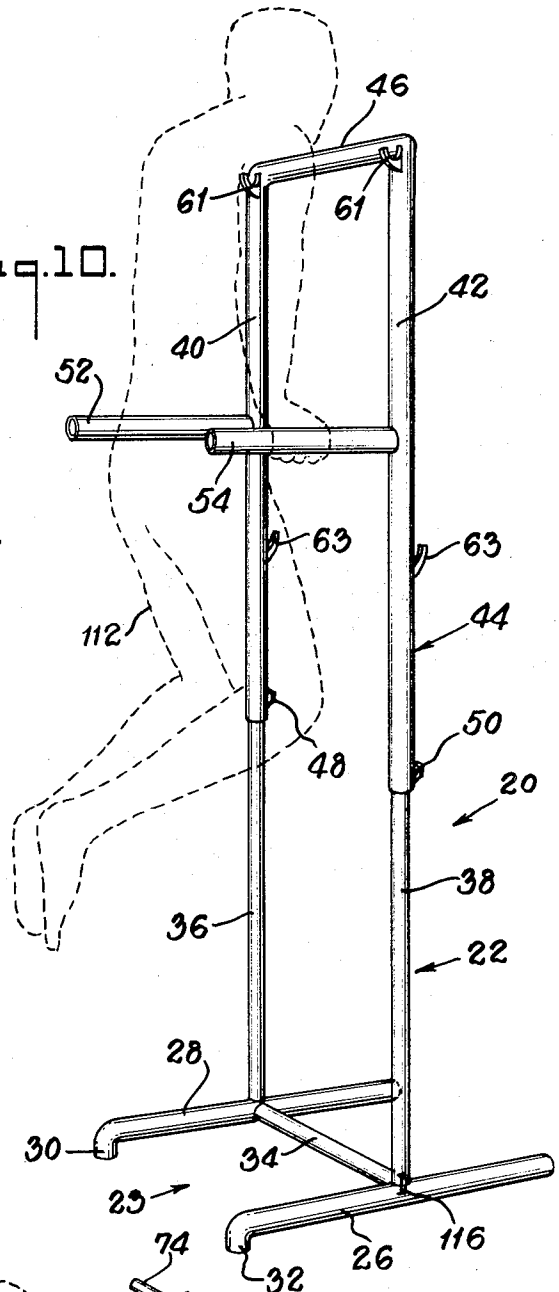
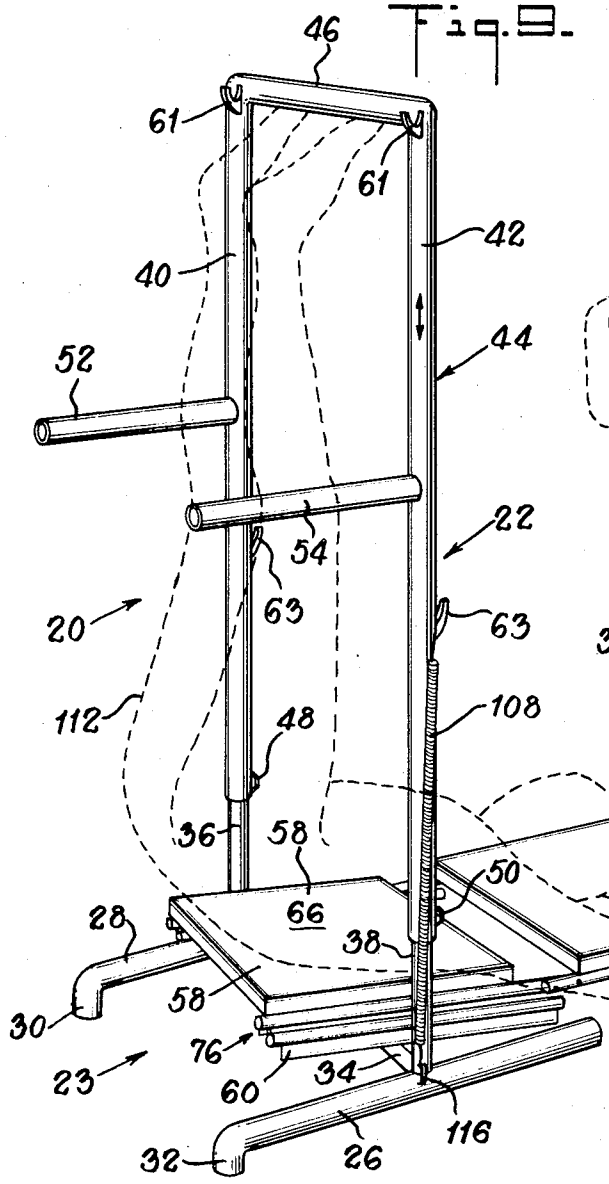


Fig. 9.



INVENTOR
WENDELL R. WALKER
BY Emmelson & Jacob
ATTORNEYS

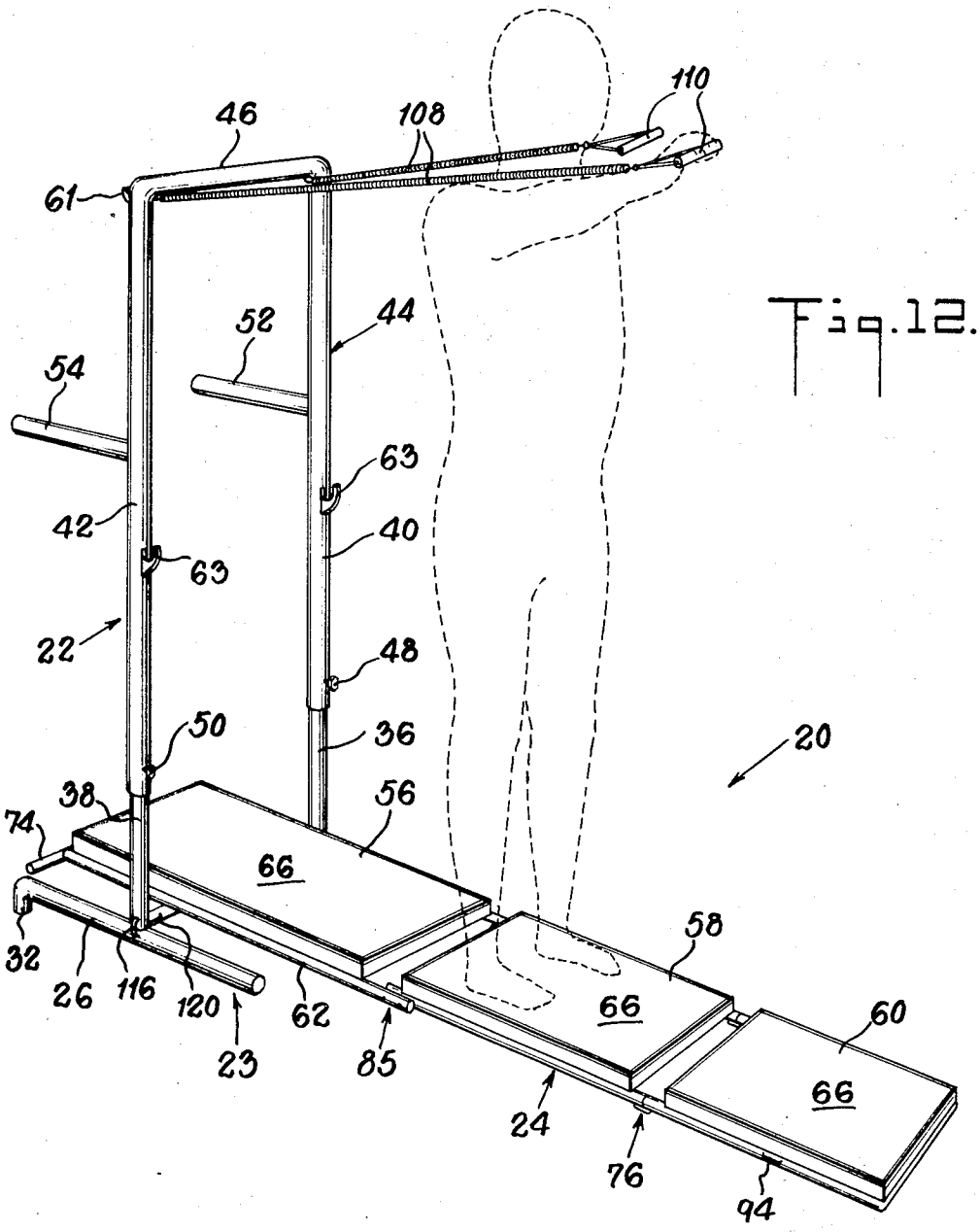


Fig. 12.

INVENTOR
WENDELL R. WALKER

BY
Emmelson & Jacob
ATTORNEYS

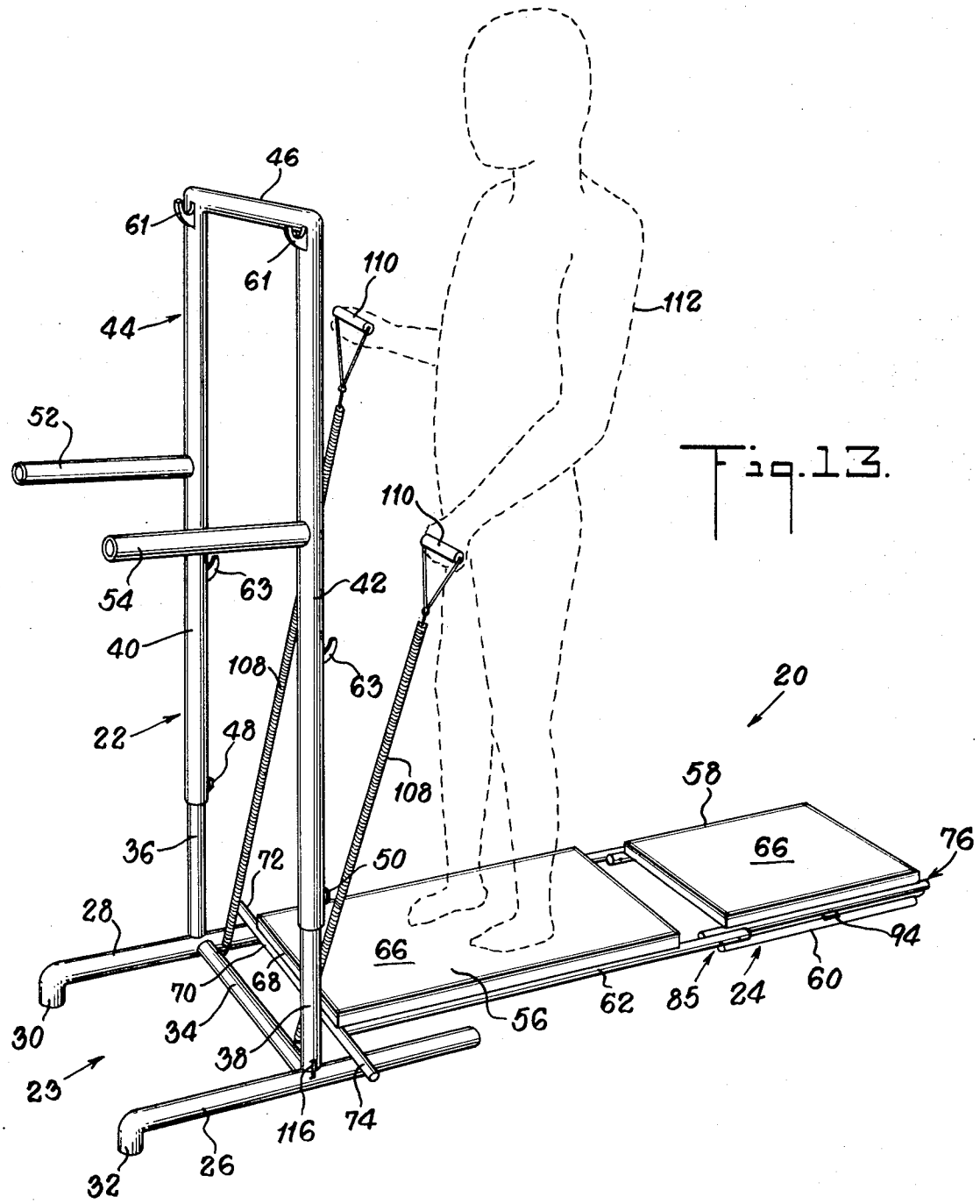
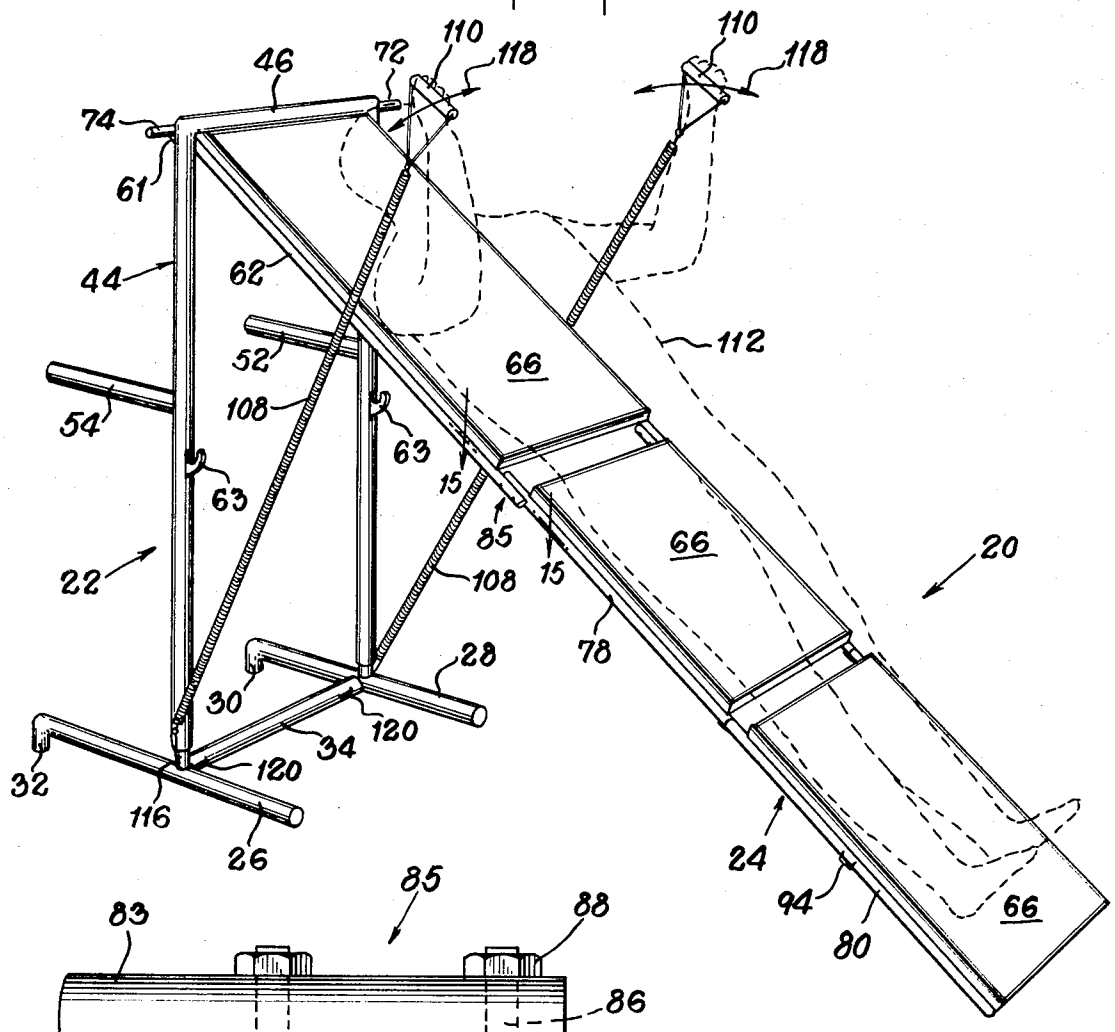


Fig. 13.

INVENTOR
WENDELL R. WALKER
BY Samuelson & Jacob
ATTORNEYS

Fig.11.



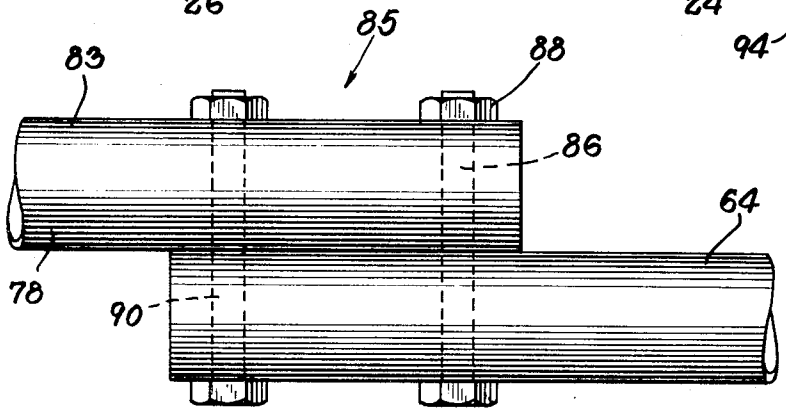


Fig.15.

INVENTOR
WENDELL R. WALKER
BY
Gunnelson & Jacob
ATTORNEYS

COMPACT AND STORABLE EXERCISING APPARATUS

This application is a continuation-in-part of my copending application Ser. No. 65,193, filed Aug. 24, 1970, since abandoned.

This invention relates generally to exercising apparatus, and more specifically relates to collapsible and storable devices enabling performance of a wide range of gymnastic exercises.

Within recent years the increasing urbanization and mechanization of our society has led to a corresponding decrease in the amount of physical exercise in which the members of our society regularly engage. And yet physicians and others more generally concerned with the public health have come to increasingly recognize the causal relationship between good health and the engagement by the individual in a regular program of vigorous physical exercise. This problem is most acute in the case of an urban dweller, who typically resides in an apartment or other limited space dwelling. Not only may the nature of such an individual's employment activities limit his daily physical exercise, but the limited space of his home surroundings and lack of adjoining grounds, may virtually preclude a positive effort by him to establish an exercise program.

In an effort to provide home facilities for rectifying the aforegoing situation, various knock-down or collapsible exercising apparatus have heretofore been proposed. By and large, however, such prior apparatus has not been received with a notable degree of commercial acceptance. Various reasons may be offered in explanation of such result, but certainly among the more significant shortcomings in such prior devices, may be cited the following: first, the apparatus did not offer the capability for a wide enough variety of exercises; second, the apparatus was cumbersome to collapse or convert to the various desired configurations; and third, the prior apparatus was impractical to store in a closet or similar space by virtue of its weight and bulk, and was impractical to store in an open area because of its unappealing appearance.

In accordance with the foregoing, it may be regarded as an object of the present invention to provide exercise apparatus, which is compact and readily collapsible to a storable form, and which enables the user to perform a very wide variety of vigorous exercises.

It is a further object of the invention to provide exercise apparatus which in its functioning configurations is very sturdy and enables an extremely wide variety of vigorous exercises, which is readily converted from configuration to configuration to enable such wide variety of exercises, and which in its collapsed form is both aesthetically acceptable and useful, whereby such apparatus need not be removed from the premises of a user or concealed from view subsequent to employment thereof.

Now, in accordance with the present invention, the foregoing objects, and others, as will become apparent in the course of the ensuing specification, are achieved in a portable exercising apparatus, which in its folded form resembles a chair and may be so utilized. The apparatus includes: an upright stand member having a support base, a pair of tubular uprights, a U-frame adjustably telescoped upon the uprights, and a pair of tubular arm pieces projecting horizontally from the legs of the U and a three piece foldable board, one end of which may be engaged with pairs of supporting hooks on the stand, with the remainder of the board arranged in accordance with the exercise program then in progress. The board may be folded and supported from the arm pieces and uprights to yield the chair-like structure. With the board disengaged from the stand, the latter may be adjusted in height and utilized in chinning and lift-off exercises. A pair of tubular springs and detachable hand pieces are stored in the hollow arm pieces and are attachable to points of the stand member for use in various parts of an exercise program. The said board, when disengaged from the hook pairs, may also be made to overlie portions of the stand base, and with the user reclining on the board, various exercises wherein the user interacts with elements of the stand may be performed.

The previously set forth and other objects, advantages, features and uses will be apparent during the course of the following discussion, when taken in conjunction with the accompanying drawings, wherein:

FIG. 1 is a front elevational view of exercising apparatus of the present invention;

FIG. 2 is a side elevational view of the FIG. 1 apparatus;

FIG. 3 is a side detail view of the joint between the second and third sections of the support board of the apparatus, with said sections in an open position, viewed in the direction of arrow 3 of FIG. 6;

FIG. 4 is a side detail view similar to FIG. 3, but depicting said sections in a folded position;

FIG. 5 is an end detail view, viewed in the direction of arrow 5 of FIG. 4;

FIG. 6 is a perspective view setting forth the arrangement of the exercising apparatus for performance of sit-up exercises;

FIG. 7 is a plan view of the bench portion of the apparatus;

FIG. 8 is a perspective view showing the stand portion of the apparatus in use in a chinning exercise;

FIG. 9 is a perspective view showing the arrangement of the exercising apparatus for performance of leg push exercises;

FIG. 10 is a perspective view showing the stand portion of the apparatus in use in a lift-off exercise;

FIG. 11 is a perspective view showing the arrangement of the exercising apparatus during performance of shoulder drawing exercises;

FIG. 12 is a perspective view showing the arrangement of the exercising apparatus during performance of over-the-shoulder drawing exercise;

FIG. 13 is a perspective view showing the arrangement of the exercising apparatus during performance of vertical arm draw exercises;

FIG. 14 (on the same sheet as FIGS. 9 and 10) is an enlarged, longitudinal sectional view taken on lines 14—14 of FIG. 1, viewed in the direction of the arrows, showing the storage of the tubular springs and hand pieces; and

FIG. 15 (on the same sheet as FIG. 11) is an enlarged side detail view of the joint between the first and second sections of the support board of the apparatus, viewed in the direction of arrow 15 of FIG. 7.

In the drawings, wherein for the purpose of illustration, there is shown a preferred embodiment of the invention and wherein like numerals designate like parts throughout the same: FIGS. 1 and 2 are front and side elevational views respectively of exercising apparatus 20 of the invention. The views of FIGS. 1 and 2 actually depict apparatus 20 in its fully folded or storable condition. A clearer understanding of the component parts may be obtained by simultaneous examination of the perspective view of FIG. 6, which shows apparatus 20 in one of its exercising configurations, more specifically in the arrangement utilized for performance of sit-up exercises.

As may thus be seen from the three specified figures, apparatus 20 includes, generally, an upright stand member 22 and a foldable support board 24. Stand member 22 comprises a base 23 including a pair of tubular support legs 26 and 28 turned down at the forward ends 30 and 32 thereof to provide additional support during the exercise functions—which are generally performed from this side of stand 22—and a cross element 34 connecting legs 26 and 28. A pair of tubular uprights 36 and 38 extend upwardly from the approximate mid-points of legs 26 and 28. Only the ends of such uprights are seen in the referenced figures. Their extent may be seen, for example, in FIG. 8, which will subsequently be referred to in greater detail.

Telescoped upon uprights 36 and 38 in height-adjustable fashion is a tubular U-frame 44, comprising vertically disposed legs 40 and 42 and a base portion 46, such base portion 46 con-stituting the upper boundary of stand 22. A pair of locking means 48 and 50 in the form of a threaded member passing through each leg of U-frame 44 and a knob for advancing each member, are provided for locking the U-frame at a selected height during exercise functions. A pair of tubular arm pieces 52 and 54 project from U-frame 44. These arm pieces are, as seen in FIG. 1, instrumental in establishing a chair-like appearance in the folded apparatus; as will be seen, they are also utilized in various of the exercises performed on apparatus 20, and in addition provide a storage function to be described below. U-frame 44 is provided with pairs of receiving hooks at 61 and 63 each such pair including two hooks at corresponding vertical positions on legs 42 and 40. In the arrangement depicted hook pair 61 is close to the top of frame 44, with pair 63 below the mid-point of the frame.

Board 24 is comprised of three adjoined sections, namely, a first section 56, which is somewhat longer (and wider) than second and third sections 58 and 60. As may be best seen in the plan view of FIG. 7, each section of board 24 is formed from a pair of parallel tubular members, such as members 62 and 64 in section 56 and an overlying pad 66 of fabric or the like, which is secured to the parallel tubular members by any convenient means, including e.g., U-bolts or the like. The end 68 of first section 56 terminating board 24, is provided with a cross-piece 70 which is joined to members 62 and 64. This cross piece 70 includes end portions 72 and 74 which extend beyond the sides of board 24 and are receivable in the hook pairs 61 and 63 at U-frame 44.

The manner in which the several board sections are pivotally adjoined is best seen in the detailed fragmentary views of FIGS. 3, 4, 5, and 15. In the case of FIGS. 3, 4, and 5, the joint 76 between second section 58 and third section 60 appears in side and end detail. It is seen that tubular members 78 and 80 of sections 58 and 60 are hinged on a pin 82 so that the board sections may be folded as in FIGS. 4 and 5 with projection 84 bearing against member 78; or alternatively the tubular members (and corresponding board sections) may be aligned as in FIG. 3. It will be noted that in such aligned position the adjacent ends of members 78 and 80 abut one another, restraining further opening of the associated sections and providing a rigid structure with respect to a body overlying the thus adjoined sections (as seen in FIG. 6).

The joint 85 between first and second board sections differs from joint 76 as is seen in the top detail view of FIG. 15.

In the case of joint 85, the tubular members 64 and 83 of the board sections overlap somewhat with a fixed bolt 86 passing through the overlapped pieces and being retained by a fastener 88; and a removable bolt 90 passing through the overlapped pieces at a point spaced from fixed bolt 86. The net effect of such arrangement is that by removing bolt 90, the first and second board sections 56 and 58 are free to fold upon one another, whereas inserting bolt 90 with the sections 56 and 58 aligned provides rigid resistance to departure of the adjoined sections from their aligned position.

With the aid of the foregoing, the manner in which the present invention functions to achieve the various useful configurations may be understood. Thus in FIGS. 1 and 2, it is seen that in the folded, storable position of apparatus 20, section 56 is folded at right angles with respect to both section 58 and section 60 which is folded under section 58. Stand 22 is at its minimum height (untelescoped) and end portions 72 and 74 are anchored within hook pair 61 so that section 56 is vertically disposed with pad portion 66 effectively acting as a back rest for an individual wishing to sit in the "chair" and more specifically, upon pad 66 of section 58.

In order to retain the folded sections 58 and 60 in their shown positions, a pair of eyes 92 and 94 are provided at the lateral sides of section 60. These eyes 92 and 94 are engaged by the ends of a pair of hooks 96 and 98 which depend from a pair of arm covers 100 and 102 and may be swiveled. The latter are simple, generally tubular elements, closed at one end and flattened somewhat at the tops 104 and 106, and which slip over arm pieces 52 and 54, and serve several functions.

First, such covers provide an aesthetic covering to what would otherwise be bare open ended tubular stock, and thus enhance the chair-like appearance of apparatus 20 in its folded configuration. Second, the flattened portions 104 and 106 provide a comfortable arm-rest when apparatus 20 is used as a chair. Third, as has been indicated, such covers provide support points for the aforementioned hooks 96 and 98. Finally, as is best seen in the cross-section shown in FIG. 14, taken along the line 14—14 of FIG. 1, the covers 100 and 102 both conceal and retain a tubular spring 108 and attached foldable hand piece 110 which are stored within the tubular arm pieces 52 and 54 when apparatus 20 is folded. These elements are used in various exercises which may be performed on the apparatus.

In FIG. 6, which has been referred to heretofore, apparatus 20 is configured so as to enable a user to perform sit-up exercises. For such purpose the end portions 72 and 74 of board 24 are engaged with hook pair 63 at the rear of frame 44 whereby both the hook pair and legs 42 and 40 of the U firmly anchor board 24 against slippage. The exercising individual 112 reclines on the rigid board with his feet preferably anchored by a strap member 114 extending across section 56 of the board.

In FIG. 8 apparatus 20 is shown in a "chinning" configuration. This configuration may be compared to FIG. 10, which is generally similar and shows apparatus 20 in use in the performance of "lift-off" exercises. In both cases, the stand 22 is seen to be disassociated from board 24 and U-frame 44 is adjusted in height so as to permit the individual 112 to engage in the appropriate exercise.

In FIG. 9 a configuration of apparatus 20 is shown, which permits the performance of leg pushing exercises. As seen therein, the board 24 is detached from stand 22 and with section 60 folded under section 58 but with section 56 extended, the first two sections are rested upon cross member 34 of stand 23. A tubular spring, as seen at 108, is stretched between an eyelet 116 provided at the mid-point of each leg 26 and 28 of the support base, and to the hook pair 63. With the locking means 48, relaxed, U-frame 44 is free to telescope upwardly and downwardly on uprights 36 and 38. The exercise is thus performed by individual 112 reclining upon board 24 with the small of his back against pad 66 of section 58 and his legs extended so that his feet push against base 46 and the bias provided by the tubular springs. It should be observed that with board 24 extended as shown a very firm support against tipping is provided for stand 22. In effect, a horizontal base extending all the way from down-turned portions 30 and 32 of legs 26 and 28 to cross member 70 is provided, and it will also be appreciated that the end portions 72 and 74 of member 70 combine with the separation of legs 26 and 28 to provide a wide stance resisting tipping into or out of the plane of the figure.

In FIG. 11 a configuration of apparatus 20 is shown, which is useful in performing shoulder drawing exercises. The arrangement is reminiscent of that shown in FIG. 6, except that the board 20 is now seen to be anchored to the top hook pair 61 and to extend rearwardly from stand 22 to define therewith a triangular type of configuration. In the present arrangement, the tubular springs 108 are again secured to the eyelets 116, with the hand pieces 110 however, now being attached to the opposite end of such springs and grasped by user 112 as he lies on his back on the rigid board 24. The exercise is then performed by such user drawing on the hand pieces 110 and or moving them from side to side as suggested by arrows 118. The hand pieces 110 and tubular springs are, of course, those same elements as have been discussed in connection with FIG. 14. The hand pieces and springs are detachable from one another as by means of spring clips or similar devices which are known in the art.

In FIG. 12, apparatus 20 is shown in a configuration utilized for performance of over-the-shoulder drawing exercises. In the arrangement shown therein, board 24 is fully extended and aligned, with section 56 draped over base portion 23 of the stand for stabilizing the apparatus. One end of each of the tubular springs 108 is attached to upper hook pair 61 and the user standing upon board section 58 with his back toward stand 22 then performs the exercise by drawing hand pieces 110 toward him—in an over the shoulder fashion.

Finally, in FIG. 13, a configuration for apparatus 20 is shown which is useful in performing vertical arm draw exercises. In this configuration, sections 58 and 60 of board 24 are folded upon themselves and rest upon the ground, with the cross member 70 of section 56 resting upon legs 26 and 28 of base portion 23 to stabilize stand 22. The attachable ends of tubular springs 108 are secured to a pair of eyelets 120 on cross member 34 of the stand with hand pieces 110 secured to the opposite ends of the springs. With board 24 thus extending rearwardly of stand 22, the individual 112 undertaking the exercise stands upon section 56 and repeatedly draws pieces 110 toward him against the spring bias.

While the present invention has been particularly described in terms of a specific embodiment thereof, it is apparent to those skilled in the art that numerous modifications are possible without departing from the spirit of the invention and the scope of the subjoined claims.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A compact, readily storable exercising apparatus, comprising in combination:

an upright stand member including a support base, a pair of tubular uprights extending from said support base, a tubular U-frame engaging said uprights with the legs of said U adjustably telescoped on said uprights whereby the base portion of said U-frame extends horizontally to define the upper end of said stand member and provide an adjustable-in-height chinning bar, said legs of the U being provided with pairs of bar receiving hooks at equilateral points on said vertically oriented legs; and

a foldable support comprising first, second and third sections, each said section comprising a pair of parallel, tubular support lengths and an overlying pad supported therebetween, said first section having at its end a crosspiece extending beyond said tubular parallels for engaging said hook pairs in said uprights to enable anchoring thereat of the end of said board for exercise and storage functions; said second section being joined to said first section by first pivoting means adapted to enable folding together of or alternatively locking of said first and second sections in a straight line, said third section being joined to said second section by second pivot means adapted to permit said said adjoined sections to open into a fully aligned position and to restrain said sections from opening beyond said aligned position, whereby said open and locked board remains rigid under weight of a user, said three board sections being so dimensioned in proportion to said stand member such that said crosspiece may be anchored in one of said hook pairs and the opposite end of said aligned and rigid board contacted with the ground to provide a support for a user engaged in a reclining exercise and

said crosspiece may be anchored in a hook pair proximate the top of said stand member with said first section extending downwardly, said second section folded at approximately right angles to said first section, and said third section folded under said second section to render said apparatus chair-like in appearance for storage;

said stand member when separated from said support board being utilizable for said chinning function.

2. The invention of claim 1, including a leg strap extending across the pad of said first section toward the end thereof carrying said crosspiece, whereby by rendering said board sections aligned, anchoring said crosspiece at said hook pair with the opposite end of said aligned board on the ground, and reclining on the board with the feet restrained by said strap, a user may engage in sit-up exercises.

3. The invention of claim 1, including clamping means to lock the said U-frame at a selected telescoped position, whereby to selectively vary the height of said stand and chinning bar.

4. The invention of claim 3, including a pair of horizontal tubular arm pieces extending outwardly from the legs of said U-frame at a point beyond the one-half way distance toward the base of said U-frame, said arms being movable in height by adjusting said telescoped U-frame and providing support points for lift-off exercises by a user of said apparatus.

5. The invention of claim 4, including a pair of tubular springs having connection means at each end thereof, a pair of complementary connection means at the said apparatus base for engagement with the said spring ends, and a pair of hand pieces engageable with the opposite ends of said springs; whereby by placing the said board on the ground with the crosspiece thereof over said base to restrain said stand member, and standing upon said board while grasping said hand pieces, a user may engage in arm pull exercises; and whereby by engaging the said crosspiece in an upper pair of said bar receiving hooks rendering said board rigid with the other end at the ground reclining on the angled board, grasping the said handles and pulling over the user's shoulders, said user may engage in shoulder drawing exercises.

6. The invention of claim 5, wherein said tubular legs of said U-frame include a hook pair approximately midway along the length of said legs, said spring end being engageable with said hook pair and said base connection means, whereby by relaxing said clamping means, placing said board over said base to restrain said apparatus, and reclining on said board with the feet extending upwardly and pushing against the base portion of said U-frame, a user may exercise his legs and back muscles against the restoring bias provided by said springs at said telescoped U-frame.

7. The invention of claim 6 including a pair of hollow tubular covers for said arms, said cover being closed at one end and having a pair of elongated hooks swivelably attached thereto, the hook ends being engageable with the said third section of said board when said section is folded for storage of said apparatus, said hooks restraining said second and third sections in their seat-like folded positions, and said covered arms adding to the chair-like appearance of said folded apparatus.

8. The invention of claim 7 wherein said tubular arm pieces are open at the projecting ends thereof, said hand pieces being collapsible, and said hand piece and springs so dimensioned as to be storable in said open tubular arm pieces, the placement of said cover pieces over said arm pieces concealing the said stored pieces and retaining them in storage.

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