

W. A. KNIGHT.
Exercising Apparatus.

No. 163,081.

Patented May 11, 1875.

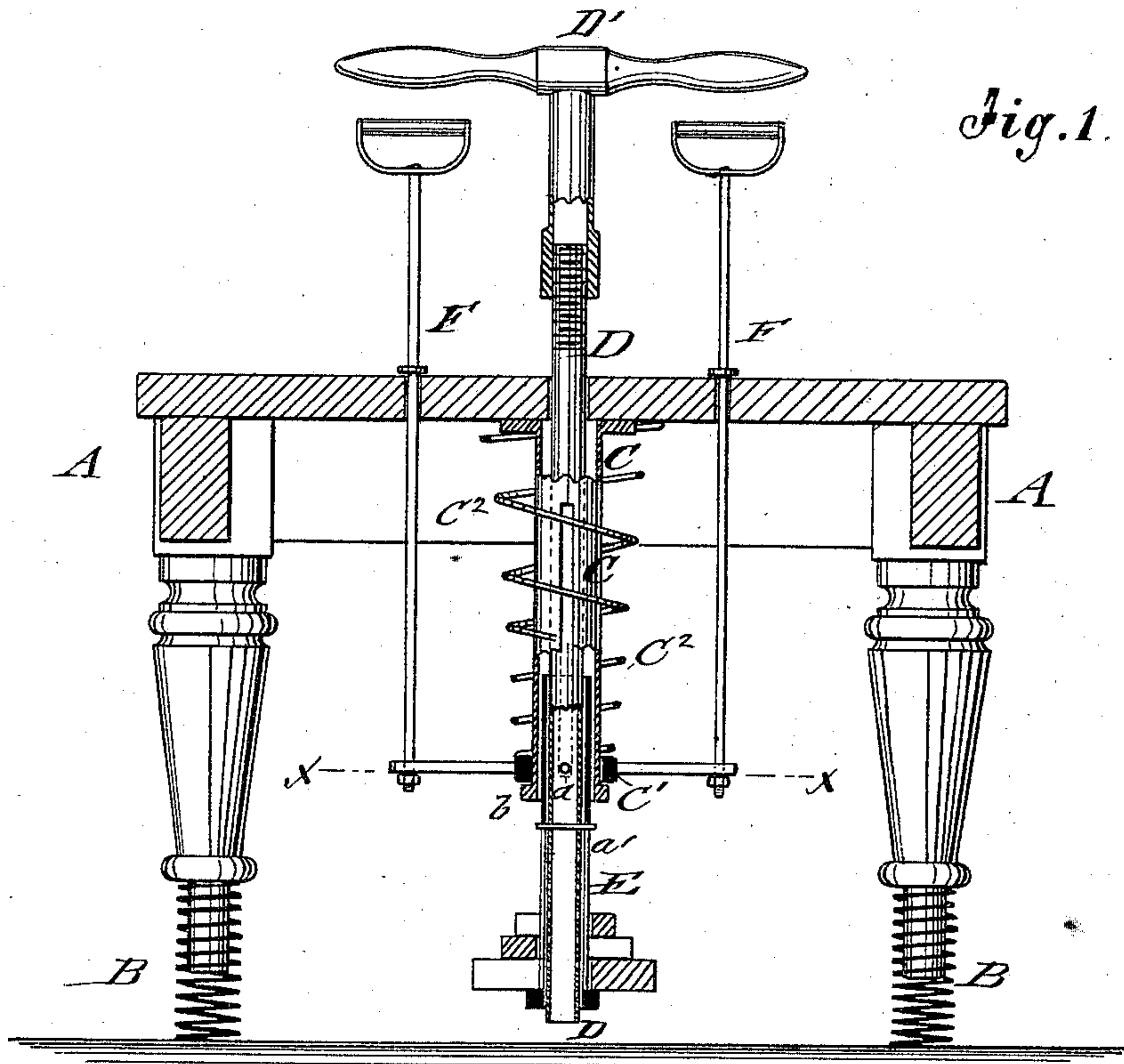


Fig. 1.

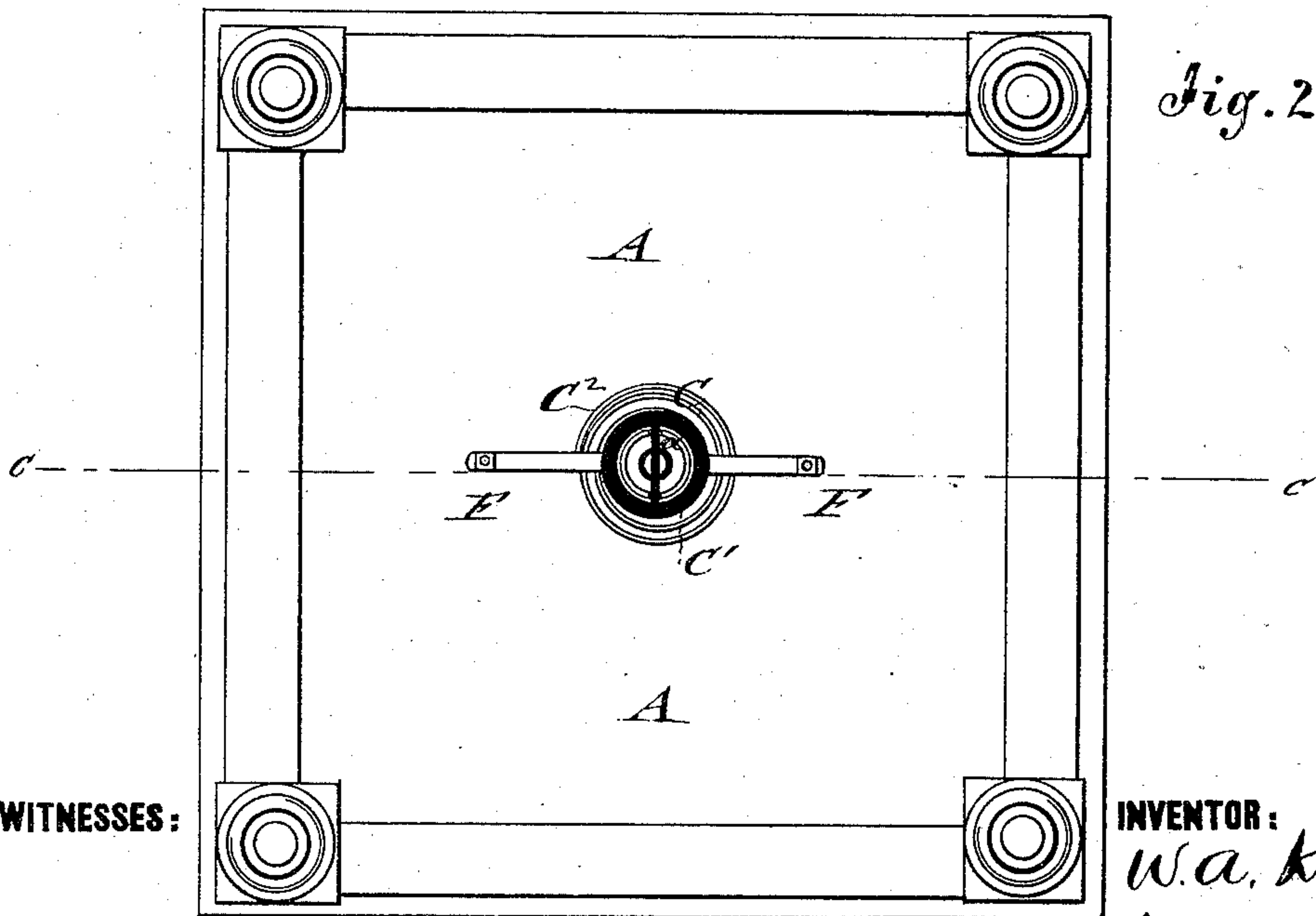


Fig. 2.

WITNESSES:

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A. J. Perry

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UNITED STATES PATENT OFFICE.

WILLIAM ARNOLD KNIGHT, OF WORCESTER, MASSACHUSETTS.

IMPROVEMENT IN EXERCISING APPARATUS.

Specification forming part of Letters Patent No. 163,081, dated May 11, 1875; application filed April 10, 1875.

To all whom it may concern:

Be it known that I, WILLIAM A. KNIGHT, of Worcester, in the county of Worcester and State of Massachusetts, have invented a new and Improved Exercising Apparatus, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a vertical central section on the line *c c*, Fig. 2, of my improved exercising apparatus; and Fig. 2 is a bottom view of the same, partly in section, on line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

My invention relates to an apparatus or instrument for the gradual development of muscular strength, and for the treatment of chronic diseases by bodily exercise, which is constructed with the object of gradually increasing the strain until the maximum is reached, and then relaxing the same, so as to avoid the equal and constant strain of other spring exercising apparatus.

The invention consists of a table, provided with lifting-handles, that are operated against an adjustable combination of spring and weight, that can be used singly or jointly.

In the drawing, A represents the platform or table of my exercising apparatus, whose legs are placed on springs B, preferably inside of the hollow lower ends of the legs, for the purpose of giving elasticity to the lift when raising a dead weight from the floor. A slotted tubular socket, C, is attached firmly to the under side of table A, and serves to guide the interior tubular piston D, that is connected, by a pin, bolt, or other fastening device, *a*, with a collar or yoke, C¹, sliding on the outside of socket-tube C, and resting on a collar, *b*, at the lower end of the same. A second pin, *a'*, connects the lower perforated part of sliding piston D with slotted and weighted tube E, that slides intermediately between socket-tube and piston, and may be adjusted to a higher or lower point at the piston, so

that the weighted tube E may be raised at any desirable moment on raising the sliding piston. The yoke C¹ carries a spiral spring, C², of sufficient power for the purposes of the apparatus, which is compressed by raising the handle D', screwed to the upper end of the piston D. Yoke C¹ has side-extending arms, to which vertical slide-rods F, with small top handles, are applied for side use. The intermediate tube E carries on its base-collar a number of detachable weights, which allow not only the adjustment of the apparatus to any desired degree of spring and dead-weight action combined, but also, by the higher or lower setting of weighted tube, the raising of the weight at any desirable moment after the spring has been partly compressed.

A perfectly-graduated machine is thus obtained, which starts from a minimum strain, by gradual increase to maximum strain, and back again to the minimum strain, requiring no sudden effort to overcome a constant or fixed strain, but admitting, by a gradually-increasing effort, a regular training and developing of the muscles, and a successful treatment of diseases, which approximates more nearly to the course of nature by forming higher muscular force.

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

The combined adjustable spring and weight lift or exercising device, constructed of outer slotted guide-socket, sliding interior piston, carrying-yoke, and spring, together with perforated and weighted supporting intermediate tube, admitting separate or joint graduated use of apparatus, all substantially as and for the purpose set forth.

WILLIAM ARNOLD KNIGHT.

Witnesses:

GEORGE H. BALL,
J. HENRY HILL.