A. W. LOZIER.

HEALTH-LIFT.

No. 190,150. Patented May 1, 1877.

Fig: 1

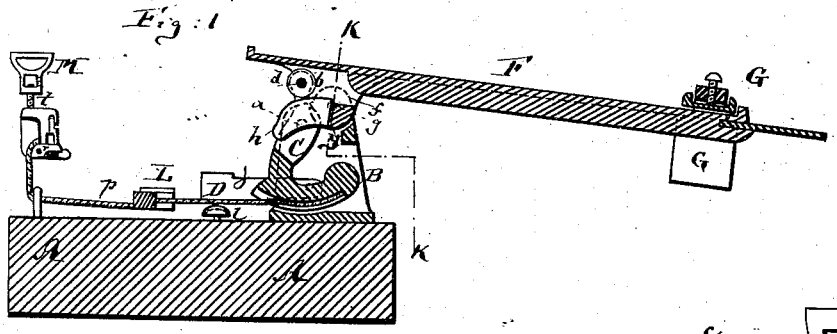


Fig: 7

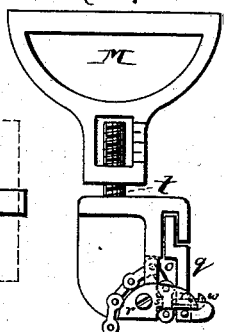


Fig: 2

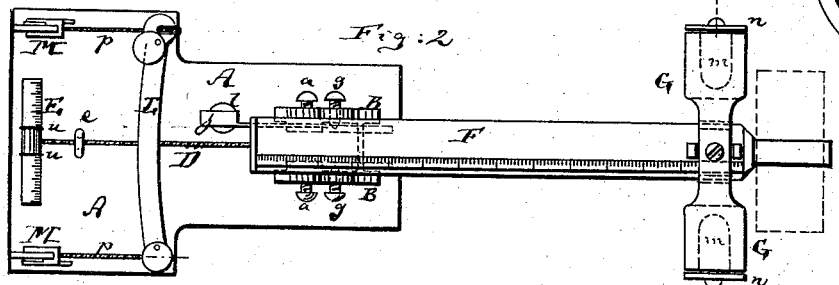


Fig: 6

Fig: 4

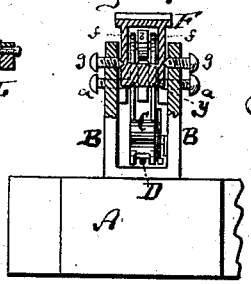


Fig: 3

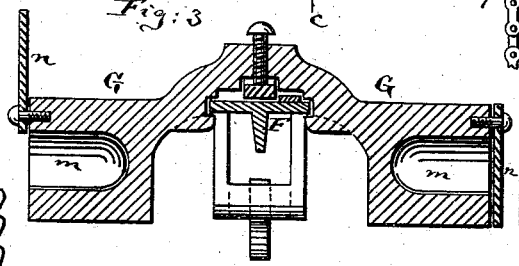


Fig: 8

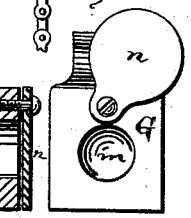
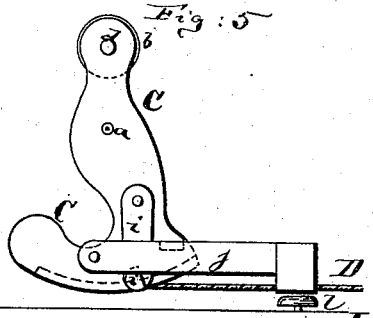


Fig: 5



Witnesses:

A. Moraga

Ernest F. Webb

Inventor:

A. W. Lozier

by his attorney

A. V. Briesen

UNITED STATES PATENT OFFICE.

ABRAHAM W. LOZIER, OF ORANGE, NEW JERSEY, ASSIGNOR, BY MESNE ASSIGNMENTS, TO MRS. J. DE LA M. LOZIER, OF NEW YORK, N. Y.

IMPROVEMENT IN HEALTH-LIFTS.

Specification forming part of Letters Patent No. **190,150**, dated May 1, 1877; application filed September 29, 1876.

To all whom it may concern:

Be it known that I, ABRAHAM WITTON LOZIER, M. D., of Orange, in the county of Essex and State of New Jersey, have invented a new and Improved Health-Lift, of which the following is a specification:

Figure 1 is a vertical longitudinal central section of my improved health-lift. Fig. 2 is a top view thereof; Fig. 3, a vertical transverse section, on an enlarged scale, on the line *c c*, Fig. 2; Fig. 4, a vertical transverse section on the line *k k*, Fig. 1; Fig. 5, a detail side view, on an enlarged scale, of the lifting-lever; Fig. 6, a detail cross-section through the end of the equalizer-bar. Fig. 7 is an enlarged side view of a handle, M. Fig. 8 is an end view of the adjustable weight.

Similar letters of reference indicate corresponding parts in all the figures.

This invention relates to a peculiar construction and arrangement of lifting apparatus handle and chain-lock used in health-lifts and for analogous purposes; and consists, principally, in a peculiar arrangement of a lifting-lever used between the lifting rope or chain and a counterbalancing-weight. The invention also consists in other features of improvement, all as hereinafter more fully described.

In the accompanying drawing, A represents the base or bed plate of the machine, supporting rigidly-projecting standards or frame B, on which is hung by a pivot or axle, *a*, the lever C. (Shown more clearly in Fig. 5.) This lever is forked at its upper part, or slotted, as indicated in Fig. 4, and carries in its fork or slot a friction-roller, *b*, which is hung on a pin, *d*, that has its bearings in the upper jaws of the lever C. The lower end of the lever C is preferably segmental in form, and connects with a rope or chain, D, that connects either with a single lifting-handle, E, or with an equalizer cross-bar, L, said rope or chain passing around a friction-roller, *e*, before reaching said handle E; but this friction-roller may be dispensed with in case a horizontal pull or side lift is desired. When the equalizer-bar L is used its ends connect by chains or cords *p p* with handles M. (Shown in Figs. 1 and 2.) F is the weighted bar, which is to be lifted by the operator. This bar has its nearest or front end provided with downwardly-projecting lugs *f*, which are by pins *g* pivoted in the standards B, as shown, said pivot-pins *g* being at some distance behind and also above the pivot *a* of the lever C. A hook-shaped toe, *h*, which projects from a lower-cross-bar, *y*, that joins the lower parts of the lugs *f*, or directly from the bar F, projects into the slot of the lever C, directly beneath the friction-roller *b*, as shown. The adjustable weight G rests on the bar F. Now, a person pulling on the handle E or handles M M will vibrate the lever C and thereby swing its upper end backward, causing the friction-roller *b* to approach the pivot *g*, and in so doing to ride on the eccentric toe *h* of the bar F, and swing said bar on its pivot *g*. Now, it is clear that the farther the lever C is thus vibrated the nearer will the roller *b* approach the pivot *g* of the weighted bar; or, in other words, the nearer the fulcrum of the lever F will be to the power applied, and, consequently, the more difficult will it be to vibrate said lever against the counteracting influence of its weight G. This is the principle to be attained by my invention, to wit: the gradually-increasing resistance of the weight to the action of the operator.

Another feature of the invention consists in the use of a simple trigger attachment, *i*, to the lever C, which, when the weighted bar F has been elevated to its greatest height reaches and acts upon a hammer, *j*, and causes the same to strike an alarm or gong, *l*.

A further feature of this invention has reference to the construction of the adjustable weight G, which is made in the form of a cross-bar riding on the bar F and adjustable thereon, and which can be fastened thereto by a suitable set-screw. The ends of this weight G are made hollow, as shown in Fig. 3, so that they may be more or less filled with additional weight, or emptied, as may be desired, the cavities *m m* being closed by suitable gates *n*. An additional weight may be placed on the bar F whenever desired, and on any suitable part thereof. The end of the chain or rope connects with the handle M by passing through an aperture into a small chamber, *o*,

which is closed at one side by a pivoted latch, *q*, and at the front by another latch, *r*, the chain locking, moreover, over a lug, *s*, that projects into the chamber *o*, as indicated in Fig. 7. By this means the chain is firmly secured. For additional security, a set-screw, *w*, may be applied through the latch *q* against the chain. The lug *s* may be dispensed with. The shank of the handle M is made in two parts, which are connected by a screw, *t*, or analogous device, such as a ratchet, so that the length of the handle may be regulated to suit taller or shorter persons. A scale may be formed on one of the parts of the handle to allow accurate adjustment.

The single handle E is made with adjustable rings *u u*, working on a scale, so that they may be placed exactly as far apart as the operator requires them, and always equidistant from the middle of the handle.

I claim as my invention—

1. In a lifting apparatus, the combination of the lever C, carrying the friction-roller *b*, with the weighted bar F, having the toe *h*, substantially as specified.

2. The combination of the vibrating lever C with the trigger *i* and hammer *j*, substantially as and for the purpose set forth.

3. The adjustable weight G, made with hollow ends, and provided with gates *n*, as specified.

4. In a health-lift, the chain-lock, composed of the chamber *o*, and latches *q* and *r*, substantially as specified.

5. The combination of the lifting-machine handle with the adjustable rings *u u*, as specified.

ABRAHAM WITTON LOZIER, M. D.

Witnesses:
ERNEST C. WEBB,
F. V. BRIESEN.