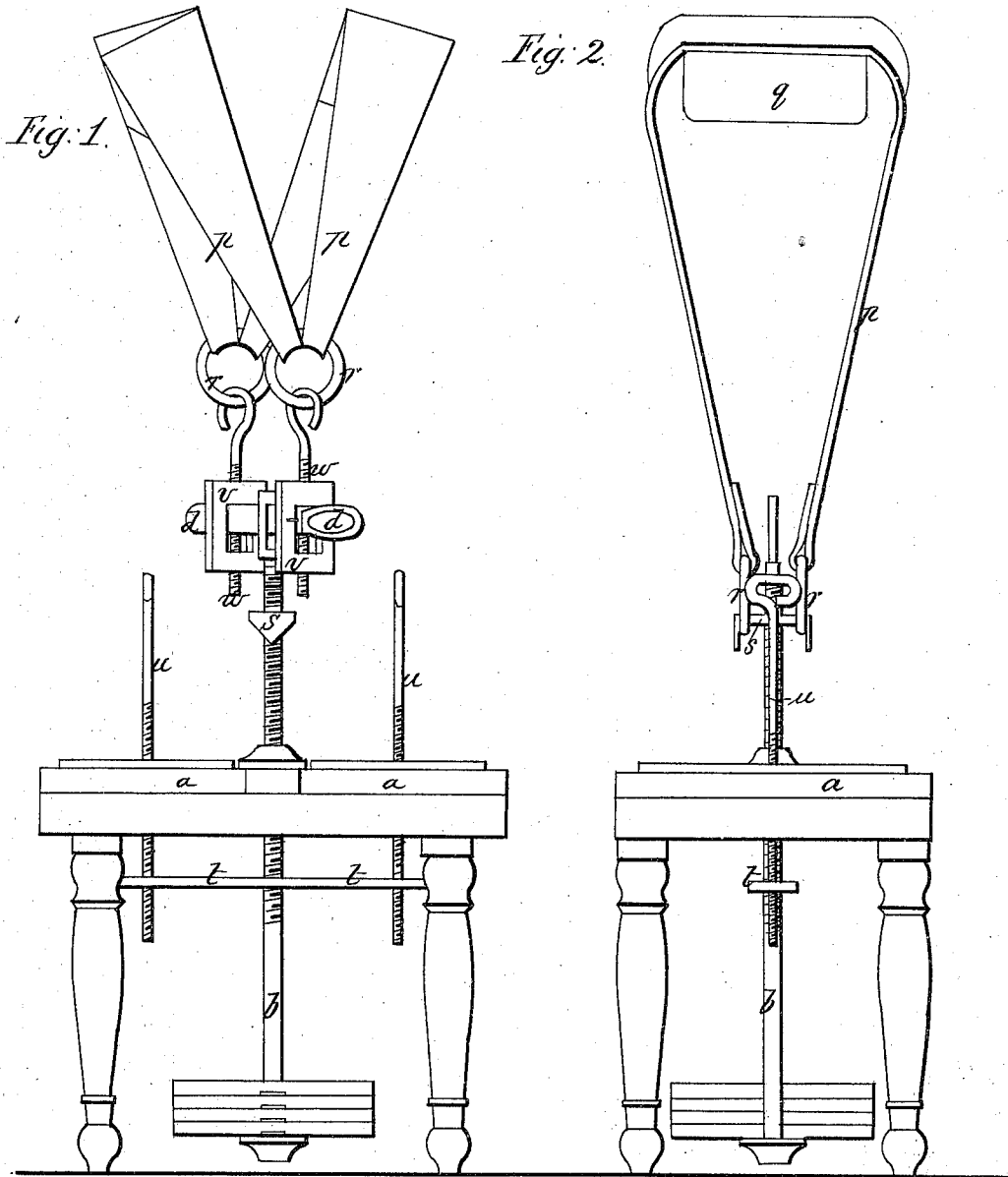


I. P. Butler.

Lifting Appar.

No. 87,405.

Patented Mar. 2, 1869.



Inventor,

Witnesses;
L. H. Hidden,
C. Warren Brown.

I. P. Butler,
by his atty
Erosby & Baker of Gull

United States Patent Office.

D. P. BUTLER, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 87,465, dated March 2, 1869.

IMPROVEMENT IN LIFTING-APPARATUS.

The Schedule referred to in these Letters Patent and making part of the same.

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 certain new and useful Improvements in 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 practise it.

This invention relates to certain additions to and improvements upon the apparatus patented by me, under the number 48,050, dated June 6, 1863, by which additions and improvements a weight, located centrally, directly beneath the body of a person whose spine is substantially in line with the centre of gravity of the weight to be lifted, can be raised by straps applied over the shoulders of the person, or by compounding with the shoulder-lift the power of the arms and hands, placed either at the sides of the body or before and behind it, or so that the weight can be lifted by and through the hands, in the position in which they hang naturally by the sides of the body.

In the drawings, which illustrate an embodiment of my invention, there are two views—

Figure 1 being a front view or elevation, and

Figure 2, a side view of my improved apparatus.

The table or platform, the weight, and the suspending and lifting-rod, are all as shown in my aforesaid patent; hence, I shall pass at once to the additions made by me, and which form the subject of this application.

To apply the muscular force of the body, as exerted from the shoulders, to lift the weight *c*, suspended on the rod *b*, I make use of two straps, *p*, of suitable length and strength, which straps are provided with pads, *q*, and are united at the ends to rings, *r*.

These straps or harness are put over the head and neck of a person, so that the pads rest on the shoulders, with the ends to which the rings are fastened, depending in front of and in the rear of the body.

When the exercise is to be that of lifting from the shoulders alone, then I make use of a piece, *s*, which is capable of adjustment, as a nut, up and down on the screw-threads formed on the rod *b*, so as to make the connection between the body and the weight such that the maximum lifting-effect will be produced with the minimum of exertion and movement.

The piece *s* is made with hooks or projections, over which the harness-rings can be slipped, to couple the harness and the person to the weight, which, when the proper adjustments have been made, with the spine of the person directly over the centre of the weight, and the legs slightly bent, is then elevated chiefly by the straightening of the legs.

In order to bring the hands and arms into action, when at the sides of the body, I locate on the rod *b*, beneath the table-top *a*, a cross-bar, *t*, which may be adjusted as a nut up or down on the screw-threads on rod *b*.

This cross-bar is made long enough to receive rods, *u*, made with handles, and located at such distances apart from the rod *b*, that the handles of rods *u* will be in width apart, about the width apart of the hands

of the average of persons, when hanging naturally from the shoulders.

The lower ends of rods *u* are made with screw-threads to fit in nut-threads made in the holes in cross-bar *t*, to receive the rods *u*, and several such holes may be made at each end of the bar *t*, so as to adjust the distance apart of the rods *u*.

The adjustment of the handles of rods *u*, so as to correspond to the requirements of the body of the person who is to exercise, is made by turning the rods, which will raise or lower the handles thereof, according as the rotation is made in one or the other direction.

In combined hand-and-shoulder lifting, a handle, such as is described in my patent, No. 55,618, of June 19, 1866, may be placed through the stirrup or loop at the top of rod *b*.

Over the ends of the handle are slipped links, *v*, through which pass screws, *w*, having hook-formed tops, to which hooks the harness-rings are coupled, the screws *w* affording means for adjustment of the harness relative to the handle *d*, and suited to the conformation of the body.

In this arrangement for compound shoulder and hand-lifting, the person stands astride of the handle *d*, with one hand in front of and one in rear of the body, and so that the spine is substantially in line with the prolongation of the axis of rod *b*.

The compound shoulder-and-hand lifting may be performed with the hands at the sides, instead of at the front and rear of the body, in which case the use of handle *d*, and the links *v*, with their screw-hooks *w*, may be dispensed with, the harness being coupled to the piece *s*, and the hands hanging at the sides in position to grasp handles *u*.

It will be seen that, with this apparatus, a weight, which has its centre of gravity directly under the spine of the person who is to lift it in exercising, may be raised by the hands alone in either of two positions, one at the sides of the body, and the other with one hand before and the other behind the body. Also, that combined hand-and-shoulder lifting may be practised with the weight in the specified relation to the body, either with the hands at the sides, or in the other specified position.

I claim, for lifting in a vertical direction in the line of the spine, the shoulder-strap harness, substantially as shown and described.

Also, in combination with the vertical rod *b*, the cross-bar *t*, and the handles *u*, substantially as and for the purpose set forth.

Also, the combination, with the shoulder-strap harness, of the handle *d*, substantially as described.

Also, the arrangement of the handles, or of the handle, through which the effort of the gymnast is exerted, with screw-threads in connection with nut-threads, so that the height of the handles or handle above the platform can be adjusted without change in the position of the weight.

D. P. BUTLER.

Witnesses:

FRANCIS GOULD,

C. WARREN BROWN.