G. B. Windship,

Exercising Machine,

No. 49,945, Patented Sep. 12, 186.

Fig. 1.

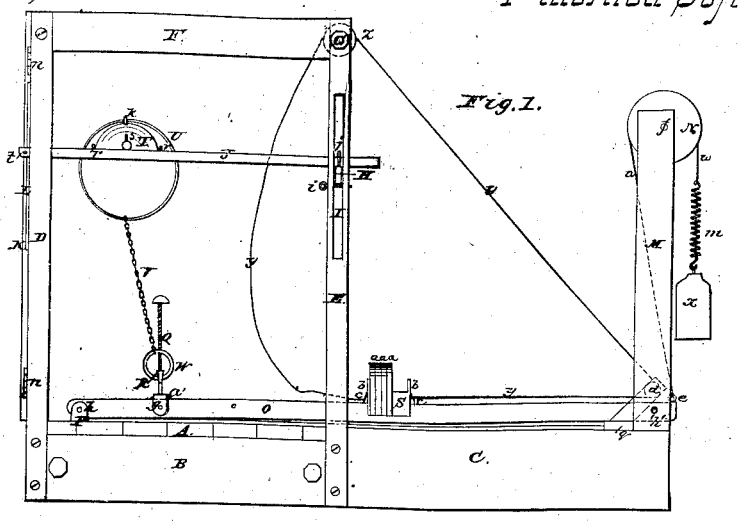


Fig. 2.

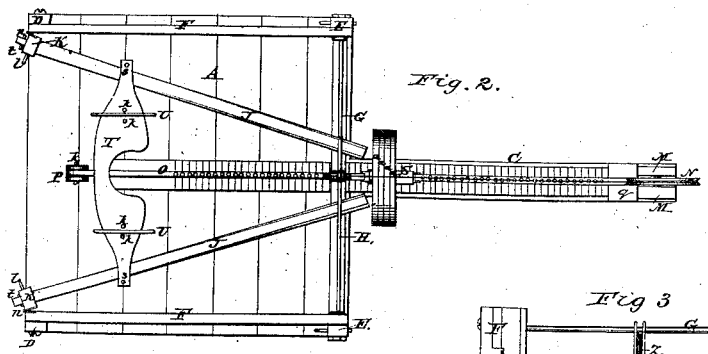


Fig. 3

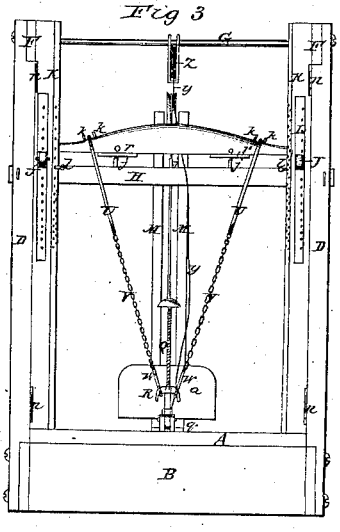


Fig. 6.

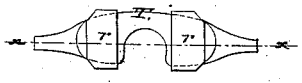
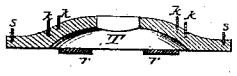


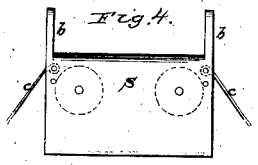
Fig. 7.



Witnesses:
N. Ames,
W. A. Ashe.

Fig. 5.

Fig. 4.



Inventor:
G. B. Windship

UNITED STATES PATENT OFFICE.

GEORGE B. WINDSHIP, OF BOSTON, MASSACHUSETTS.

LIFTING APPARATUS.

Specification forming part of Letters Patent No. **49,945**, dated September 12, 1865.

To all whom it may concern:

Be it known that I, GEORGE B. WINDSHIP, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Lifting Apparatus; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation. Fig. 2 is a top view. Fig. 3 is an end view. Fig. 4 is an enlarged side view of the car on which the weights are moved upon the graduated beam, and Fig. 5 is an end view of the same. Fig. 6 is a plan of the under side of the lifting-yoke, and Fig. 7 is a section of the same in the line *x x* of Fig. 6.

Like parts are indicated by the same letters in all the drawings.

The nature of my invention consists in the combination of an adjustable lifting-yoke, of a peculiar construction, with a graduated weighted lever, and various devices and arrangements whereby the apparatus is readily adapted to the size and strength of the person using it.

To enable others skilled in the art to make and use my invention, I will now proceed to describe the construction and operation of the same.

A is a raised platform, of boards or planks, about four feet square, placed upon the foundation beams or planks B.

C is the central beam, extending under the platform A and about four feet beyond, as represented in Figs. 1 and 2. Attached to the four corners of the platform A are upright studs D D and E E, about six feet high, connected at their upper extremities, on the sides, by means of the bars or braces F F, the two front studs, E E, being also connected by means of the rod or bar G, as seen in Figs. 2 and 3. The two front studs, E E, are also provided with longitudinal slots I I, in which the ends of the horizontal bar H move up and down, being supported at any required height by means of the pins *i*. the said studs being provided with a series of holes a short distance apart for the reception of the same.

Hinged at *n n* to the uprights D D are studs K K, provided with longitudinal slots L L for the reception of the rear ends of the wooden bars J J, the front ends of which rest upon the cross-bar H, as represented in Figs. 1 and 2. The rear ends of these bars J J are supported at any required height in the slots L L by means of the pins *l l*, which may be inserted in any one of the series of holes (see Fig. 3) in the hinged studs K K, *t t* being small pins passed through the ends of the bars J J to prevent the latter from slipping out of the slots L L, the front ends of the said bars being held at any required distance apart by means of the pins *j j*, which may be placed in any one of a series of vertical holes in the horizontal bar H.

P is an iron stud, fast to the center of one end of the platform A directly over the beam C, said stud being slotted for the reception of the lever O, which turns freely on the fulcrum-pin *h*, as shown in Figs. 1 and 2. This lever O is a flat bar of wrought-iron or other suitable material, of the requisite length and strength, extending from the fulcrum forward over the center of the beam C to the end of the same, as represented in Fig. 1; or the fulcrum may be changed from *h* to *h'*, if desirable, thus converting the lever from the third kind to the second. The lifting-point on the lever O may also obviously be changed if ever required.

Attached to the front end of the beam C are two upright studs, M M, between which the lever O plays up and down with freedom. At the upper ends of the uprights M M, between the same, is a pulley, N, which turns freely on the axle *f*, and over this pulley passes a rope, *w*, one end of which is attached to the lever O at *e*, the opposite end being attached to the spiral spring *m*, to which latter is appended the weight X, the purpose of said weight being to counterbalance the too great weight of the lever O when the exerciser wishes or is able to lift but little, while the spring *m* takes off the jar occasioned by the sudden rising of the weight X as the lever O is dropped, and also keeps the rope from being thrown off the pulley. To still further ease the fall of the lever O, and also to deaden the noise of the same, I make use of a pad, *g*, of rubber or other suitable elastic material, placed upon the top of the beam C, as represented in Figs. 1 and 2.

S is the traveling carriage, which sits astride the lever O on two friction-wheels, (represented by the dotted lines in the enlarged drawing,

Fig. 4,) being provided with an upright arm, *b*, at each end to prevent the removable weights *a a a* from slipping off the carriage as the lever O is elevated or depressed. Pivoted to each end of the carriage S is a dog or arm, *c*, the free end of which is pointed, so as to drop into the holes in the top of the lever O, (see Fig. 2,) and thereby prevent the carriage from moving as the lever is elevated or allowed to drop by the exerciser, who is supposed to stand directly under the yoke T, facing the uprights M. In order to enable the exerciser while standing in this position to readily move the carriage with its weights, so as to graduate the resistance which he may desire to overcome, I make use of a small rope, Y, which, passing round the pulley Z and *d*, is confined at either end to the said dogs *c c*. When the rope Y is slack the free ends of the said dogs will by their own weight drop into the holes in the top of the lever O, but if the end of the rope attached to the dog nearest the exerciser is pulled, the said dog will be raised from the hole in which it may happen to be, so that the carriage will be free to be drawn in that direction. By pulling down upon the said rope, over the pulley Z the opposite dog will be raised and the carriage will be free to be drawn in the opposite direction.

The top of the beam C is graduated as represented in Fig. 2, so as to indicate to the exerciser the power required to raise the lever O when the carriage is in any given position.

T is a yoke, of wood or other suitable material, constructed substantially like yokes in general use for carrying pails of water, &c. I employ, however, two pads or springs, *r r*, of india-rubber, placed across the concave or under side of the yoke and confined at both ends, so as to stretch upon the exerciser's shoulders and form for the same a soft, elastic bed.

U U are two large rings, of iron, which are placed on over the yoke between the pins *k k* or *k* and *s*, on either side, as represented in Figs. 1, 2, and 3. To each of these rings U is attached a chain, V, which is terminated by a smaller ring, W.

Q is an iron rod, pivoted at *g* to the lever O, as shown in Figs. 1 and 3, its lower end being expanded and divided centrally, so as to sit on over the said lever, a space being left between the top of the lever and the said rod, into which a rubber pad or spring, *a'*, is placed, which will allow the rod to sway backward and forward to conform to the position of the body of the exerciser, and then bring it (the rod) again into a vertical position.

The distance between *g* and *h* may be varied, if desirable.

R is a nut or swivel, provided on is opposite sides with two horns or handles, bent downward, onto which the rings R R are hooked, as represented in Fig. 3. This nut or swivel R screws easily up and down on the rod Q, so as to be adjusted to any required distance from the top of the lever O, according to the height of the shoulders of the exerciser. On the upper end of the rod Q is a head, rounded so as not to injure the lifter's limbs or body in case they should come in contact with it.

The operation of the apparatus is as follows: The horizontal bars or hand-rests J J being adjusted, by the means described above, the requisite height from the platform A, and their front ends being fixed the proper distance apart, the exerciser places his shoulders and neck under and in the yoke and his arms through the large rings U U, and, facing the upright M, stands with one foot each side of the lever O, just back of the rod Q, so that the two chains V V shall pass diagonally across the front of the thighs. He then bends his knees a little, throws his body forward, placing his hands upon the bars J J, and lifts. If he now wishes to increase or diminish the resistance, he has only to move the weighted car S toward or from him by means of the cord Y, as fully explained above.

The purpose of having the rings U U so large is to enable the lifter to pass his arms through them, so as to move them freely on the bars J J, bring the traction directly under his shoulders, and prevent his body from being thrown backward or forward too far.

This method of lifting secures a more general development and exercise of the body than can be obtained by any other means, besides producing specific effects of great importance in a medical point of view on several regions of the body, which are but little effected by ordinary mechanical expedients. Instead of using a yoke, however, it is obvious that my apparatus is equally applicable to lifting by hand, a rope or chain with a suitable handle being attached to one of the horns of the swivel R for that purpose.

Having thus described the nature and operation of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination and arrangement of the weighted lever O, yoke T, and connecting-chains V V, or their equivalents, substantially as set forth, and for the purpose described.

2. The combination and arrangement of the sliding car S, rope Y, and pulleys *d z*, or their equivalents, substantially as set forth, and for the purpose described.

3. The dogs *c c*, attached to the car S and operating in combination with the rope Y, and the holes in the top of the lever O, substantially as and for the purpose described.

4. The nut or swivel R and rod Q, in combination with the lever O, chains V, and yoke T, or their equivalents, substantially as and for the purpose specified.

5. The employment of the rubber spring between the top of the lever O and the rod Q, substantially as and for the purpose described.

6. The employment of the large rings or

hooks U U, in combination with the yoke T, chains V V, and lever O, substantially as and for the purpose described.

7. The bars or hand-rests J J, in combination with the hinged and slotted upright studs K K and bar H, whereby said rests are rendered vertically and laterally adjustable, substantially as and for the purpose described.

8. The weight X, cord *w*, (either with or without the spring *m*,) and pulley N, when arranged and operating in combination with the lever O and lifting apparatus, substantially as set forth, and for the purpose described.

G. B. WINDSHIP.

Witnesses:
N. AMES,
W. A. ASHE.