April 25, 1933. P. S. HARDY 1,905,092

EXERCISE MACHINE

Filed Aug. 11, 1931 2 Sheets-Sheet 1

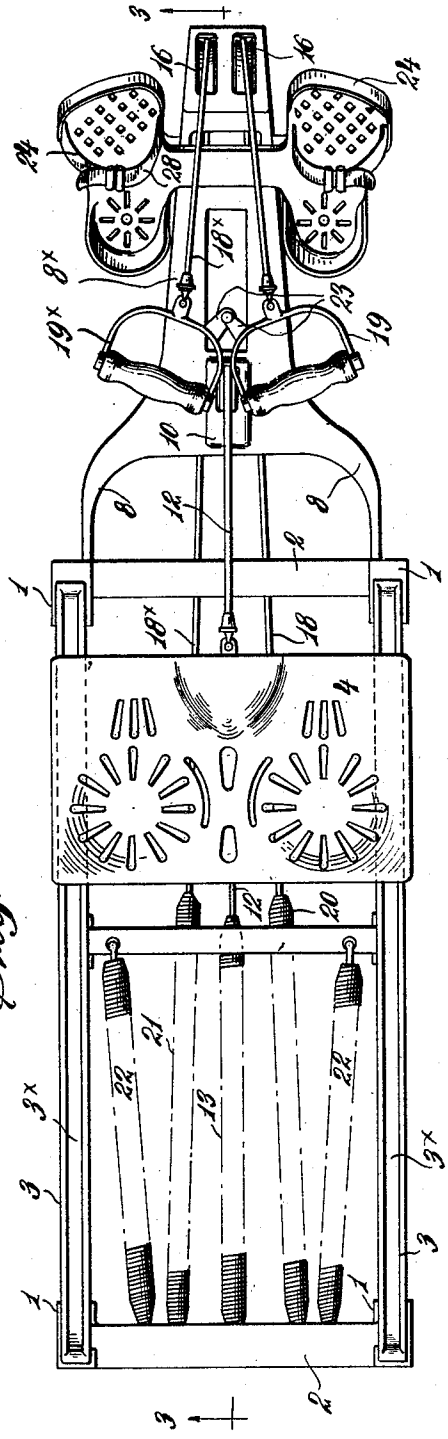

Fig. 1.

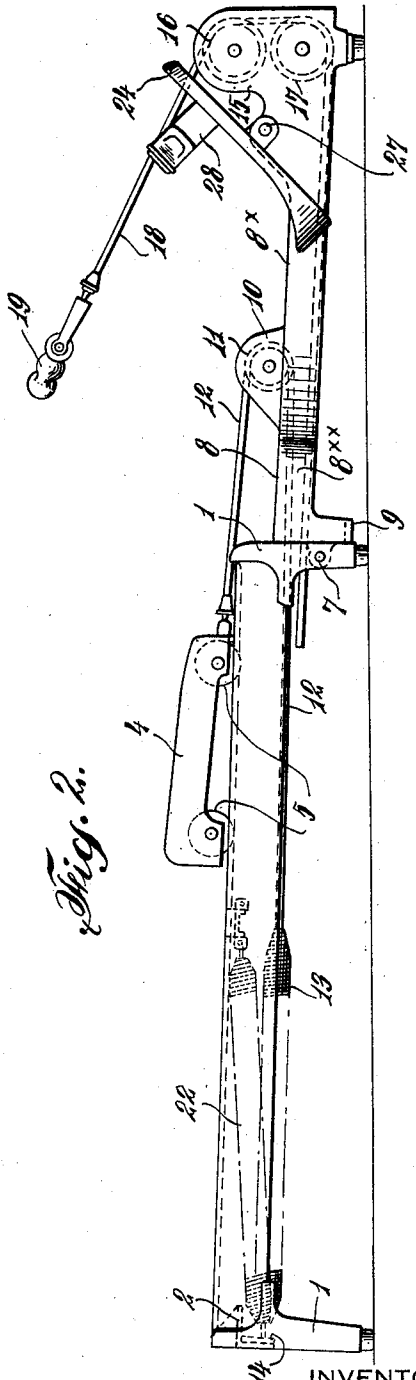

Fig. 2.

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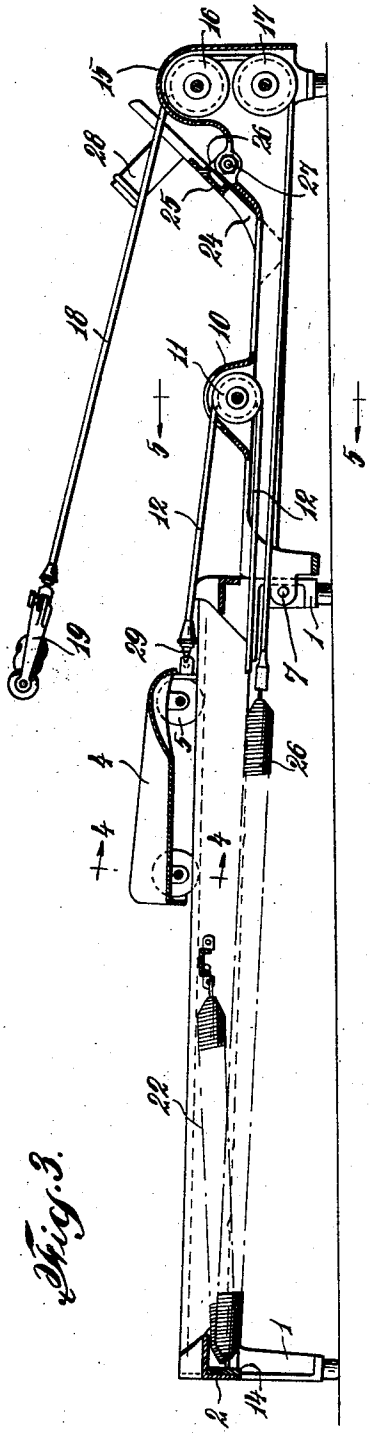

Fig. 3.

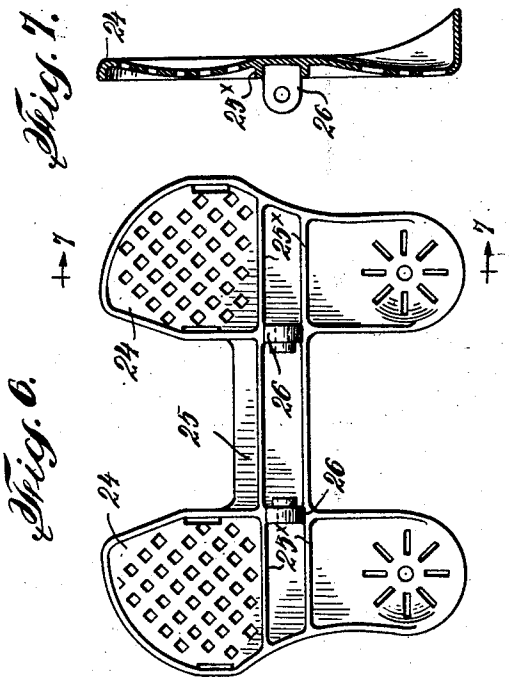

Fig. 6.

Fig. 7.

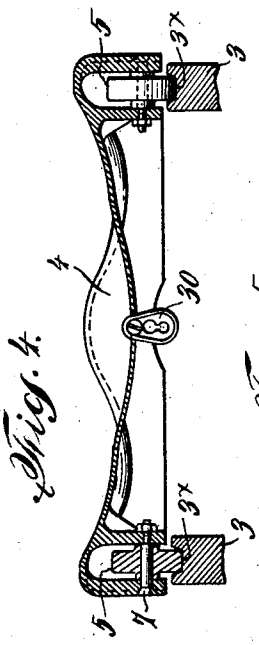

Fig. 4.

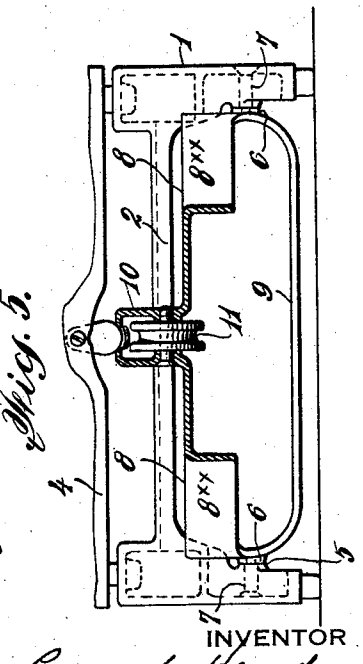

Fig. 5.

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UNITED STATES PATENT OFFICE

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EXERCISE MACHINE

Application filed August 11, 1931. Serial No. 556,380.

The object of this invention is to provide an exercising apparatus of the same general type as that disclosed in the Thompson and Hardy Patent No. 1,750,549 of March 11, 1930 in that the apparatus comprises a pair of spaced rails on which a seat is movably mounted the said seat being provided with a resistance against rearward movement, tensioned hand cords, and a foot rest against which the operator pushes. In the present apparatus however, the apparatus comprises two primary sections of novel form and arrangement, the front section being pivoted to fold under the rear section and being of such form as to combine lightness of construction with great rigidity and strength, providing also a novel form of guiding means for the pull cords. Furthermore, the rear frame section comprises front and rear metallic supporting members adapted to receive and in turn be held in spaced relation by light rails of wood or metal upon which the seat is supported for movement. When the front or supplemental frame section is extended, the tendency of the hand cords, when the device is operated, will be to swing the said frame member upwardly on its pivot, but the said frame member is locked against such movement, however, by a novel method of mutual abutment of the frame members which will permit the supplemental member to be moved under the main member.

Further objects of the invention will hereinafter appear.

The invention will be described with reference to the accompanying drawings in which

Fig. 1 is a plan view of an embodiment of the invention, the supplemental frame member being in extended position.

Fig. 2 is a view in elevation of the same.

Fig. 3 is a longitudinal section on the line 3—3, Fig. 1.

Fig. 4 is a fragmentary transverse section on the line 4—4, Fig. 3.

Fig. 5 is a fragmentary and partly sectional view on the line 5—5, Fig. 3.

Fig. 6 is a bottom plan view of the foot rest.

Fig. 7 is a sectional view of the foot rest on the line 7—7, Fig. 6.

Referring to the drawings, it will be seen the embodiment therein illustrated comprises a main frame member formed of the spaced end members and parallel side rails connecting the end members. Each end member comprises spaced legs 1 connected by an integral cross member 2, each leg being formed with a depression or saddle to receive the end of a side rail 3. If desired, the side rails may be of wood and secured to the legs 1 by screws or bolts. Mounted to move longitudinally of the side rails, and supported thereby, is a seat 4. The wheels $5x$ of the seat 4 may run in grooves $3x$ formed in the side rails 3.

The front supporting legs 1 and the main frame member are provided with smooth surfaced abutments 5, Fig. 5, to receive the apertured bearing bosses 6 projecting laterally of the supplemental frame. The legs at this point are to receive stud screws 7, Figs. 3 and 5, serving as pivotal supports for the supplemental frame.

The supplemental frame member is formed with rearwardly widely spaced arms 8 and the forwardly projecting bar-like member $8x$. Arms 8 are provided with outer depending flanges $8xx$, Fig. 5. These flanges at their rear, are connected by depending yoke 9. When the supplemental frame member is extended as shown in Figs. 1, 2, 3 and 5, flanges of arms 8 at the ends of the arms abut the front legs 1 of the main frame member so that an upward pull on the front end of the supplemental frame member is resisted.

Immediately in front of the arms 8 the supplemental frame member is formed with a hollow apertured protuberance 10 in which is pivotally mounted a guide pulley 11 for a flexible connecting member 12 secured to seat 4. Flexible connecting member 12 is led over the pulley and thence rearwardly below rails 3 and is connected to the front end of spring 13 the rear end of the spring being connected to a bar 14 secured to rear cross member 2 of the main frame.

The front end of the supplemental frame

member is formed with a hollow apertured protuberance, 15, extending above protuberance 10. Pivotally supported in protuberance 15 are two sets of pulleys 16, 17, and above each of the two pulleys 16 the protuberance 15 is apertured. Passing over one of the pulleys 16 and thence over one of the pulleys 17, is a flexible connecting member 18 having at one end thereof, a hand grip 19, and passing over the second pulley 16 and thence to its companion pulley 17, is a second flexible connecting member 18x having a hand grip 19x (Fig. 1). Flexible connecting member 18 is secured to one end of a spring 20 the opposite end of the spring being connected to bar 14. Flexible connecting member 18x is secured to one end of a spring 21, the opposite end of the spring being connected to bar 14. Spare springs, preferably of strength different from 20 and 21, are shown at 22. If desired, the hand grips 19, 19x may be attachably connected in any suitable manner, as at 23.

A novel form of foot rest is provided as to construction and arrangement relatively to the supplemental frame member in that the foot pieces are adapted for movement laterally of the said frame member and are connected by a cross piece which straddles the member. The foot rest comprises two foot pieces 24 connected by cross pieces 25. The bottom plan view, Fig. 6, shows that each foot piece is formed with parallel depending ribs 25x which merge with correspondingly formed ribs depending from cross piece 25 and with depending apertured lugs 26. These lugs receive a pivot pin 27, Figs. 2 and 3 carried by the supplemental frame member and upon which the foot rest may rock with the foot pieces lying at the sides of the frame member as shown more particularly in Figs. 1 and 2. The foot pieces are further reinforced by depending flanges about their margins as shown in Fig. 6. Toe straps may be provided as shown at 28.

It will be noted that the legs of the main frame member at the rear thereof are longer than those at the front so that the operator seated upon seat 4 pushes back the seat against both the tension of spring 13 and gravitational action of the incline.

When it is desired to store or ship the apparatus, the seat 4 may be disconnected from flexible connection 12, the latter having at its end a stem with a ball connection as indicated more particularly in Fig. 3 at 29 which connection may engage with a double apertured clip 30 as shown in Fig. 4, the clip being secured to seat 4. Upon disconnection of the seat from flexible connection 12, the seat may be removed from the track, and the supplemental frame member folded back in the main frame member without disturbing the hand grips or the flexible connections therewith or removing the foot rests, the latter being freely movable to substantially horizontal position.

The novel form of the supplemental frame enables its ready folding in the main frame, and gives it great rigidity and strength, affords integral protecting housing for the pulleys, enables free movement of the foot pieces at its sides and enables adequate coaction with the main frame member to receive upward movement upon folding of the flexible connections 18, 18x by the hand grips 19, 19x.

Having described my invention, what I claim and desire to secure by Letters Patent, is as follows:—

1. An exercising machine comprising a main frame having parallel side rails and front and rear transverse members supporting said rails, a seat movable over said rails, a supplemental frame member pivotally connected to and projecting forwardly of the first-named frame member and held against upward movement by abutment with the said front transverse member, a foot rest and a guide device carried by the supplemental frame member, hand grips and flexible tensioned connections therefor led over said guide device.

2. An exercising apparatus comprising a main frame having parallel side rails, front and rear members supporting said rails, a seat movable over said rails, a supplemental frame member pivotally connected to and projecting forwardly of the first-named frame member, said supplemental member being foldable back under the first-named member but being held against upward movement when extended by abutment with the front member supporting said rails, a foot rest and a guide device carried by the supplemental frame member, hand grips and tensioned flexible connections therefor, led over said guide device.

3. An exercising apparatus comprising a main frame having parallel side rails and front and rear connecting members therefor, a seat movable over said rails, a supplemental frame member pivotally connected to and projecting forwardly of the first-named frame member, said supplemental frame member being formed with a rearward portion having opposed arms receiving said pivotal connections and a bar-like portion projected forwardly of said arms, a pulley device carried by the supplemental frame immediately forward of the arm portion and centrally thereof, a tensioned flexible connection for the seat and led over the pulley device, a foot rest comprising a cross member straddling the supplemental frame near the front end thereof and a foot support carried at each end of the cross member, pulley devices carried by said bar-like portion of the supplemental frame at the

front end thereof, hand grips and tensioned flexible connections for said hand grips led over said last-named pulley devices.

4. A device constructed in accordance with claim 2 in combination with a spring device connected to the hand grip flexible connections.

5. A device constructed in accordance with claim 3 in combination with a spring device carried substantially horizontal of the main frame and connected thereto and connected with the flexible connection for the seat and a second spring device connected with the flexible connections for the hand grips.

6. In an exercising apparatus, and in combination with a main frame including parallel side rails, and a seat movable over said rails, of a supplemental frame formed at its rear with spaced arms merging into a forwardly projected bar, an abutment carried by each arm and engaging the frame and serving to hold the supplemental frame against upward movement from its extended position, a foot rest comprising a cross member straddling the projected bar of the supplemental frame, a foot piece at each end thereof and supported for movement across the horizontal plane of said bar projection, pulley devices carried by the bar projection forwardly of the foot rest, springs carried by the main frame, hand grips, flexible connections for the latter led over said pulley devices and connected to the springs and a pulley device carried by the supplemental frame rearwardly of the foot rest and adapted to guide a flexible tensioned connection for the seat.

7. An exercising apparatus comprising side rails and supporting connections therefor comprising front and rear metallic members each member comprising opposed legs connected by a transverse horizontal bar and each leg being formed at its top with a saddle to receive one end of a rail, a seat mounted to move on the rails, a supplemental frame pivoted to the main frame, pulleys and a foot rest carried by the supplemental frame, hand grips, and tensioned flexible connections for said hand grips led over the pulleys, the connection between the main and supplemental frames being such that the latter is held against upward movement from extended position but is free to be moved back under the main frame.

8. In a device of the character set forth and in combination with a main frame, a seat movable on the main frame, and a supplemental frame pivotally connected to the main frame for movement thereunder, of a foot rest comprising two foot-receiving members and a narrow bar-like connecting member therefor, each foot piece having parallel depending reinforcing ribs extending transversely thereof and merging into correspondingly formed ribs carried by the bar, said ribs in turn merging into depending apertured lugs adapted to receive a pivotal member for connecting the foot rest to the supplemental frame member.

9. In an exercising apparatus in combination with a main frame, a seat movable upon the main frame, a supplemental frame having a relatively wide rear section, a relatively narrow front section of a foot rest comprising opposed foot pieces integrally connected by a transverse bar adapted to straddle the front portion of the supplemental frame and a pivotal connection intermediate the frame and said foot rest whereby the foot pieces may be pivotally moved transversely of the supplemental frame member at the sides thereof.

10. In a device of the character set forth, and in combination with a main frame, a seat movable on the main frame, and a supplemental frame pivotally connected to the main frame for movement to fold upon each other, the supplemental frame being formed with rearwardly projected arms for pivotal connection with the main frame and a central forwardly projecting bar-like portion having an upwardly extending hollow protuberance at its front end, the protuberance being apertured at its top, a pulley pivoted within the protuberance, a tensioned cable extending through the aperture, and a hand grip connected to the cable.

11. A device constructed in accordance with claim 10 in which the protuberance is provided with spaced apertures and with opposed pulleys each pulley receiving a tensioned flexible connection for a hand grip.

12. A device constructed in accordance with claim 10 in combination with an H-shaped foot rest having a pivotal connection with the bar-like extension of the supplemental frame rearwardly of the protuberance and comprising opposed foot rests and a connecting cross piece, the foot rests lying at opposite sides of the protuberance for movement adjacent thereto.

13. A device constructed in accordance with claim 10 in which the bar-like projection of the supplemental frame is formed with a hollow protuberance disposed adjacent the projecting arms thereof, a pulley pivotally mounted within the protuberance, the latter being apertured, a tensioned cable led over the pulley and connected with the seat centrally thereof.

14. In an exercising apparatus in combination with a main frame having side rails and a seat movable upon the side rails, of a supplemental frame comprising a metallic member formed with rearwardly projecting spaced arms having pivotal connections with the main frame and a bar-like projection merging into said arms, the arms and bar-like extension having lateral downward ex-

tending flanges, the bar adjacent its connection with the arms and centrally thereof, being formed with a hollow apertured protuberance and the bar at its front end being formed with a hollowed apertured protuberance rising substantially above the first-named protuberance, a foot rest pivoted to the bar intermediate the protuberances and pulleys pivotally mounted within the protuberances in such manner that tensioned cables may be guided by the pulleys and projected through the apertures of the protuberances as and for the purpose set forth.

In testimony whereof, I have signed my name to this specification.

PETER S. HARDY.