

UNITED STATES PATENT OFFICE.

EDWARD A. TUTTLE, OF NEW YORK, N. Y.

IMPROVEMENT IN EXERCISING-MACHINES.

Specification forming part of Letters Patent No. **212,284**, dated February 11, 1879; application filed April 8, 1878.

To all whom it may concern:

Be it known that I, EDWARD A. TUTTLE, of New York city, in the county and State of New York, have invented a new and useful Improvement in Health Lifting Apparatus or Exercising-Machines, of which the following is a specification:

This invention consists of an improved method of varying the leverage of the lifting devices to adapt the same to the requirements of different persons or conditions.

Figure 1 is a side elevation of an exercising-machine with my improved contrivance for varying the leverage of the lifting devices, and Fig. 2 is a plan view.

A is the platform, on which the operator stands to lift himself by the handles B. The platform is suspended from the rod C by the upright supports D, with braces E, and the upright supports D are coupled to the standards F by the parallel bars G, on which the platform is made to swing up and down, and by which it is kept in level condition when operated.

H represents the lifting-levers. They are pivoted to the standards F, and are made to act on the platform A by means of the adjustable radius-bars I, attached to rod C, to which the upright supports D are suspended. These adjustable radius-bars are what I employ for varying the leverage, which, it will be readily seen, is done by shifting the free ends of the said bars along the levers from one point to another, more or less distant from the fulcrum, said bars being attached to the rod C over the middle of the levers, or thereabout, and the levers being suitably curved to the circle described by the bars, and also being notched suitably to receive and hold the bars at different points.

This makes a very simple contrivance both to construct and to operate, and one impor-

tant advantage of it is that the operator does not have to change his position on the platform when the leverage is changed, as when the handles have to be shifted along the levers for that purpose, whereby the platform may be shorter.

Substantially the same contrivance may be had by placing the levers above rod C, with their curves inverted, and using links to connect them with the rod, the links being contrived to shift along the levers from one point to another. In that case the levers might be pivoted to the top of the standards F, and the links connected at or near the platform; and, if desired, the handles B might be formed directly on the ends of the levers.

Another advantage of this contrivance is the facility with which the adjustment can be effected simultaneously on the levers by having the bars or links I fixed to the rod C, so that they can be shifted by turning it with a hand lever or wheel, J; but it is not essential to use the rod C, for they may be coupled to the uprights or other suitable objects independently of each other.

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

1. In an exercising-machine, the lifting-levers coupled to the platform at the lifting-point by bars or devices which are radially adjustable from said point lengthwise or along said levers to vary the leverage, substantially as described and shown.

2. The combination of the turning rod C, radial bars I, attached thereto so as to be turned by it, and the levers H, substantially as described.

EDWARD A. TUTTLE.

Witnesses:

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