

W. B. BLAKE.
HEALTH-LIFT.

No. 177,794.

Patented May 23, 1876.

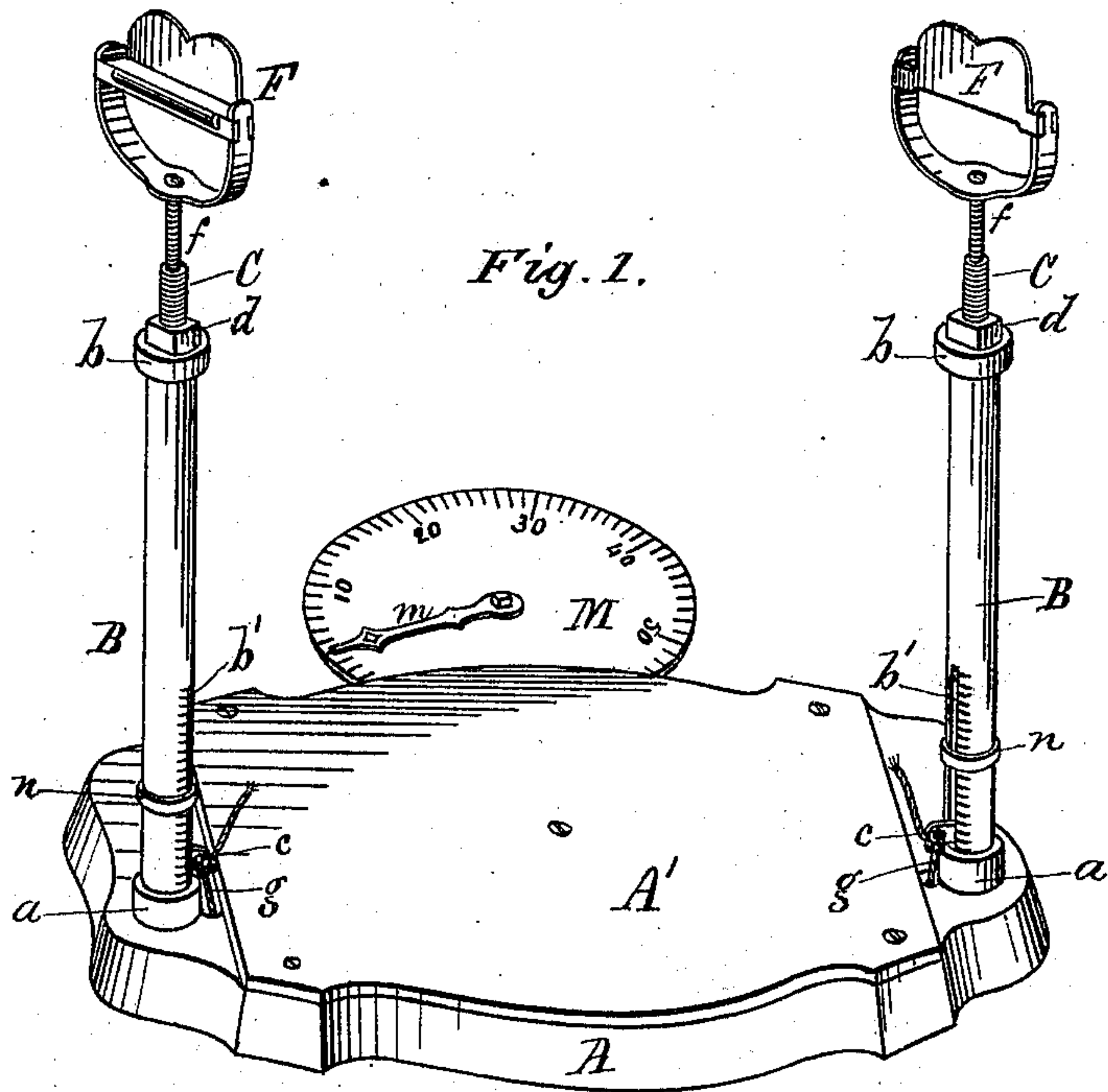
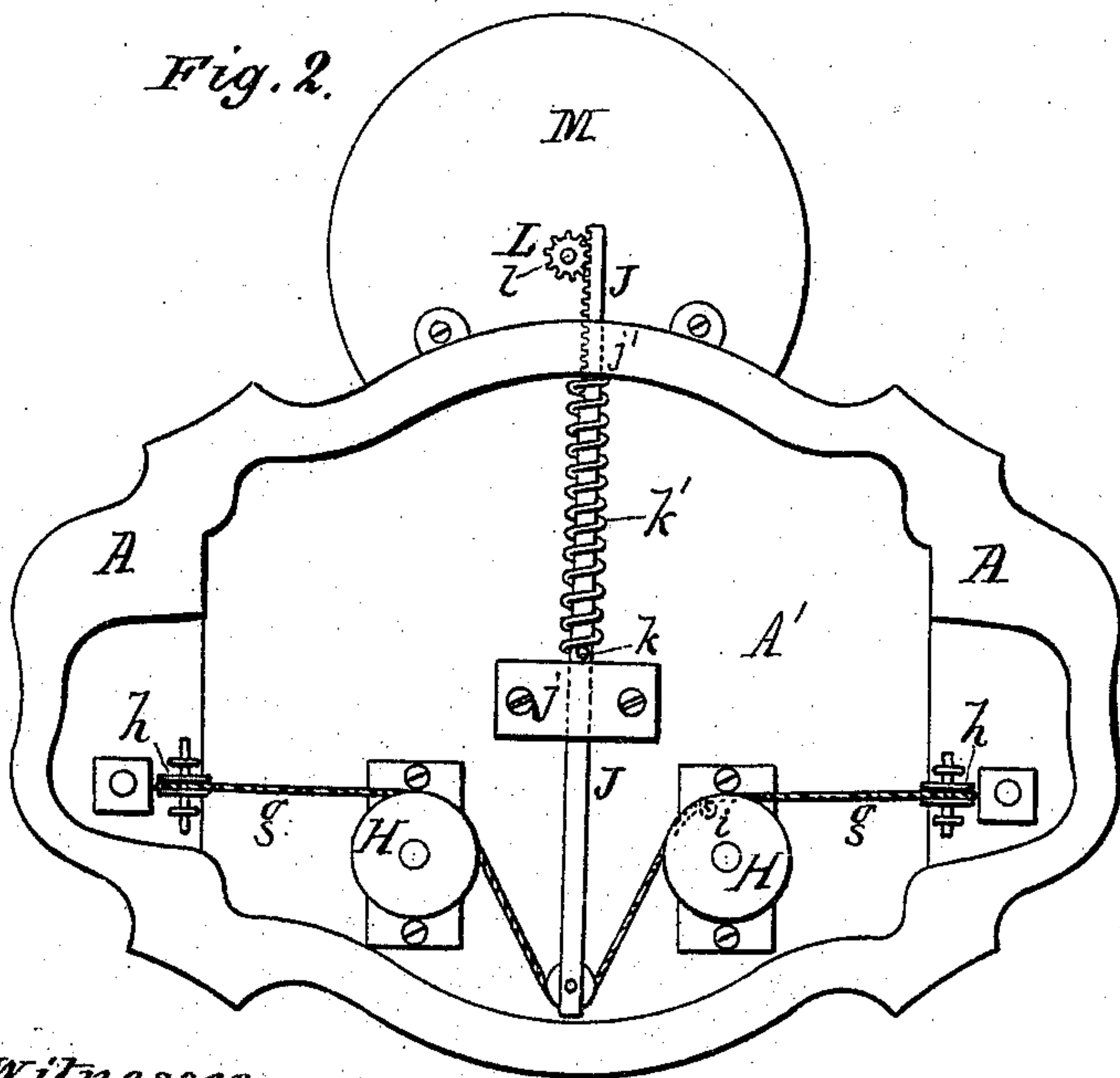
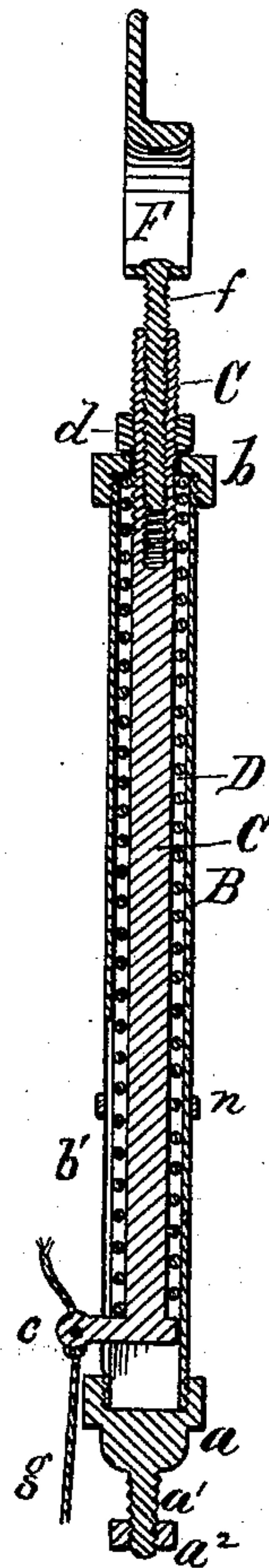


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM B. BLAKE, OF CANTON, OHIO, ASSIGNOR OF TWO-THIRDS HIS RIGHT
TO GEORGE D. SAXTON AND ZEBULON DAVIS, OF SAME PLACE.

IMPROVEMENT IN HEALTH-LIFTS.

Specification forming part of Letters Patent No. **177,794**, dated May 23, 1876; application filed
March 22, 1876.

To all whom it may concern:

Be it known that I, WILLIAM B. BLAKE, of Canton, county of Stark, and State of Ohio, have invented certain new and useful Improvements in Health-Lifts, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of the improved health-lift. Fig. 2 is a bottom view of the same, and Fig. 3 represents a vertical section, on an enlarged scale, through one of the tubular standards.

Similar letters of reference indicate corresponding parts wherever used.

The invention consists, first, in a novel arrangement of springs inclosed within guiding and registering tubes or tubular standards secured to the sides or ends of the base-plates; second, in the combination, with the inclosed springs, of threaded tubular rods provided with adjusting-nuts, whereby the resistance or tension of the springs may be regulated to suit the different weights it is desired to lift; third, in a novel arrangement of registers for independently indicating the power exerted by either side or arm, in connection with adjusting-handles for favoring the weaker side, and with a third register indicating the entire force exerted, whether by one or both hands; and, lastly, in the manner of connecting the third register with the mechanism of the side springs, as hereinafter described.

In the accompanying drawings, A represents a base plate or frame, consisting, preferably, of an open casting, of the form substantially as indicated in the drawings; but it may be made of any desired form, and of any suitable material. This base plate or frame is perforated at its ends or sides, and has sockets formed in its upper side or face, surrounding said perforations, for the reception of socket-pieces *a a*, the threaded shanks *a¹* of which extend through the base-plate and are secured therein by nuts *a²*. The socket-pieces *a* are made tubular, or provided with sockets in their upper ends, for the reception of the lower ends of the tubular standards B, rigidly secured therein. The upper ends of these

standards have perforated cap-plates *b* secured to them, which serve as guides to reciprocating rods C arranged within the tubes B, as shown, and provided at their lower ends each with an arm or spur, *c*, which projects through a slot, *b'*, at the inner side of the tube. Surrounding the rod or slide C, within the tube B and between the arm *c* and the cap-plate *b*, is a spiral spring, D, the tension of which is exerted to force the rod downward, with the arm *c* resting at the bottom of the slot *b'* upon the socket-piece *a*. The upper end of the rod C is made tubular, and is threaded upon both its outer and inner faces, a nut at *d*, surrounding the rod and resting on the cap *b*, serving by its adjustment to regulate the tension of the spring D and the position of the rod C, as desired. F F are the handles, provided each with a threaded shank, *f*, which matches the screw-thread formed within the tubular end of the rod C, and forms an adjustable extension of said rod, for adjusting the height of handles to suit the operator, or for favoring one side or the other, as the requirements of the operator may dictate. The arms *c c* of the rod C have cords *g* connected with them, which extend down through eyes or perforations in the base plate, and underneath grooved guiding-rollers *h*, mounted in suitable bearings in lugs or ears formed within sockets or recesses in the base-plate, as shown. The open portion of the base plate or frame between the tubular standards B B is covered by a platform, A', and to the lower face of this platform, within the annular base plate or frame, two horizontal pulleys, H H, are mounted on vertical pivots, with their forward faces near about in the same transverse vertical plane with the rollers *h*, as shown in Fig. 2. The cord (or cords) *g* extends under the pulleys *h* and in front of the pulleys H H', to which it is secured by a fastening eye or pin, indicated by dotted lines at *i*, Fig. 2, whence it is deflected between the pulleys H H' and passes around a pulley mounted in the rear end of a horizontal slide rack or bar, J, mounted in suitable guiding-brackets at *j j'* in the base-plate, and upon the lower face of the platform A, as shown. The slide-rack J in front of the bearing *j* is provided with a pin, *k*, which limits its

backward throw, and between said pin and the base-plate or frame at j' the bar is surrounded by a spring, k' , the tension of which, when not overcome by the operator, serves to hold the bar with the pin k resting against the guide-bracket j . The outer or forward end of the bar J , which passes through a perforation in the base-plate A , is provided with a toothed rack, which engages with, and, as the rack-bar is reciprocated, imparts a rotary motion to a pinion, L , mounted loosely upon a vertical shaft, l , which has its bearings in a dial-plate, M , attached to the base-plate A . The pinion L has a pin or spur projecting from its lower face, which engages with a horizontal pin in the lower end of the shaft l , for rotating said shaft in one direction, while leaving the rack and pinion free to be retracted to their former or normal position without acting upon the shaft l . The shaft l has an index-hand, m , secured to its upper end, and the plate M is graduated at its outer edge, and provided with any suitable arrangement of figures, as shown, for indicating the power exerted.

By this arrangement it will be seen that when power is applied through the handles F the index m will be vibrated, through the connecting devices described, for indicating the amount of power so applied, and there left, while the rack and pinion are retracted by the springs k and D , leaving the index m to be retracted at the will of the operator, either by hand or by a suitable spring for that purpose controlled or released by the operator. The tubes $B B$ at the sides of the slots b' have scale-marks formed upon them, and light bands $n n$ surrounding the tubes, and resting on the arms $c c$ for the purpose, are lifted by said arms, and serve to indicate the amount of

power applied to each handle, respectively, the friction of the bands, whenever desired, serving to hold them at any point to which they may be raised. Other suitable forms of indicators may be used in place of the bands n , if preferred.

The operation of the several parts will be readily understood from the foregoing description.

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

1. In combination with the base-plate A , the tubes or tubular standards $B B$, spring D , and lift-rods C , arranged to operate within said tubes, substantially as described.

2. The tubes $B B$, having the socket-pieces $a a^1$, in combination with the base-plate A , substantially as and for the purpose described.

3. The lift-rods C , provided with the threaded tubular ends, in combination with the nuts d , adjustable extension-rods f , and handles F , substantially as and for the purpose set forth.

4. In a health-lift, the three registers $m n n$, (those at the sides indicating which is the stronger side of the person lifting,) in combination with the adjustable lifting-handles, substantially in the manner and for the purpose set forth.

5. The combination of the lifting-rods with the index m , the cord or cords g , sliding rack-bar J , and pinion L , all arranged to operate substantially as described.

6. The combination of the rack-bar J , pinion L , index m , spring k' , and cord g , substantially as and for the purpose described.

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Witnesses:

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