(No Model.)

D. L. DOWD.

EXERCISING MACHINE.

No. 345,286. Patented July 13, 1886.

Fig. 1.

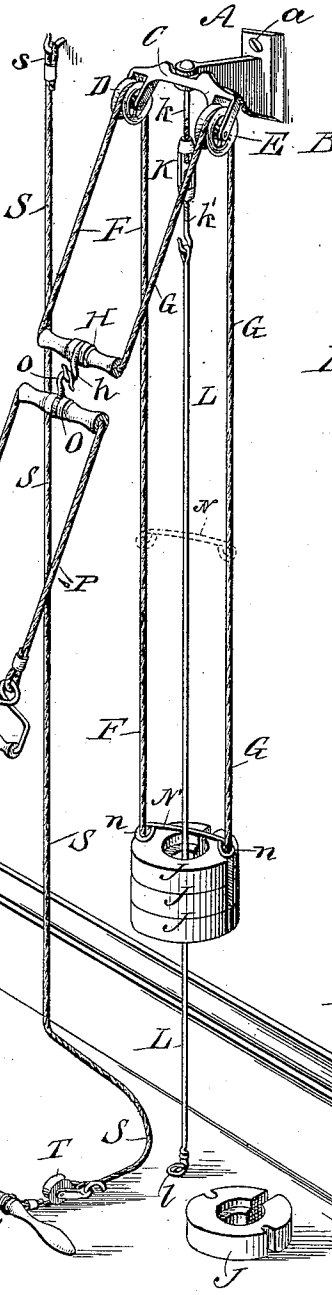


Fig. 2.

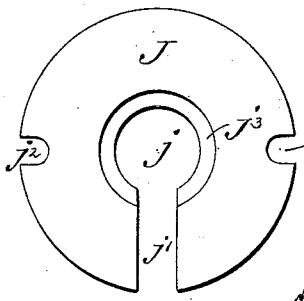
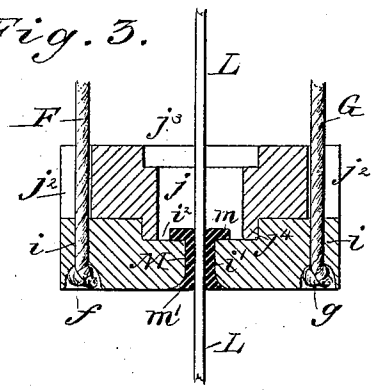
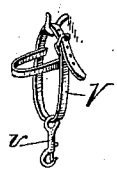


Fig. 3.





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UNITED STATES PATENT OFFICE.

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EXERCISING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 345,286, dated July 13, 1886.

Application filed November 10, 1885. Serial No. 182,337. (No model.)

To all whom it may concern:

Be it known that I, DANIEL L. DOWD, of the city of New York, county and State of New York, have invented an Improved Exercising-Machine, of which the following is a full, clear, and exact description.

My invention relates to machines adapted for use in physical culture, and has for its object to provide a simple, inexpensive, and compact apparatus which may be set up and operated easily, and by the aid of which all the muscles may be properly exercised without overstraining any part of the body.

The invention consists in certain novel features of construction and combinations of parts of the exercising-machine, all as hereinafter fully set forth.

Reference is to be had to the accompanying drawings, forming a part of this specification, and in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of the exercising-machine as adjusted for use, with the double hand or shoulder pull, and shows also the auxiliary pull-cord and foot-strap suspended on the wall, and one of the removable weights detached. Fig. 2 is an enlarged plan view of one of the removable weights, and Fig. 3 is a vertical sectional elevation showing the lower part of the cords with a few attached weights and a portion of the guiding-wire along which the weights move.

To a bracket, A, which is adapted to be fixed to a wall, B, or a post, bar, or other suitable support by means of a screw or bolt, *a*, is swiveled, so as to move horizontally, the head-piece C, to lugs at opposite ends of which are journaled the two pulleys D E, over which pass the cords F G, to the upper ends of which is connected a cross-bar, H. To the opposite ends of the cords F G is held the lower weight, I, and upper removable weights, J, as presently explained.

In the preferred construction of the head parts of the machine the outer end of the bracket A is slotted horizontally to form lugs, between which the head-piece is pivoted by a headed screw-pin, *k*, which forms the upper end of a turn-buckle or tightening device, K. To the lower screw-hook portion, *k'*, of the turn-buckle is connected the upper end of a wire, L, the lower end of which is fastened to the floor directly under the pivot-pin *k* by a screw, *l*, which passes through an eye formed by twisting the wire, as shown in Fig. 1. It is obvious that by operating the turn-buckle the wire L may be drawn or strained up tightly, to serve as an effective guide to the moving weights I J, which are arranged on the cords and with each other and the guide-wire as next described. The lower weight, I, has two diametrically-opposite holes, *i i*, through which the cords F G are passed, and the ends of the cords are knotted, as at *f g*, to hold the weights on the cords. (See Fig. 3.) At its center the weight I has an aperture, *i'*, sufficiently larger than the guide-wire L to allow a noise-deadening packing, M, made preferably of leather, to be placed in the hole around the wire, said packing being held securely to the weight by flanging or upsetting its upper and lower ends, as at *m m'*, respectively, the hole *i'* being preferably countersunk or enlarged at the bottom of the weight to receive the lower flange, *m'*, of the packing; and the upper flange, *m*, of the packing rests in a recess, i^2, at the top of the weight. The upper removable weights, J, are made alike, each with a central hole, *j*, and a slot, *j'*, opening therefrom to the edge of the weight, and with diametrically-opposite side notches or recesses, j^2 j^2, into which notches the opposite cords, F G, enter when the weights are adjusted to the machine. Each of the weights has also at its lower side around the central hole, *j*, a projecting rib, j^3, which fits within the recess i^2 of the lower weight, I, or into a recess, j^4, formed around the hole *j* at the top of the next lower weight J, all the weights J—preferably three with each machine—being interchangeable upon the lower weight, I, or upon each other. A wire-retainer, N, is placed loosely by its end eyes, *n n*, upon the cords F G, and when the wire rests on the upper weight J, as in full lines in Fig. 1, the cords will be locked by it into the opposite side notches, j^2 j^2, of the removable weight or weights J which may be in use. When a weight J is to be adjusted to the machine, the retainer N will be raised a little, and the weight may be slid into place, the wire L passing through

the slot j' to the center of the weight-hole j, as the opposite cords, F G, spring into opposite notches, j^2 j^2, of the weights, and the retainer N then may be slid or let fall on top of the weights. To remove one or more of the weights J, the retainer N will be raised on the cords, as indicated in dotted lines in Fig. 1, whereupon the cords may be spread sufficiently to allow the weights to be removed by withdrawing them from each other flatwise, when the rib j^3 is lifted from the recess j^4 or i^2 of the weight J or I below it, or by tilting the weights up edgewise to disengage them from the cords. The packing M prevents noisy, rasping contact of the lower weight, I, with the guide-wire L, and as the central holes, j, of the removable weights J are of considerable size, and as the upper weights are locked to each other laterally by the ribs j^3, entering the recess of the next lower weight, none of the removable weights J which may be in use can strike the guide-wire L; hence no packing is required on the weights J around the wire, and as the retainer N holds the weights to the cords, and as the cords prevent the weights from turning on each other, the entire series or nest of weights may be used without causing noise, and as the cords move quietly over the pulleys D E the operation of the machine is practically noiseless. I prefer to make the cords F G as the opposite end parts of one continuous cord, which is passed through the wooden cross-bar H, to the center of which is attached the hook h, to which may be attached, by its hook o, the cross-bar O, to which connect the two cords P P, to which the hand-grasps R R are attached. The cords P P are preferably the opposite end parts of a continuous cord passed through the cross-bar O. By grasping the handles R R the operator can, by a great variety of movements, draw on the cords to lift one or more of the weights I J, and then let them fall gradually to exercise the muscles of the neck, shoulders, arms, breast, back, and abdomen. A cord, S, (which is shown suspended conveniently at hand by its eye s, from a hook in the wall,) passes under a pulley, T, which is held to the floor in front of the connection of the wire with the floor at l. To the lower end loop or eye, s', of cord S, either the hand-grasp bar U or the foot-strap V may be connected, the former by passing it through the eye s', as shown in Fig. 1, and the foot-strap by hooking its snap-hook v into the eye s' when the bar U is removed therefrom. I show the heel-strap V hung conveniently at hand on the wall at the side of the bracket. With these cord-and-strap connections U V the muscles of the shoulders, arms, back, hips, and legs may be exercised, and by the aid of an overhead pulley, (not shown,) over which a cord may be passed, and then connected to the hook h, exercise may be taken to broaden and deepen the chest and strengthen some of the muscles of the upper arm. It is evident that whichever pull-cords be attached to the cords F G for operating the weights, the swivel-head C may be swung freely on its pivot to either side without interfering with the free action of the weights; hence this swiveling of the head-piece to the bracket will allow the apparatus to be attached by the bracket to the window or door casing, or to any support at or near the corner of a room, where the machine would occupy little or no space available for other uses, and the cords may be drawn upon by a person standing where he will have ample room for the free movement of his body and limbs in using the machine.

I am aware that exercising-machines have before been made in which are employed a single upper pulley, over which runs a cord from which weights hang, said weights being guided on two opposite guide-wires; but my machine has advantages over this construction, as follows: My machine having but a single guide-wire for the weights causes very much less strain on the fastenings of the machine to the side wall and floor by the tension of the guide-wire and vibrations caused by the travel of the weights along the wire than in double-wire machines; hence there is less liability of the machines breaking loose from its fastenings. Furthermore, a single weight-guiding wire may be securely held to a carpeted or inlaid floor of a chamber or office with but a single screw, causing very little damage to the floor or its covering, and which is not the case with double-wire machines, which require two or more screws for holding their wires or wire-retaining plates to the floor. Furthermore, a machine having a single guide-wire for the weights has very much less vibration, and consequently is quite noiseless by comparison with a double-wire machine.

A machine having a single weight-guiding wire allows free horizontal movement of the weights around the wire; hence should too sudden lifting movements be given the weights the cords will twist with each other and around the wire and stop the motion, thereby promoting smooth regular exercise, necessary for healthful physical development. Furthermore, in a machine having one weight-guiding wire and two ropes supporting the weights in use the ropes—usually most quickly worn—will last much longer than the single rope in double-wire machines, as each of the two ropes supports but one-half the weight, and, finally, the single-wire machine is much lighter in appearance, making it more inviting to use, and is much lighter in weight, and may be packed and shipped more conveniently and cheaply than the double-wire machines.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. An exercising-machine constructed with a wire fastened to top and bottom supports, a head-piece provided with two pulleys, one journaled at each side of the wire, a cord passing over each pulley, and a weight sus-

pended from the cords to move along the wire, substantially as herein set forth.

2. An exercising-machine constructed with a bracket, A, a wire, L, held to the bracket and to a bottom support, a head-piece, C, swiveled to the bracket to swing horizontally, pulleys D E, journaled to the head-piece, one at each side of the wire, cords, as at F G, passing over the pulleys, and a weight suspended from the cords to move along the wire, substantially as herein set forth.

3. An exercising-machine constructed with a bracket, A, a head-piece, C, swiveled horizontally to the bracket on a pin, *k*, which forms part of a tightening device, K, a wire, L, attached to the other end of the tightener K, and to a bottom support, pulleys D E, journaled to the head-piece C, cords F G, passing over the pulleys, and a weight suspended from the cords, substantially as herein set forth.

4. In an exercising-machine constructed with a wire, L, and two cords, F G, substantially as specified, the combination, with said cords, of a weight, I, suspended therefrom, and provided with a noise-deadening packing, as at M, which runs on the wire as the weight rises and falls, substantially as herein set forth.

5. In an exercising-machine constructed with a wire, L, and two cords, F G, substantially as specified, the combination, with said cords and a weight-support, as at I, of removable weights, as at J, provided with a central hole, *j*, a side slot, *j'*, and opposite notches j^2 j^2, for the cords F G, substantially as herein set forth.

6. In an exercising-machine constructed with a wire, L, and two cords, F G, substantially as specified, the combination, with said cords, of a weight-support, as at I, suspended thereby and guided on the wire L, removable weights J, each having a central hole, *j*, side slot, *j'*, and opposite notches j^2 j^2, and a retainer, N, placed loosely on the cords and adapted to hold them in the weight-notches j^2, substantially as herein set forth.

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Witnesses:
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