

July 12, 1932.

J. M. THOMSON ET AL

1,866,868

EXERCISING APPARATUS

Filed Oct. 19, 1928

4 Sheets-Sheet 1

Fig. 14.

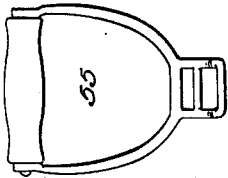


Fig. 13.

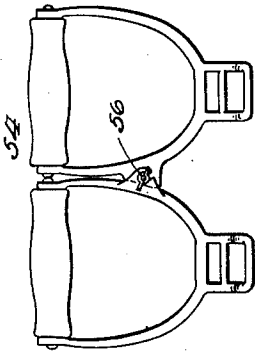


Fig. 1.

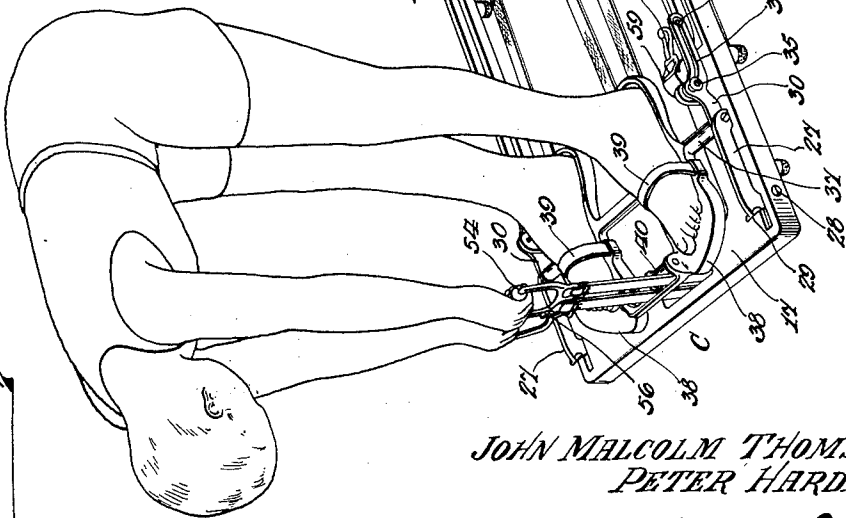
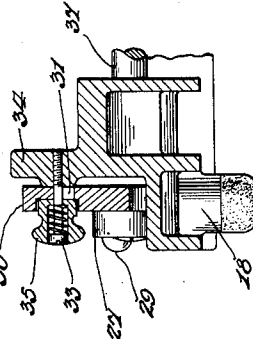


Fig. 12.



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WITNESS *[Signature]*

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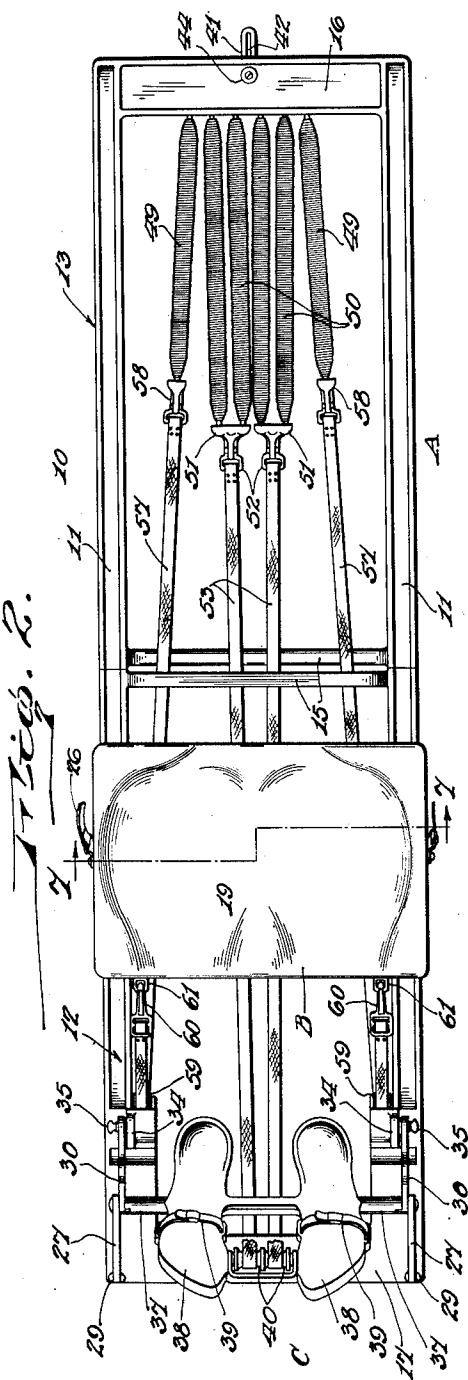


Fig. 3.

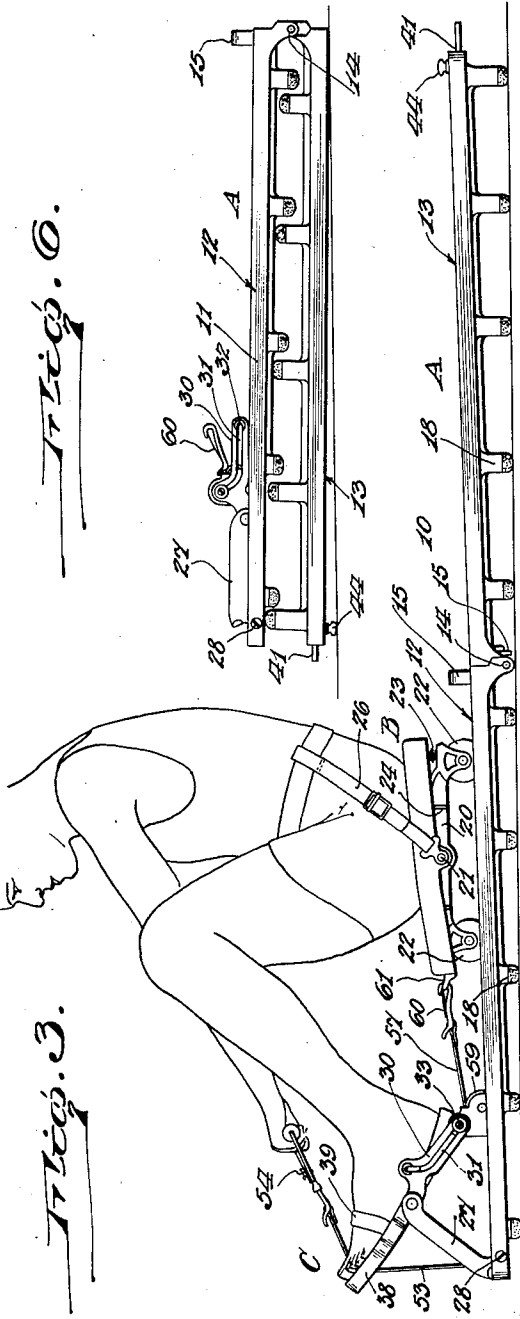


Fig. 3.

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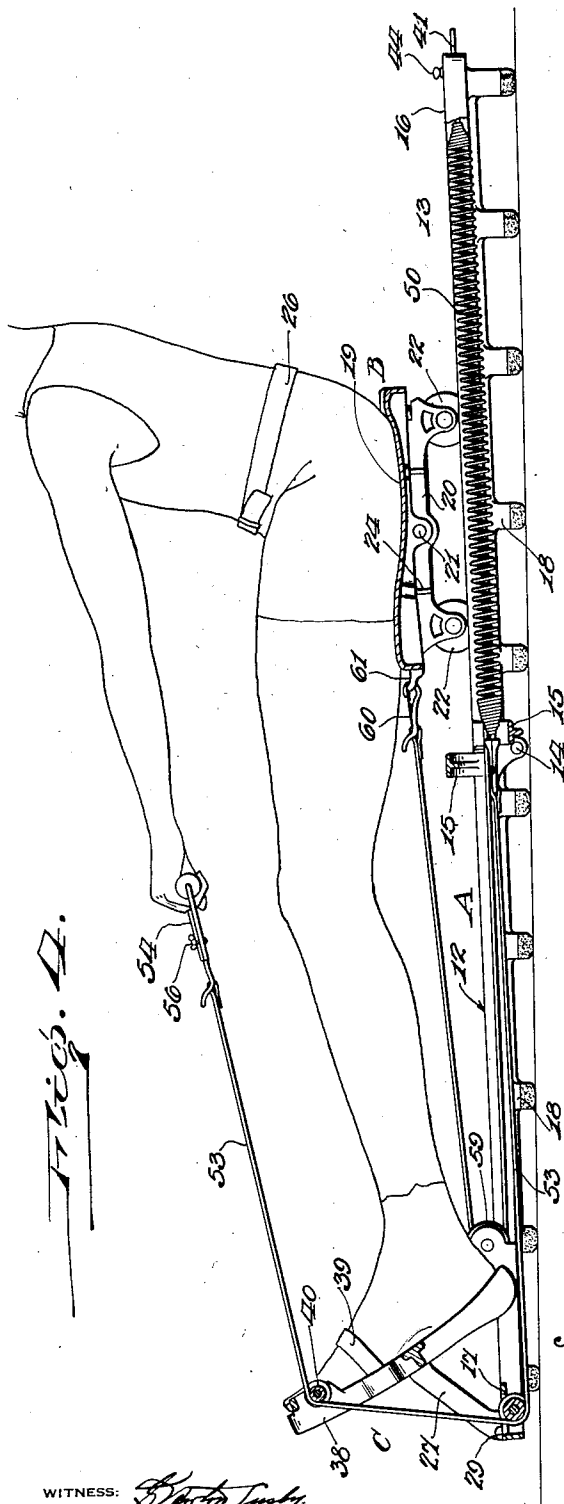
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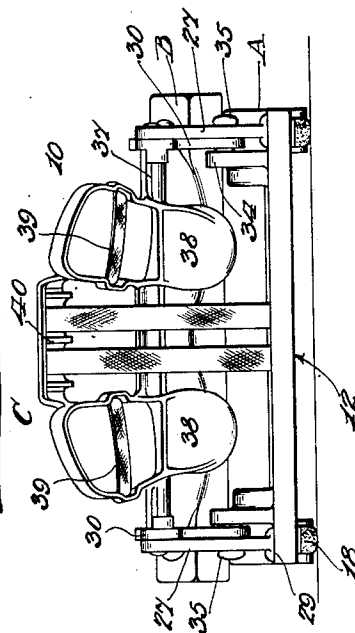
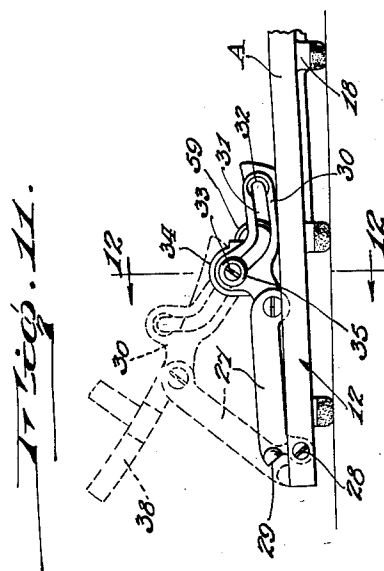
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WITNESS:

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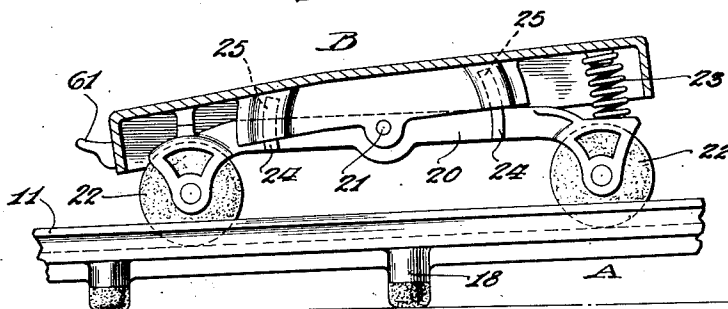
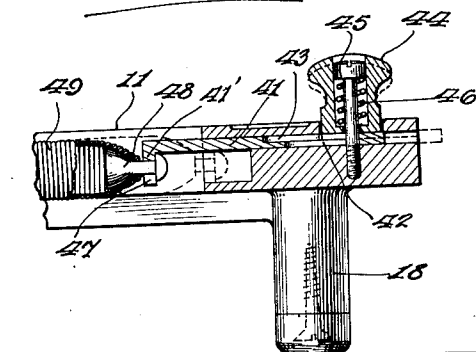
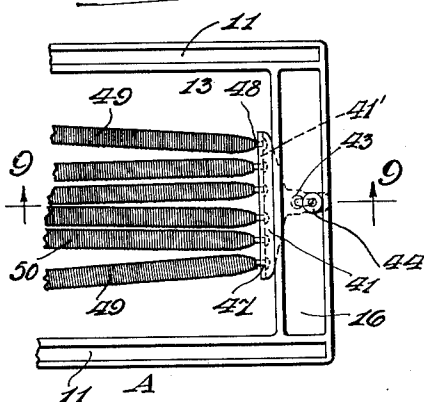
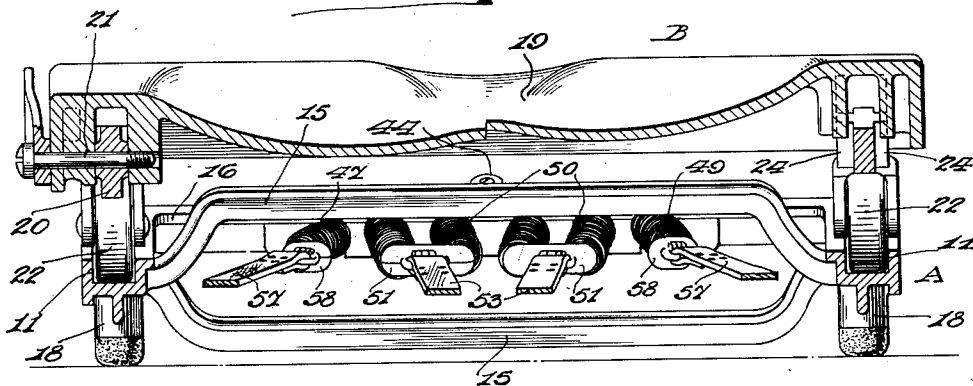


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WITNESS:

WITNESS: *Edith J. [Signature]*

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UNITED STATES PATENT OFFICE

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EXERCISING APPARATUS

Application filed October 19, 1928. Serial No. 313,557.

This invention relates to exercising apparatus and is an improvement of the device shown and described in our co-pending application Serial No. 231,640, filed November 7th, 1927.

The primary object of this invention like that in the above mentioned application, is to provide a portable exercising apparatus by which a user may derive the same exercise indoors that he would outdoors when rowing a boat, to effectively stimulate the vital muscles of the human body which is understood to be essential to good health and perfect physique. This invention differs only in various details of construction to simplify and strengthen certain of the parts as will be pointed out hereinafter.

Another object of the invention is to provide a portable exercising apparatus which includes a pair of spaced foldable rails on which a sliding seat is removably mounted for an operator to sit upon with his feet against a foot rest at one end of the rails, there being hand tension pull straps for an operator to pull upon and other tension straps attachable to the seat against the action of which the operator pushes, the foot rest being foldable to a flat position when not in use and the seat being removed from the rails to permit the rails to be broken at their hinged joints to fold with the tension straps, in a compact manner for convenient packing into a suit case and for storing purposes.

With these and other objects in view, the invention resides in certain novel construction and combination and arrangement of parts, the essential features of which are hereinafter fully described, are particularly pointed out in the appended claims, and are illustrated in the accompanying drawings, in which:—

Figure 1 is a perspective view of our improved exercising apparatus showing a person in position thereon for a standing exercise.

Figure 2 is a top plan view of the apparatus set up for a sitting exercise.

Figure 3 is a side elevation showing a person in a seated posture with the seat in a forward position.

Figure 4 is an enlarged vertical longitudinal sectional view through the apparatus with the seat in a rearward position.

Figure 5 is a front end elevational view.

Figure 6 is a side elevation of the track in a folded position.

Figure 7 is an enlarged vertical transverse sectional view on the line 7—7 of Figure 2.

Figure 8 is a top plan view of the rear end of the track showing the spring attaching bracket in a loosened position.

Figure 9 is a detail vertical longitudinal sectional view on the line 9—9 of Figure 8, but showing in dotted lines the position of the spring attaching bracket in a locked tensioned position.

Figure 10 is an enlarged detail vertical longitudinal sectional view through the seat.

Figure 11 is a side elevation of the foot rest in folded position in full lines and in a set-up position in dotted lines.

Figure 12 is a vertical transverse sectional view on the line 12—12 of Figure 11.

Figures 13 and 14 are detail views of two different types of hand grips.

Referring to the drawings by reference characters, the numeral 10 designates our improved exercising apparatus in its entirety which includes in general a foldable track structure A for slidably supporting a seat B and a foot rest C. These parts will be fully described in the order named.

The track section A includes spaced channeled rails 11, 11, each embodying a pair of rail sections 12 and 13 of equal length hingedly connected together at their meeting ends by a rule joint 14 which breaks upwardly to enable the folding of the sections one upon the other when the seat B is removed from the rails and the foot rest C folded. Brace

bars 15 bridge the opposed rail sections adjacent the hinge joint to strengthen the same, the bar bridging the sections 12 also acting as a hand grip by which the track section 5 may be lifted to allow the rail sections 12 and 13 to fold upon each other as shown in Figure 6 of the drawings. An end plate 16 is formed integral with the outer ends of the sections 13 while the outer ends of the rail sections 12 are cast integral with the platform 17. The underside of the rail sections are provided with spaced feet 18 for supporting the track above the floor, the feet of one rail section being staggered with respect to the feet of the adjacent rail section so that the legs will not strike each other when folded which allows more compact folding of these parts. The legs gradually increase in length from front to rear to support the track section in a forwardly inclined position which necessitates the pushing of the seat upgrade in its backward movement.

As hereinbefore stated, the seat B is movable longitudinally over the rails of the track 25 A and is preferably constructed of cast aluminum of a width approximating the width of the track and which has a cavity 19 in the top thereof to comfortably receive a person in a sitting posture and is so shaped 30 to prevent any accidental slipping of the person when performing the exercise. The body of the seat is pivotally mounted to an under carriage 20 as at 21, the said carriage having four wheels 22 journaled therein, the wheels 35 being arranged in pairs for reception in the channels of the spaced parallel tracks. The body of the seat is normally held in a slightly forwardly pitched position by expansion springs 23 interposed between the rear underside of the seat and the rear of the carriage which facilitates a slight rocking movement to be imparted to the seat during the exercising operation and which serves to take up any shock during backward rocking movement 40 of said seat. The inner side bars of the carriage are disposed in close proximity to the inner side flanges of the seat body and are provided with outwardly extending lugs 24 which ride in arcuate grooves 25 provided 45 in the side flanges of the seat. The lugs and grooves serve to guide the seat in its rocking movement upon the carriage. The seat carries a strap harness 26 for attachment to the waist of a user to prevent possible slipping 50 off the seat during the exercising operation.

The foot rest section C comprises a pair of opposed legs 27 pivoted at the front of the track sections on the platform 17 as at 28, the said legs having feet 29 for rest upon 60 the platform when the foot rest is in a set-up position as shown in Figures 2 to 5 inclusive. Pivotally connected to the legs 27 are links 30 which are provided with angular cam slots 31, the slots terminating at 65 their rear ends in enlarged recesses 32.

Pins 33 pass through the slots 31 and enter ears 34 rising from the platform, while a locking knob 35 is slidable on each pin and pressed inwardly by an expansion spring. Each knob 35 is provided with a recess, as 70 shown, (see Figure 12) to receive its expansion spring. When the legs 27 are swung up, they carry the links 30 therewith until the pins 33 strike the rear end of the slot whereupon the spring actuated knobs 35 75 automatically seat themselves in the enlarged recesses 32 whereby the foot rest is locked in a set-up position. To fold the foot rest flat against the platform, the knobs 35 are retracted by pulling outward thereon 80 and the legs manually swing backward. Pivoted at the meeting ends of the legs and links is a transverse bar 37 and on which spaced foot plates 38 are fixedly mounted. Foot straps 39 are provided on the foot 85 plates for holding the feet of a user thereon, while journaled for rotation between the foot plates at the toe ends thereof are rollers 40 for a purpose to be presently described.

Slidably mounted on the underside of the 90 end plate 16 is a tension spring attaching plate 41 having a depending flange 41' extending transversely thereof while an elongated slot 42 is provided therein. The inner end of the slot is provided with an enlarged recess 43 adapted to receive a locking knob 44 when the attaching plate is drawn back to the dotted position in Figure 9 of the drawings. The knob 44 is slidably 100 mounted upon a pin or bolt 45 which passes through the slot 42 and is threaded to the end plate, while an expansion spring 46 acts upon the knob to automatically seat the same when the recess 43 aligns therewith. The flange is notched as at 47 to receive the 105 headed anchor pins 48 carried by the ends of seat tension springs 49 and tension pull springs 50. Certain of the tension pull springs are connected in pairs at their forward ends by coupling members 51 which 110 have eyes 52 for the attachment of pull straps 53. Although I have shown the pull tension springs arranged in pairs, they may be arranged singly or in any desired multiple depending upon the tension desired. In 115 attaching the anchor pins 48 to the attaching plate 40, the knob is pulled up to release the plate and the same pushed forward. The anchor pins are placed in the notches 47 and the plate moved backward 120 until the knob snaps into the recess 42 whereupon it locks the plate against movement with the headed anchor pins concealed beneath the end plate 16. Tension on the springs to effect their removal can be effected 125 by releasing the lock knob 44 from its recess at which time the tension of the springs will pull the anchor plate forwardly to allow for the removal or attachment of springs thereto. 130

The free ends of the pull straps 53 pass over the rollers 40 and are shown in the preferred embodiment as connected to a double hand grip 54 although single hand grips 55 may be respectively attached thereto as shown in Figure 14 of the drawings. The double hand grip constitutes two separate grip members adjustably connected together by suitable connecting means 56.

The outer tension springs 50 are connected to non-elastic straps 57 by connectors 58, while the straps extend forward and over pulleys or rollers 59 each journaled in a housing vertically projecting from the structure forwardly of each side rail, the housings being open at their rear and merging into the platform 17 at opposite sides thereof. The ends of the straps carry snap fasteners 60 which engage eyes 61 on the front of the seat. The seat is detachable from the strap to permit of its removal when not in use but when connected therewith, the springs to which the straps 57 are attached places a tension upon the seat and normally holds the same at the limit of its forward movement. When the seat is removed from the track, the snap fasteners 60 strike the rollers 59 and cannot pass therearound which prevents the straps from entirely pulling past the rollers. The seat tensioning arrangement as just described enables tension upon the seat from the instant of rearward movement thereof with the seat close to the foot rest and is an improvement upon the structure of our Patent No. 1,750,549 in which the seat is connected to the front of the frame, the cords being spaced under resistance when the seat is pushed back a relatively long distance as compared with the action in the present structure. It is an improvement in which the cords or springs attached to the front of the frame are short enough to start the tensioning with the seat fully advanced, because said cords or springs would be too short and their extension toward the end of the rearward seat movement would be so great as to endanger breaking or to impose too great tension on the seat.

In use for performing a rowing exercise, the apparatus is set up in the manner shown in Figures 2, 3 and 4 of the drawings, whereupon the operator sits upon the seat B with his feet against the foot plates 38 and grasps the double hand grips 54. The seat being normally in a forward position, the first movement of the seat will be in a rearward direction which is accomplished by an operator pushing against the foot plates against the action of the spring tensioned straps 57. Simultaneous with the backward pushing movement, the user pulls upon the hand pull straps 53, thus producing an action similar to that of rowing a boat. Upon reaching the limit of rearward movement, the user releases the foot pressure and the pulling force

whereupon the tension straps return the seat in a forward direction. This operation is continued at even speed until the user has completed his exercise.

If desired, a different type of exercise may be taken as shown in Figure 1 of the drawings, whereupon the seat is removed and the foot rest C folded down flat upon the platform 17 as hereinbefore explained and the user takes a standing position upon the foot plates 38. He is then in a straddling position over the pull straps and may bend over and grasp the hand grips 54 for pulling upward against the tension on the straps.

For shipping and storing purposes, the seat B is removed from the track by first disconnecting the snap fasteners 60 and the foot rest C folded flat against the platform 17. By breaking the rule joint upwardly, the tension of the springs 50 will serve to complete the folding of the rails as an operator need only grasp the transverse brace bar 15. The straps will hang within the folded track without becoming entangled and will readily straighten out when the track is again set up for use. The folded track and seat may be conveniently packed in a suitcase for transporting from place to place and may be readily assembled for use when desired by one unskilled in the art.

While we have described what we deem to be the most desirable embodiment of our invention, it is obvious that many of the details may be varied without in any way departing from the spirit of our invention, and we therefore do not limit ourselves to the exact details of construction herein set forth nor to anything less than the whole of our invention limited only by the appended claims.

What is claimed as new is:—

1. In an exercising apparatus, a seat adapted to be propelled back and forth over a track comprising a wheel carriage, a seat body pivoted thereon, springs acting upon said seat body to normally tilt the same in a forward direction, and coacting guide elements between said carriage and said seat body for guiding said seat body in its rocking movements upon said wheel carriage.

2. In an exercising apparatus including a platform, a pair of spaced opposed legs pivoted to said platform, links pivoted to said legs, integral foot plates supported by said links, said links having cam slots therein, and locking pins passing through said cam slots for locking said links in an adjusted position, substantially as and for the purpose specified.

3. An exercising apparatus comprising a rectangular track having spaced longitudinal side rails, a wheel seat slidable over said rails, an adjustable spring attaching plate at one end of said track, contractile springs removably fastened to said spring attaching plate,

and non-elastic pull straps connected to said springs, certain of which straps are connected to said seat while the others are employed for pulling upon during exercise when sitting upon said seat.

4. An exercising apparatus comprising an open rectangular frame having side rails constituting a track, a seat movably mounted on said track, springs connected to the rear end of the frame, cords having a running engagement with the frame at the forward end thereof and connected at their front ends to the seat and at their rear ends to certain of said springs, and pull cords having a running engagement with the frame at the forward end, their rear ends being connected to certain of said springs and their front ends being provided with hand grips.

5. A portable exercising apparatus including a frame having a pair of spaced parallel rails, a seat movable over said rails, foot supporting means at the front of said frame, pulleys at the front end of said frame, flexible inextensible elements passing over said front frame pulleys, tension springs at the rear of said frame, the rearward ends of said flexible inextensible elements being connected to the forward ends of said tension springs, the forward ends of said flexible inextensible elements normally terminating adjacent to said foot supporting means, grips secured to the forward ends of said flexible inextensible elements, pulleys at the sides of the front of said frame adjacent to said foot supporting means, flexible inextensible elements passing over said side pulleys, tension springs secured to the rear of said frame, the forward ends of said last mentioned tension springs being connected to the rearward ends of said last mentioned flexible inextensible elements, and means for connecting said seat to said last mentioned flexible inextensible elements whereby said seat is normally positioned close to said foot rest supporting means.

6. An apparatus constructed in accordance with claim 4 in which the running engagement intermediate the frame and the cords connected to the seat comprises a housing vertically projecting from the frame forwardly of each side rail, said housing being open at its rear and a roller rotatively mounted in said housing.

7. An exercising apparatus comprising a frame including side rails constituting a track, a seat movable over said track, and tensioning means connected at one end thereof to said seat and having a running engagement with one end of said frame, the other end of said tensioning means extending rearwardly from the point of running engagement for connection with said apparatus at a point rearwardly of said running engagement.

8. An exercising apparatus comprising a frame including side rails constituting a

track, a seat movable over said track, and tensioning means connected to said frame adjacent one end thereof and having a running engagement with the other end of said frame for connection with said seat.

9. An exercising apparatus comprising a frame including side rails constituting a track, a seat movable over said track, tensioning means connected at one end thereof to said seat and having a running engagement with one end of said frame, the other end of said tensioning means extending rearwardly from the point of running engagement for connection with said apparatus at a point rearwardly of said running engagement, a second tensioning means having a running engagement with the frame at one end thereof, one end of said second tensioning means being connected to said frame, and gripping means at the other end of said second tensioning means.

10. An exercising apparatus including a frame having spaced parallel rails, a seat movable over said rails, pulleys at one end of said frame, tensioning means passing over said pulleys and being connected to a point rearwardly of said pulleys, the free ends of a portion of said tensioning means normally terminating adjacent said pulleys and having gripping means connected thereto, a second set of pulleys adjacent one end of said frame, the remaining portion of said tensioning means having a running engagement with said second pulleys and being connected to said seat.

11. In an exercising apparatus including a platform, means comprising a pair of spaced opposed legs pivoted to said platform, links pivoted to said legs, a foot plate supported by said means, and cam means associated with said links and said frame for locking said links in an adjusted position.

12. An exercising apparatus comprising a frame, an adjustable attaching plate at one end of said frame, and tensioning means removably fastened to said attaching plate.

13. An exercising apparatus comprising a frame, supporting means comprising a pair of opposed legs pivoted to said frame and links pivoted to said legs, a foot rest pivotally connected to said supporting means, said supporting means providing an elevated and a lowered position for said foot rest, and means for predetermining the elevated position of said foot rest.

14. An exercising apparatus comprising a plurality of sets of spaced parallel rails, pivot members connecting adjacent sets of rails whereby the rails may be held in abutment to form continuous trackways, a seat movable on said trackways, a tensioned pull member at one end of said trackways, and a rigid bar extending transversely of at least one of said sets of rails and connected thereto intermediate the ends of said apparatus.

15. An exercising apparatus comprising a frame, tensioning means connected to said frame, a plurality of hand grips connected to said tensioning means, and means for detachably connecting said hand grips so as to permit the use of said tensioning means individually or collectively.

In testimony whereof we hereby affix our signatures.

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PETER HARDY.