(No Model.) 2 Sheets—Sheet 1.

J. B. ROOT.

EXERCISING MACHINE.

No. 326,247. Patented Sept. 15, 1885.

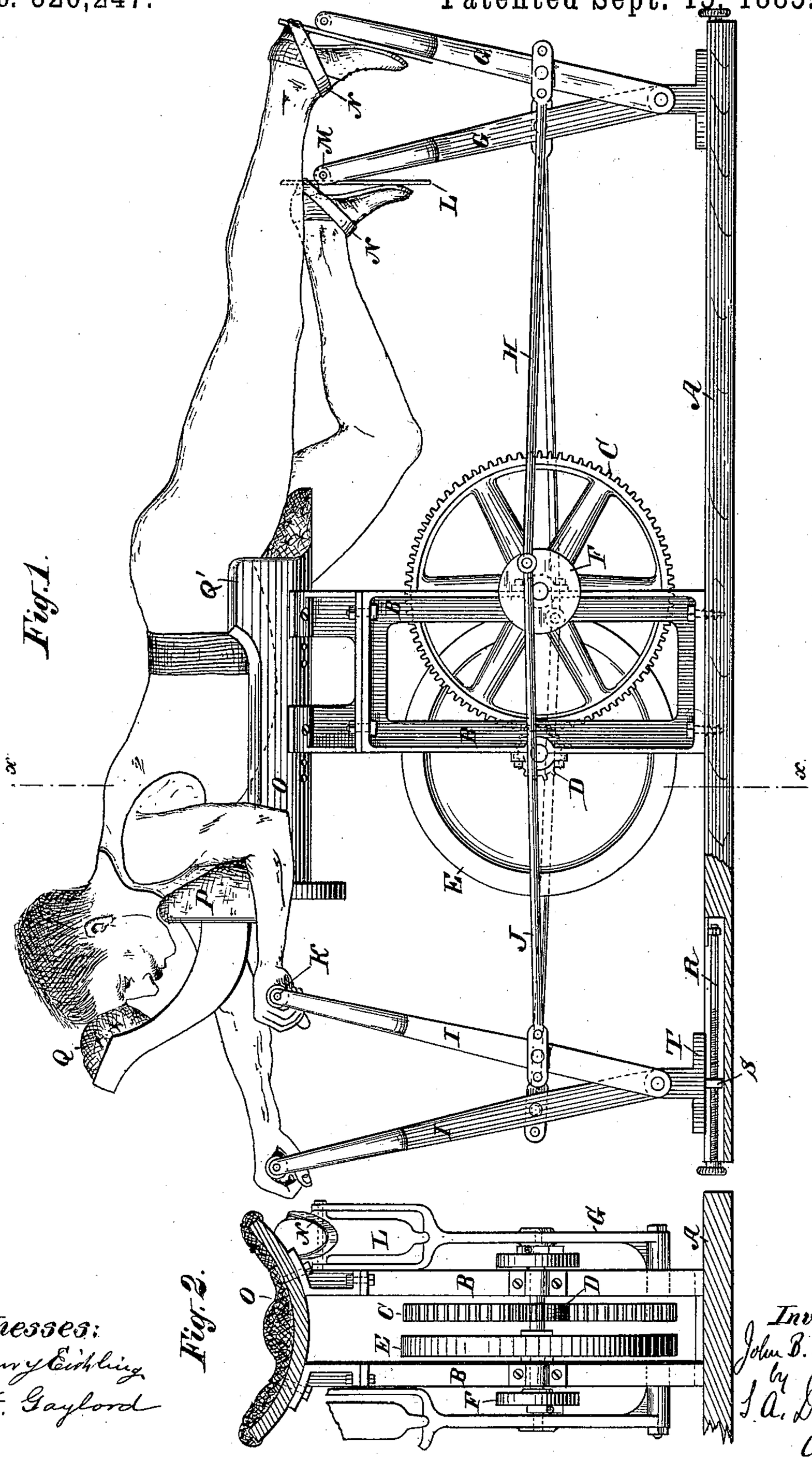

Fig. 1.

Fig. 2.

Witnesses:
Henry Eichling
R. F. Gaylord

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(No Model.)

2 Sheets—Sheet 2.

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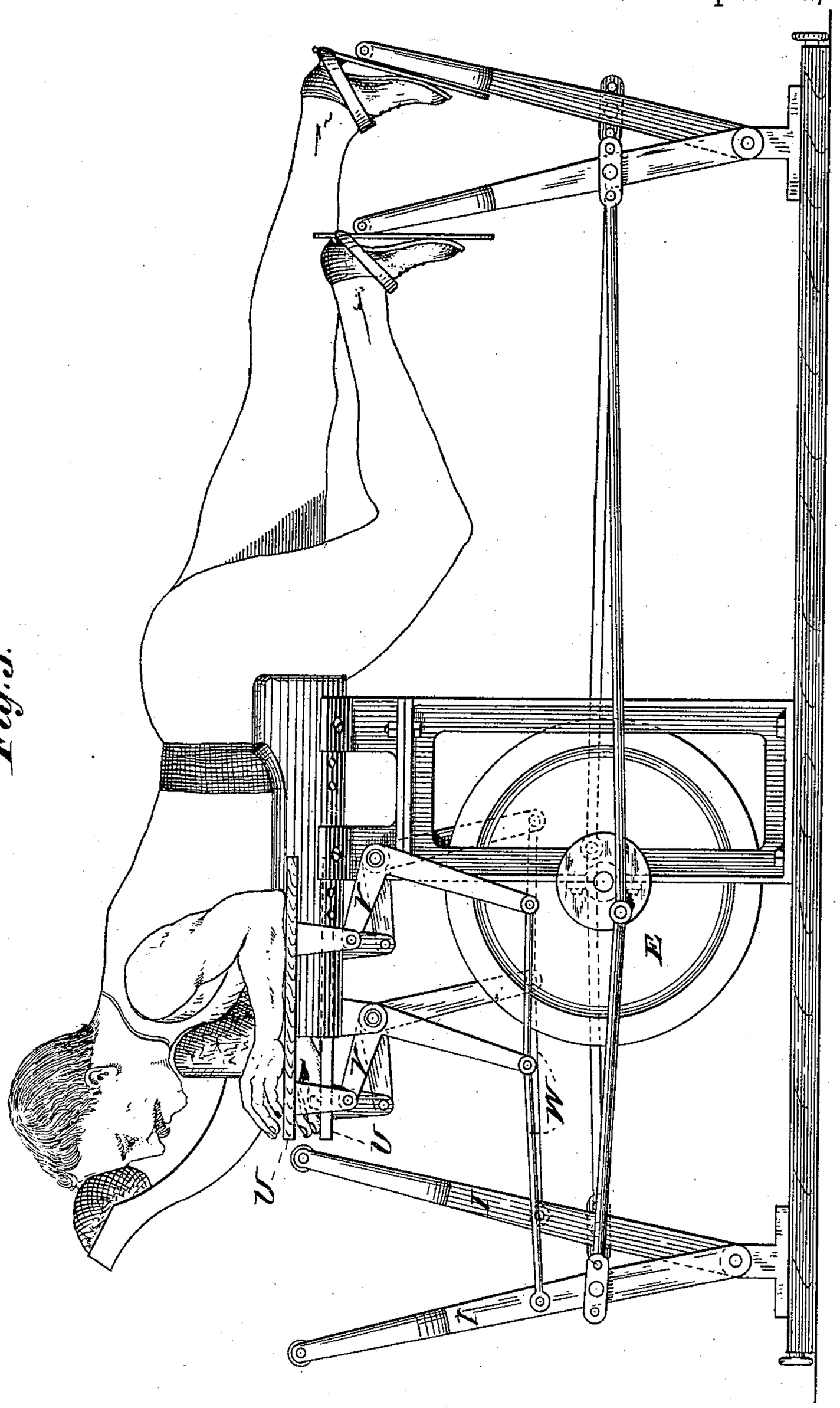

Fig. 2.

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UNITED STATES PATENT OFFICE.

JOHN B. ROOT, OF PORT CHESTER, NEW YORK.

EXERCISING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 326,247, dated September 15, 1885.

Application filed February 16, 1885. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. ROOT, of Port Chester, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Exercising-Machines, of which the following is a full, clear, and exact description.

The invention relates to machines with which to take muscular exercise. Its object is to produce a machine whereby a person can give himself passive exercise or effective muscular exercise with the outlay of but little nervous strength.

It consists, in general, of devices arranged to support the body of the person exercising in a horizontal position, leaving his arms and legs free, and in levers for the hands and feet to operate, which levers are connected to a fly-wheel in such a manner as to operate or be operated by the same. By working said levers singly, in pairs, or otherwise, the fly-wheel is put in motion, and its motion reacts upon the person using the machine, thereby causing his muscles to be exercised while he is in a comparatively passive condition.

In the drawings, Figure 1 is a side view of a machine embodying my improvements. Fig. 2 is a cross-section of the same on plane *x x;* and Fig. 3 is a side view of a modified form.

In these views *a* represents the base of the machine. B is an upright frame secured to the base. Supported on this frame in suitable bearings is the gear-wheel C, which meshes with the pinion D on the shaft of the fly-wheel E. On the ends of the shaft of the gear-wheel are crank-disks F.

G G are foot-levers hinged to the base of the machine and attached to the gear-wheel crank-pins by connecting-rods H.

I I are hand-levers similarly arranged at the other end of the machine, and J are the rods connecting them to the gear-wheel crank-disks. These hand-levers have at their upper ends handles K, suited to the grasp of a person's hand.

The foot-levers are provided with foot-plates L, which hang on pivots M, in the upper forked ends of these levers, and are provided with foot-straps N.

O is a saddle or body-support arranged upon the top of the fly-wheel frame. It is preferably cushioned, and conforms to the general shape of a person's body, with a breast-support, P, and a forehead-support, Q. There are also hip-supports, Q', which are for the lower parts of the body to rest upon, and this is to relieve the abdomen of a person exercising from the weight of the body or other weight or pressure.

R is a screw-rod fixed in a slot in the base of the machine. Upon this rod travels the lug S, which projects down from the plate T, upon which the hand and foot levers are pivoted. Turning the screw-rod moves the hand-levers or the foot-levers nearer to or away from the saddle to accommodate the machine to persons of different sizes. For a like purpose the connecting-rods may be raised on the levers, or their operative length changed, and the forehead-support and saddle can also be moved on their supports, if it be desired to adjust them.

To exercise upon the machine, a person lies in the saddle, as shown, with his hands upon the hand-levers and his feet in the foot-straps. In this position he can alternately push against one hand-lever and the foot-lever upon the opposite side, and then against the other hand-lever and the foot-lever opposite to it, this being the mode of operating suited to the adjustment shown. Other combinations of foot and arm movements may be had, however, by changing the adjustment of the rods connecting the hand and foot levers to the balance-wheel, or by changing the position of the levers upon the base, or the position of the crank-pins; or the hand or foot levers may be alone worked, one of each pair, or those of one side; or the one exercising may stand before the levers and work one or both of either pair, and so on through many other movements or combinations of movements.

It will now be understood that when any one or more of the levers are worked the fly-wheel will be put in motion, and the power thus stored in the fly-wheel will cause it to run for some time after the power exerted to drive it is no longer applied. This is the essential feature of advantages incident to the machine, and because it makes the machine reactionary, or so that it can act upon a person while in a quiet or passive state. Thus a person needs to exert his strength but a short time to put the fly-wheel into rapid motion, and he can

then lie with limbs relaxed and without effort be exercised by the fly-wheel as it runs down; or he may, with slight effort exerted regularly or at short intervals, keep the fly-wheel running continuously for any length of time, and in such latter use of the machine the advantage of the fly-wheel is that it makes the naturally-uneven movements of the limbs and body even and regular, and effects their sufficient exercise without strains or shocks, or any of the ill results that often follow other methods of exercising.

The forehead rest or brace is of much assistance to a person when using the machine, as shown, for it gives a firm support for the head and serves as a convenient brace to hold the person in an easy and fixed position.

In Fig. 3 I show a supplemental device for exercising the arms without exerting the grasping-power of the hands. U U are arm-rests arranged at the sides of the saddle and supported upon angle levers V V, pivoted to the saddle-supports, and these angle-levers are attached to the hand-levers I I by connecting-rods W. The person exercising places his arms upon the arm-rests, as shown, and bears down upon them, in conjunction with pushing upon the foot-levers, to drive the machine, though in this case the fly-wheel is mainly driven by the feet. So, also, a person exercising may lie on his back with the saddle properly adjusted and with his arms in a position upon the arm-rests reversed to that shown in Fig. 3. In this view, too, I have shown the operating-levers as directly connected to the fly-wheel. Still other connections between the fly-wheel and the limbs of a person exercising are possible; but the forms shown will suffice to explain the principle of the invention.

What is claimed as new is—

1. In an exercising-machine, the combination of a fly-wheel and a handle or handles connected by a crank with and for operating said fly-wheel, as and for the purpose described.

2. In an exercising-machine, the combination of a fly-wheel and a foot lever or levers connected by a crank with and for operating said fly-wheel, as and for the purpose set forth.

3. In an exercising-machine, the combination of a fly-wheel and hand and foot levers connected by a crank thereto for operating the same, as and for the purpose set forth.

4. In an exercising-machine, the combination of a fly-wheel, hand and foot levers attached thereto and for operating the same, and a horizontal body-support or saddle, as and for the purpose set forth.

5. In an exercising-machine, the combination of a saddle, O, adapted to the shape of and for holding a person's body, and a head rest or brace, Q, as and for the purpose set forth.

6 In combination, the fly-wheel E, the operating-levers pivoted to a plate, T, provided with the lug S, and the screw R, as and for the purpose set forth.

JOHN B. ROOT.

Witnesses:
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