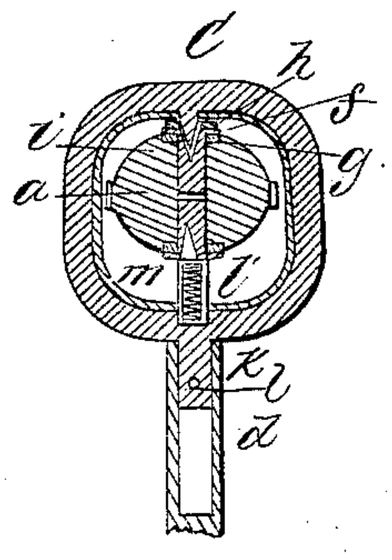
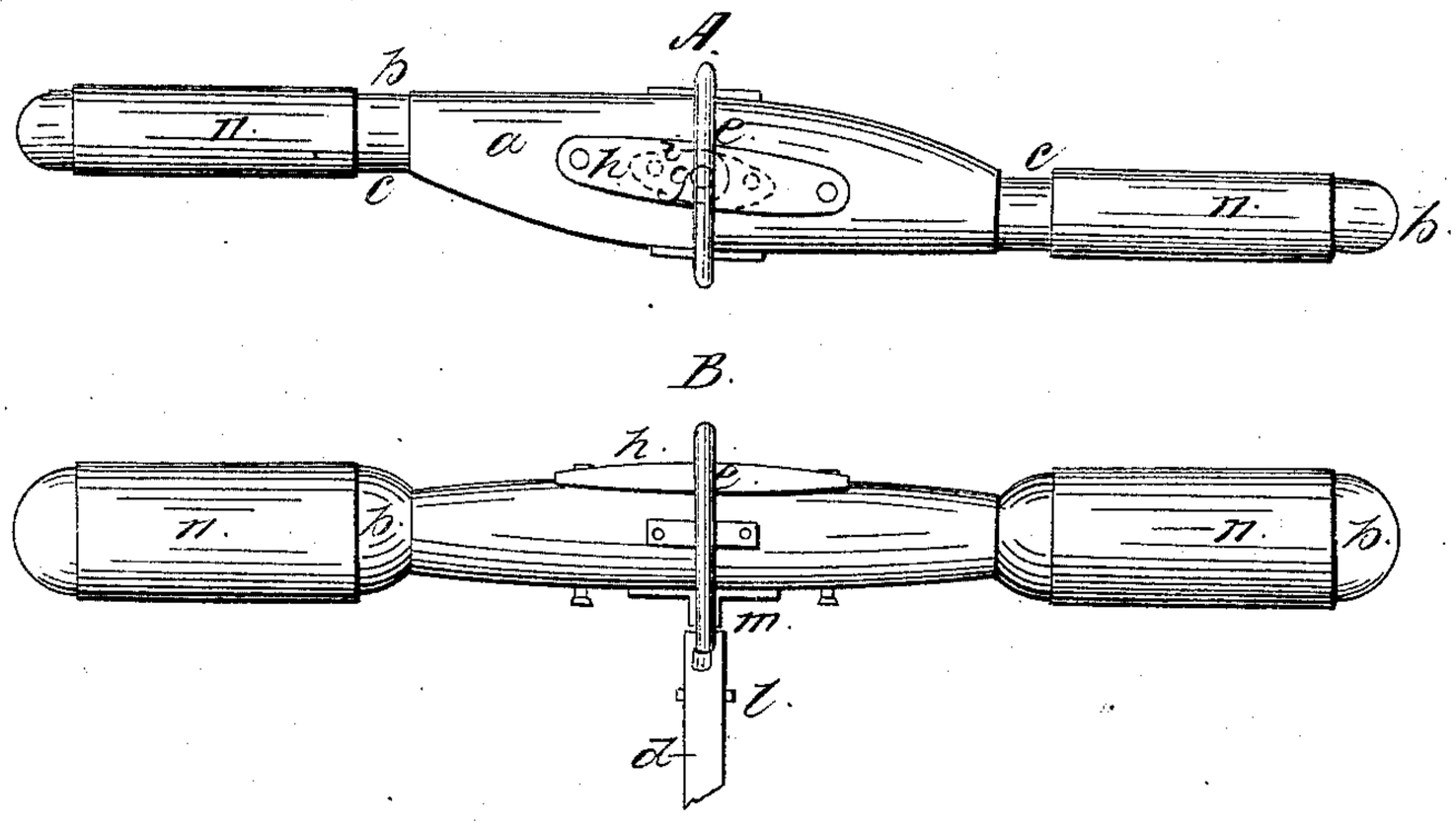
D. P. Butler,

Exercising Machine.

No. 55,618. Patented June 19 1866.





Witnesses:
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M. W. Frothingham

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By his Atys
Crosby & Gould

UNITED STATES PATENT OFFICE.

D. P. BUTLER, OF BOSTON, MASSACHUSETTS.

LIFTING-BAR.

Specification forming part of Letters Patent No. **55,618,** dated June 19, 1866.

To all whom it may concern:

Be it known that I, D. P. BUTLER, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improved Bar for Lifting Apparatus; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

In the construction of that class of lifting apparatus used for hygienic or gymnastic purposes in which the weight is suspended under the table upon which the person stands, and is lifted by application of the hands to the opposite ends of a bar applied to the top of the rod or chain upon which the weight is suspended and passed between the legs, the weight being raised by straightening the body from a slightly stooping position, brought about by bending the knees a little outwardly, it is customary to use a bar cut down at the ends to fit the grasp of the hands.

It is to the construction of this bar that this invention relates; and the invention consists in so constructing the opposite ends thereof that the inner surface or palm of each hand, just where the fingers join the hand and where the weight is sustained, is brought directly in line with the center of the bar, or the point from which the weight is suspended; also, the manner of applying the weight-ring to the handle and to the weight-rod.

The drawings show at A a plan, at B a side view, and at C a central cross-section, of my improved bar or handle and the ring through which it is slipped to effect the lifting.

a denotes a center piece or bar; *b b*, two end pieces fixed to or forming part of said piece *a*. By reference to the view at A it will be seen that one side, *c*, of each of these handle-pieces *b* and the opposite side of the other are made in line with the center point of the bar *a*, at which point the weight is suspended. These pieces are made of a form to be grasped and held tightly and easily by the hands, the inner surfaces of which take hold of the side or faces *c* in line with the center point, and as the weight is borne upon the metacarpal bones, while the fingers serve to gripe or cling to the handles, it will be obvious that this construction brings the holding or weight-sustaining parts of the two hands in direct line with the center point of the bar, and in the positions most advantageous for exertion of the maximum of lifting power in this method of practice. In the construction of other handles or bars of this kind these surfaces are not brought into line with the center point of the bar, and I have found by practice and demonstration that fifty to a hundred pounds more can be raised with a handle or bar having this improved construction.

In the old form it is necessary to change one bar for another, as the hands are alternated in position, the right hand being brought before and the left behind the body, or vice versa; but with the improved bar the surfaces for the application of the lifting parts of the hands, being in line with the center, as described, the same bar is brought into position for either position of the hands by simply turning it round. The weights to be raised are connected to the bar by a rod, *d*, and ring *e*. To prevent the ring from slipping on the bar a depression is generally made across the top surface of the bar, into which the bearing-edge of the ring is slipped. This is objectionable, because it brings the body violently round to conform with the position of the bar, and I therefore provide the ring with a pivot or point, *f*, and make the bar with a socket, *g*, into which the pivot is slipped, this arrangement allowing the bar to turn slightly with respect to the ring at the commencement of exertion of the lifting power.

I generally prefer to make the bar of iron, in which case the socket is made directly in the surface of the same; but where wood is used a metal socket-piece, *i*, is affixed to the surface of the bar.

An elastic cushion, *h*, is interposed between the ring and bar, so that the power may be brought to bear gradually, instead of taking the whole strain abruptly, as when no such provision is made.

As the bar is constructed for use in either position of the hands, as set forth, by turning it over each bearing-surface of it is provided with the socket or socket-piece and the elastic cushion, each cushion being so applied that it may be slipped out from the surface next to the rod.

It is desirable to so connect the ring with

the rod that it may be easily detached therefrom, and I employ various means for effecting this connection, one of which is shown in the drawings, wherein the top of the rod is made tubular, and a shank, *k*, is made upon the ring, said shank entering the rod and being keyed thereto by a pin, *l*, or in any other suitable manner. A hook may be formed on the shank and an eye on the rod, or vice versa. This enables the ring and bar to be removed together, or the ring to be attached to the bar before application to the rod.

To hold the ring in position with respect to the bar a spring, *l'*, is inserted in the head of the rod, this spring pressing a slide, *m*, up against the bar and holding the pivot *f* down in its socket.

For protection of the hands the handles *b* may be covered with buckskin or other suitable soft material *n*.

I claim—

1. The construction of the lifting-bar with the surfaces *c* in line with the center of the bar *a*, substantially as set forth.

2. The socket or socket-piece on the bar and the pivot on the ring, substantially as shown.

3. The elastic cushion placed between the ring and bar.

4. The construction of the bar with the sockets or socket-pieces on opposite surfaces thereof, substantially as and for the purpose set forth.

5. Making the ring detachable from the weight-rod, substantially as set forth.

6. Combining with the ring the spring *l*, by which the ring and bar are held together, substantially as described.

In witness whereof I have hereunto set my hand this 13th day of February, A. D. 1866.

D. P. BUTLER.

Witnesses:

J. B. CROSBY,

F. GOULD.