

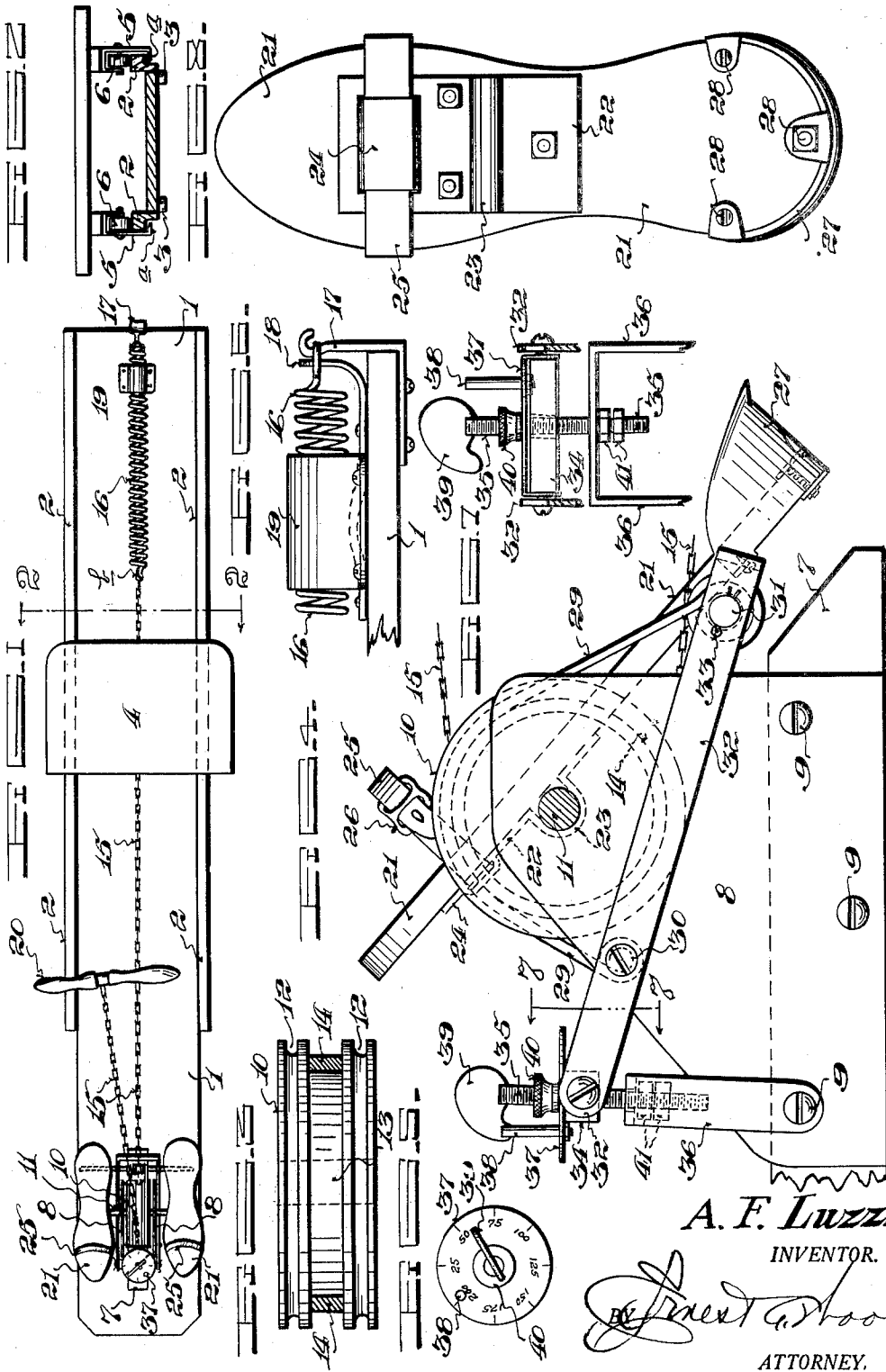
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EXERCISING APPARATUS

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EXERCISING APPARATUS

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This invention relates to exercising devices and it has particular reference to that type of exercising device involving the principles of rowing to improve and test the physical prowess of the operator. The principal object of the invention is to provide, in a machine of the character specified, certain new and novel expedients by which to increase or decrease the resistance of the machine in accordance with the strength or increased strength of the operator. Another object of the invention is to provide simple and economical means indirectly affecting the resistance elements through which to determine visibly the degree of such resistance and through the medium of which the operator may determine the degree or amount of exertion being applied or necessary to apply to operate the machine.

The invention further aims to provide an exercising machine having few operating parts, yet possessing the durability necessary in a machine of this character built for rough usage. The extreme simplicity of design and simplicity of the parts make for economical construction and consequently may be exploited at a nominal cost.

With the foregoing objects as paramount, the invention has particular reference to its salient features of construction and arrangement of parts which will become manifest as the description proceeds, taken in connection with the accompanying drawing, wherein:—

Figure 1 is a plan view of a machine constructed according to the present invention.

Figure 2 is a view on lines 2—2 of Figure 1.

Figure 3 is a detail plan view of the brake drum. Figure 4 is a side elevation, showing the foot pieces, resistance elements and resistance indicating means.

Figure 5 is a detail plan view of the calibrated resistance indicating dial.

Figure 6 is a fragmentary view of the base and spring resistance means, showing the spring silencer and a method of securing the spring to the base.

Figure 7 is a fragmentary detail view on lines 7—7 of Figure 4, and

Figure 8 is an underside view of one of the foot pieces.

Continuing with a more detailed description of the drawing, 1 designates a base member which extends from one end of the machine to the other and has side rails 2 on either side thereof. The base member 1, as apparent in Figure 2, is supported upon legs 3 in order to prevent the base from slipping or becoming displaced during operation of the machine.

It will be observed in Figure 1 that the side rails 2 terminate short of the forward end of the base 1, which is the limit of movement of the seat 4. The seat 4 is provided with depending

brackets 5 whose lower ends *a* underreach the projecting edges of the rails 2, as apparent in Figure 2. Rollers 6 are journaled in the manner shown in Figure 2 in the brackets 5 so that they will be concealed from view from the side of the machine and in order that the clothing will not be caught in the rollers during reciprocation of the seat 4 when the machine is in operation. Due to the fact that the lower edges *a* of the brackets 5 are engaged under the extended edges of the rails 2, the seat is prevented from being displaced laterally on the rails 2 and it is apparent therefore that the seat 4 may be freely moved or reciprocated from one end of the track or rails to the other.

With particular reference to the elements constituting the resistance means, it will be observed in Figure 4 that a block 7 is secured to the base 1, which latter is not shown in Figure 4, and to this block is secured side plates 8 by means of screws 9. The plates 8 are spaced apart in the manner shown in Figure 1 so as to receive the drum 10, shown in detail in Figure 3. The drum is rotatably mounted upon the lateral shaft 11 and is provided with annular grooves 12, intermediate which grooves is an annular channel 13. A strip of pliable material 14 lies within the channel 13, as shown in Figure 3 and which receives the flexible line or chain 15, in the manner shown in Figure 1 to prevent slippage of the chain during operation of the machine.

One end of the chain 15 is joined at *b* to a spring 16 adjacent the rear end of the base 1 and the rear end of the spring 16 is connected to an upwardly extending hook 17, shown in the detail view in Figure 6. An upwardly turned member 18, whose end extends through the loop in the spring 16 aids in holding the spring in position. A piece of leather, fabric or other material 19 is so affixed to the base 1 as to embrace the spring 16 near its rear end and functions to silence any tendency of the spring to thrum or make other annoying sounds as the machine is operated.

A pull upon the handle 20, secured to the opposite end of the chain 15 will obviously stretch the spring 16 and the drum 10 will yield to the movement of the chain 15 by rotating on the shaft 11, which latter is journaled in the plates 8 and whose ends extend well beyond the plates.

The foot pieces 21, shown in detail in Figure 8 have affixed to the underside thereof cleats 22, so shaped as to define bearings 23 to receive the protruding ends of the lateral, drum shaft 11. As also apparent in Figure 8, the cleats 22 are die stamped to project slots 24, through which are passed straps 25, preferably of leather and which are intended to be adjusted over the toes of the foot to retain the foot in position on the foot piece 21.

A buckle 26 is provided to allow for adjustability of the straps 25 and which may be seen in Figure 4. Heel receptacles 27 are secured by means of screws 28 to the foot pieces 21 to receive the heels of the operator.

From the foregoing description it is obvious that when the operator seats himself upon the seat 4 and rests his feet upon the foot pieces 21, he is in a position to grasp the handle 20 and by pulling upon the chain 15, spring 16 is turned and its movements are much the same as in the rowing of a boat, the spring 16 being instrumental in bringing the upper portion of the body forward preparatory to again pulling upward upon the chain 15. During these movements, the drum 10 is rotated to and fro as it yields to the movement of the chain and it is one of the principal objects of the invention to resist the movements of the drum to thereby alter the degree of effort on the part of the operator in the operation of the machine.

Accordingly, a pair of brake bands 29 surround the upper part of the drum 10 and repose in the annular groove 12 in the drum. The ends of the brake bands 29 are secured to a lateral pin 30, extending through the side plates 8 and the opposite ends of the bands are secured to a lateral pin or shaft 31 extending through one end of a substantially U-shaped yoke 32. The yoke 32 is capable of being rocked upon the pivot point provided for by the pin 30, to which the forward ends of the brake bands 29 are secured.

Therefore, since the lower end of the yoke 32 is capable of considerable displacement, and in view of the fact that the opposite ends of the brake bands 29 are secured to the lower end of the yoke 32, upward and downward movement of the lower end of the yoke will result in decreasing and increasing the tension of the brake bands 29. The varying degree of tension thus imparted to the brake bands 29 will be accordingly transmitted to the surface of the drum 10 to thereby increase and decrease the power required to rotate the drum.

The elements are so constructed and arranged that the operator of the machine controls the frictional resistance of the drum by pressure applied by his heels upon the foot pieces 21. It will be noted that the foot pieces are rockably mounted on the shaft 11 so that the heel portions thereof will loosely rest upon the shaft 31 carried by the yoke 32 and secured against endwise movement by the cotter pins 33. Obviously, downward pressure on the heel portion of the foot pieces 21 will depress the lower end of the yoke 32 to tension the brake bands 29 over the brake drum 10. This pressure is usually exerted by the operator during the backward pull upon the handle 20 and the resistance thus set up by downward pressure of the heels will require greater exertion on the part of the operator.

To predetermine the amount of resistance above described, the forward end of the yoke 32 embraces a block 34, as shown in Figures 4 and 7. A threaded rod 35 passes freely through an opening midway between the ends of the block 34 and its lower end is passed freely through an opening in an inverted U-shaped clevis 36 secured to the plates 8. A calibrated dial 37 is secured to the block 34 and has an upwardly extending stop pin 38 secured thereto. Upon the upper end of the threaded rod 35 is a key 39, which may be rotated after loosening the knurled nut 40, which rests upon the surface of the dial in the capacity of a lock nut. Nuts 41 are

threaded upon the lower end of the threaded rod 35 which are provided to compensate for any wear that may occur in the parts just described.

In the operation of the machine, the operator seats himself in the manner previously explained and after having loosened the nut 40 on the dial 37, the key 39 is rotated to a point on the dial designating the resistance transmitted by any pressure applied to the foot pieces 21. In making this adjustment, it is obvious that while the dial 37 remains in fixed relation to the block 34, it is moved perpendicularly to increase or decrease the space between the upper part of the member 36 and the dial. This will accordingly limit the upward movement of the forward end of the yoke 32. In other words, by raising the dial 37, greater tension will be brought upon the brake bands 29 since the forward end of the yoke 32 is thereby allowed to move to a higher point above the fulcrum at 30 which will bring the lower end of the yoke 32 to a lower point. By lowering the dial 37, tension on the brake bands 29 is lessened by reason of the fact that regardless of the pressure applied to the foot pieces 21, no greater tension can be brought upon the brake bands since movement of the yoke 32 is limited.

After having operated the machine for a period of time, the operator may adjust the key 39 to increase the resistance of the drum 10 predeterminately and he may continue to increase the resistance so long as his muscular development proportionately increases. On the other hand, should others desire to use the machine, resistance adjustments may be made to accord with their physical development as explained in the foregoing.

Manifestly, the construction shown is capable of some modification and such modification as is considered within the scope and meaning of the appended claims is also considered within the spirit and intent of the invention.

What is claimed is:—

1. An exercising machine including a base and a reciprocating seat, a rotating drum mounted forwardly of said seat and having annular peripheral grooves, a pull line having yielding connection to the rearmost end of said base and surrounding the centermost of said grooves, a rocking member embracing the mounting of said drum, foot pieces disposed on either side of said drum and engaging said rocking member, means for resisting the rotation of said drum in accordance with the movements of said rocking member and means to limit the movements of said rocking member.

2. In an exercising machine, a rotating drum having a pull line surrounding the same and a pair of brake bands partially surrounding said drum on either side of said pull line, a rocking yoke embracing said drum, means to effect securing of the ends of said brake bands to said yoke, foot pieces disposed above said yoke and partially resting thereupon whereby pressure upon said foot pieces will tension said brake bands and resist rotating movement of said drum and means for predetermining the extent of movement of said yoke to thereby predetermine the degree of tension on said brake bands.

3. In an exercising machine, a rotating drum having annular peripheral grooves and a pull line surrounding the centermost of said grooves, brake bands partially surrounding said drum, said drum having movable ends and stationary ends, a fulcrumed yoke embracing the mounting of said drum, means for securing the stationary

ends of said bands to the fulcrum point of said yoke, means for securing the moving ends to the inner end of said yoke whereby movement of said yoke will increase and decrease the tension of said bands over said drum, foot pieces rockably mounted upon the axis of said drum and whose heel portions rest upon the movable point of securement of said brake bands whereby pressure thereupon will depress said yoke to thereby tension said brake bands to resist the rotation of said drum and means to predetermine the movement of said yoke irrespective of the pressure applied thereto.	
4. In an exercising device, a partially flexible pull line surrounding a groove in said drum, means reposing in said groove to resist slippage of said line therein, a pair of rockable foot pieces mounted on opposite sides of said drum, means actuated by pressure applied to said foot pieces for resisting the rotation of said drum and means to predetermine the degree of said resistance.	
5. In an exercising device, a base and a reciprocating seat, a grooved drum mounted for rotation forwardly of said seat, a pliable filler conformably reposing in a groove in said drum, a pull line surrounding said drum in said groove, foot pieces mounted for rocking movement on either side of said drum, means indirectly controlled by the actuation of said foot pieces for resisting the rotation of said drum, a calibrated dial, means disposed adjacent to said dial capable of movement to any position on said dial to predeterminately fix the degree of tension on said drum resisting means.	
6. In an exercising device, a base structure including an elongated flat member having raised side rails whose upper edges are turned longitudinally outward, a seat non-frictionally mounted on said rails, bracket members depending from said seat and having their lower edges turned inwardly to engage under the edges of said rails, a drum, means for rotating said drum, foot actuated means frictionally bearing on said drum, means for increasing and decreasing the degree of resistance imposed by said foot actuated means and calibrated means for visibly indicating the degree of said frictional resistance.	80
7. In an exercising machine of the character described, a base member having inverted L-shaped side rails and a seat mounted for non-frictional reciprocation on said rails and having depending brackets whose lower edges conformably repose under the outwardly turned edges of said rails to prevent displacement of said seat, a grooved drum, means for rotating said drum, foot actuated means for frictionally bearing on said drum to resist rotation thereof and calibrated means for visibly indicating the degree of frictional resistance imposed on said drum.	85
8. In an exercising machine, a base having inverted side rails and a seat provided with means to engage under said rails to hold said seat against lateral displacement, a semi-flexible pull line, a brake drum about which said line is actuated, means for resisting the rotation of said drum and calibrated means for visibly indicating the degree of said resistance.	90
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