

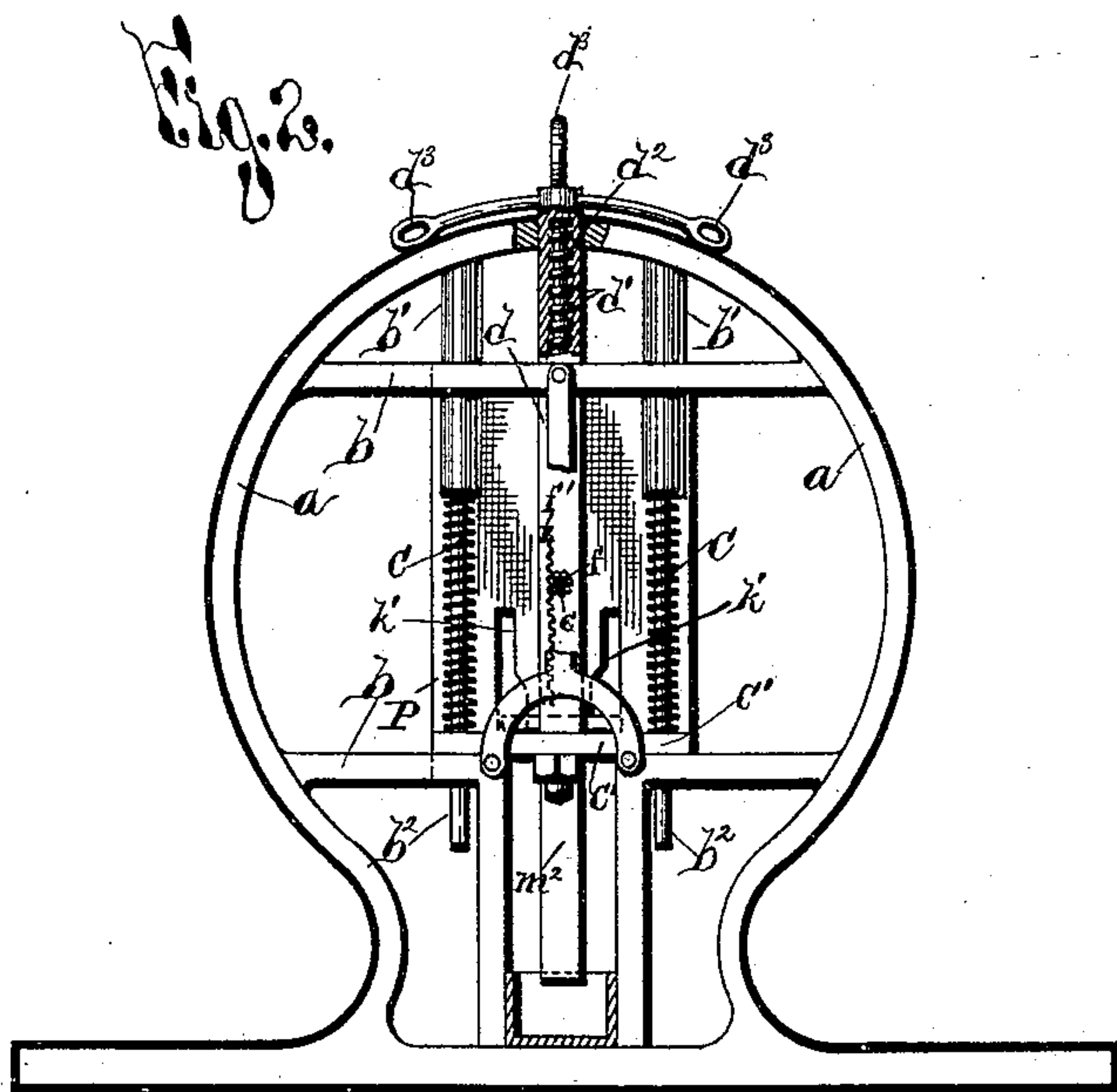
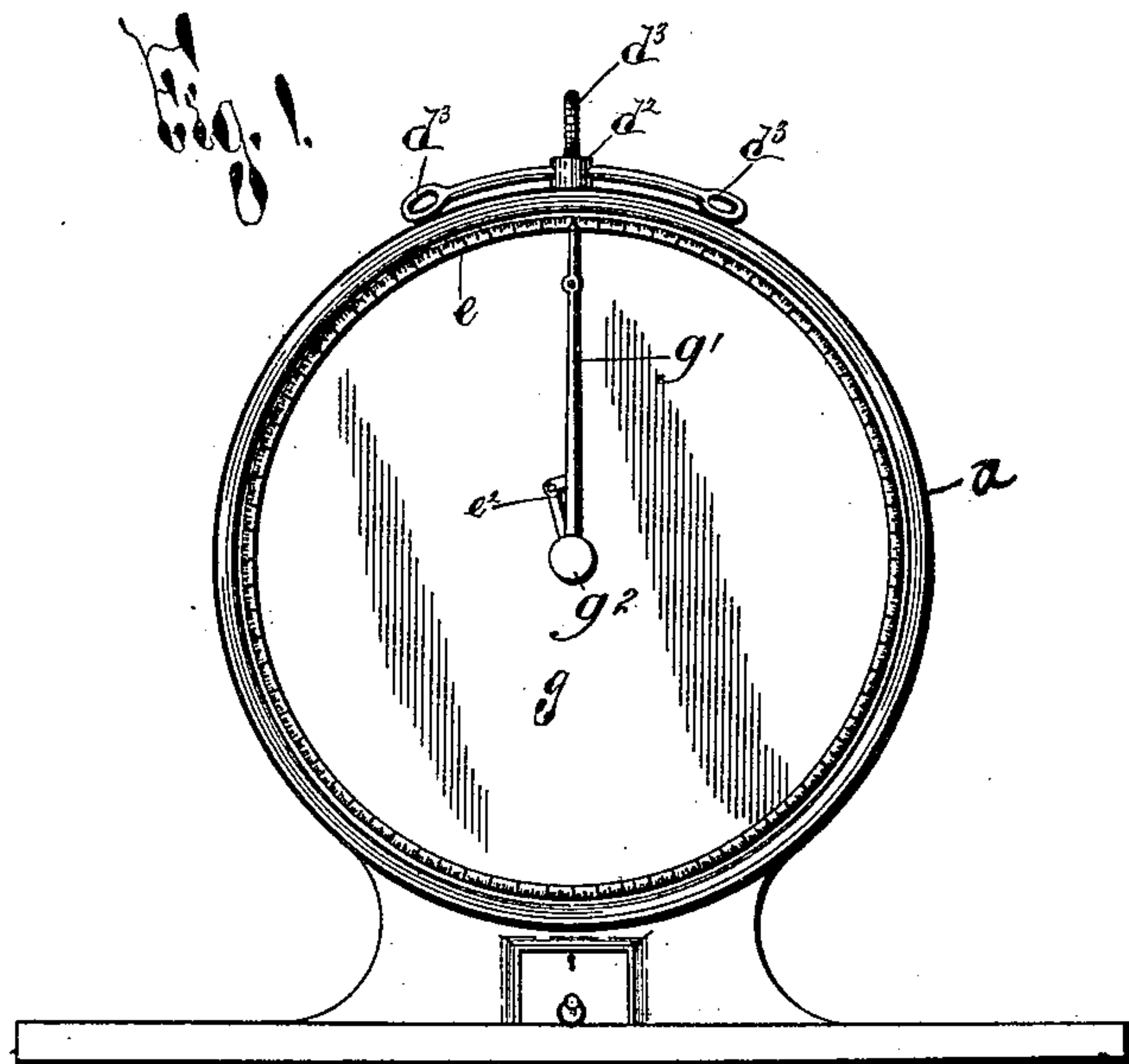
(No Model.)

3 Sheets—Sheet 1.

B. FÜCHTER.  
COIN CONTROLLED LIFTING MACHINE.

No. 397,229.

Patented Feb. 5, 1889.



Witnesses,

A. C. Parsons  
H. C. McArthur

Inventor,

Bernhard Fuchter

By his Attorneys Hey & Libbe.

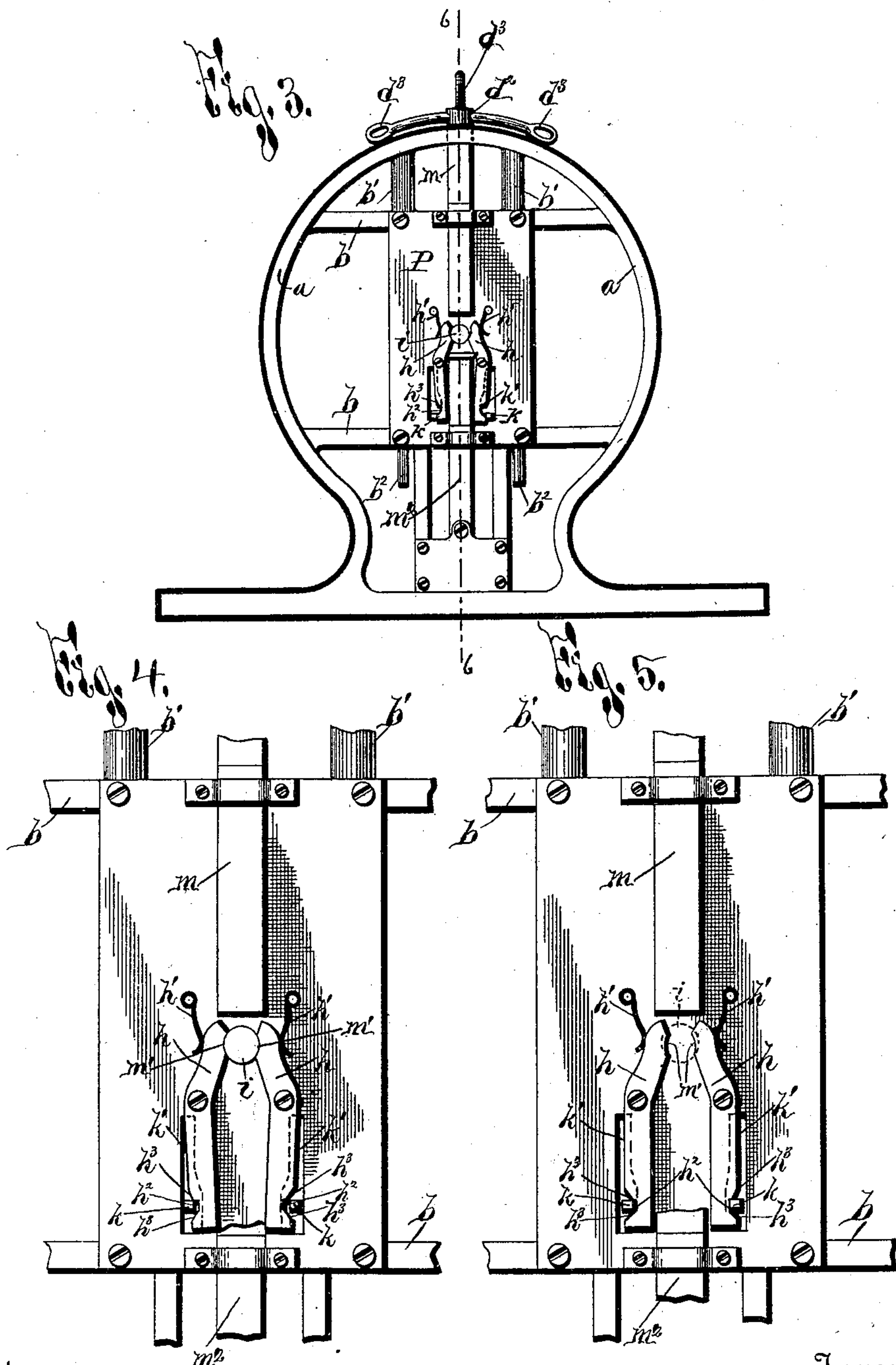
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Witnesses,  
*H. C. Parsonet.*  
*H. C. McArthur*

Inventor,  
*Bernhard Fuchter*  
By his Attorney *Hey & Silber*

(No Model.)

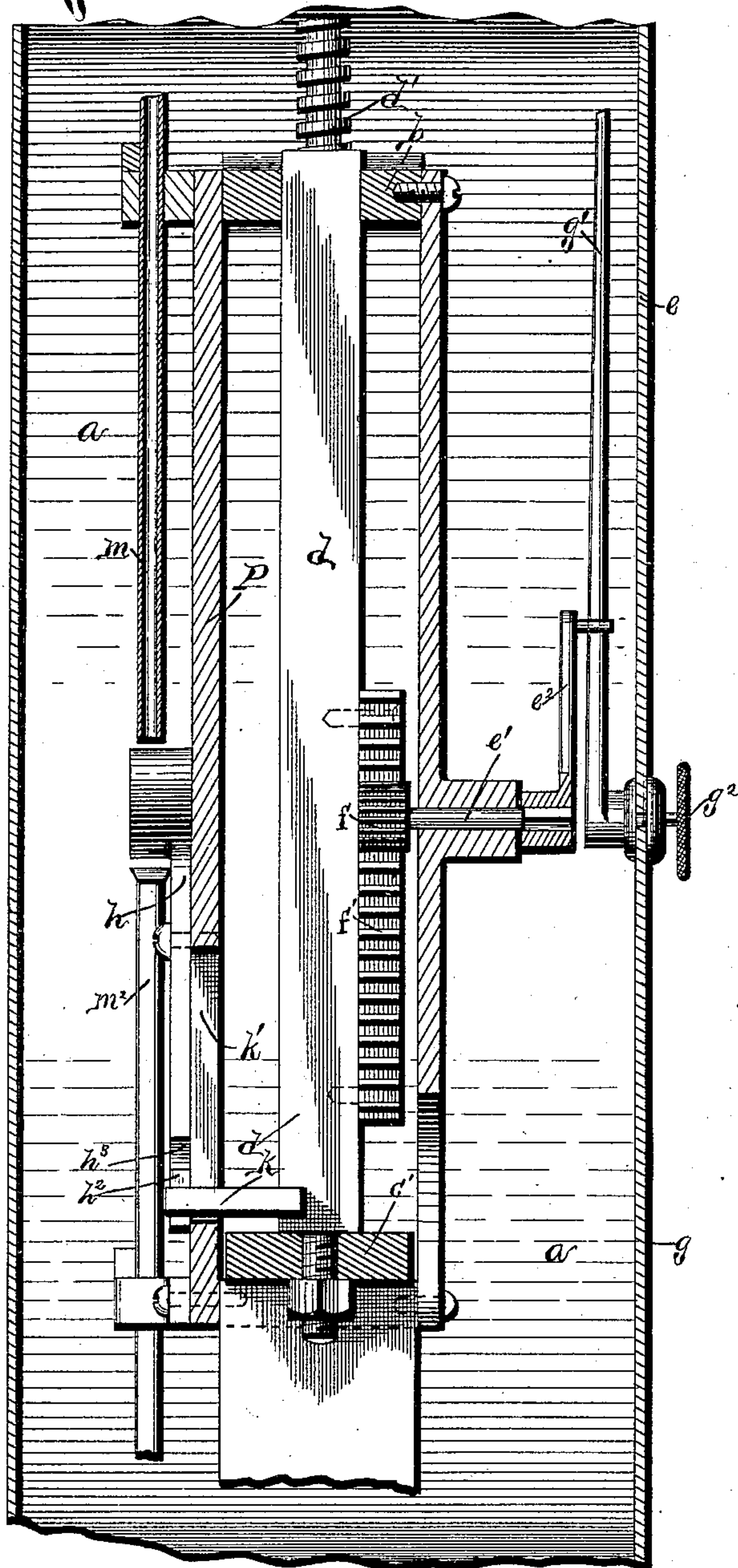
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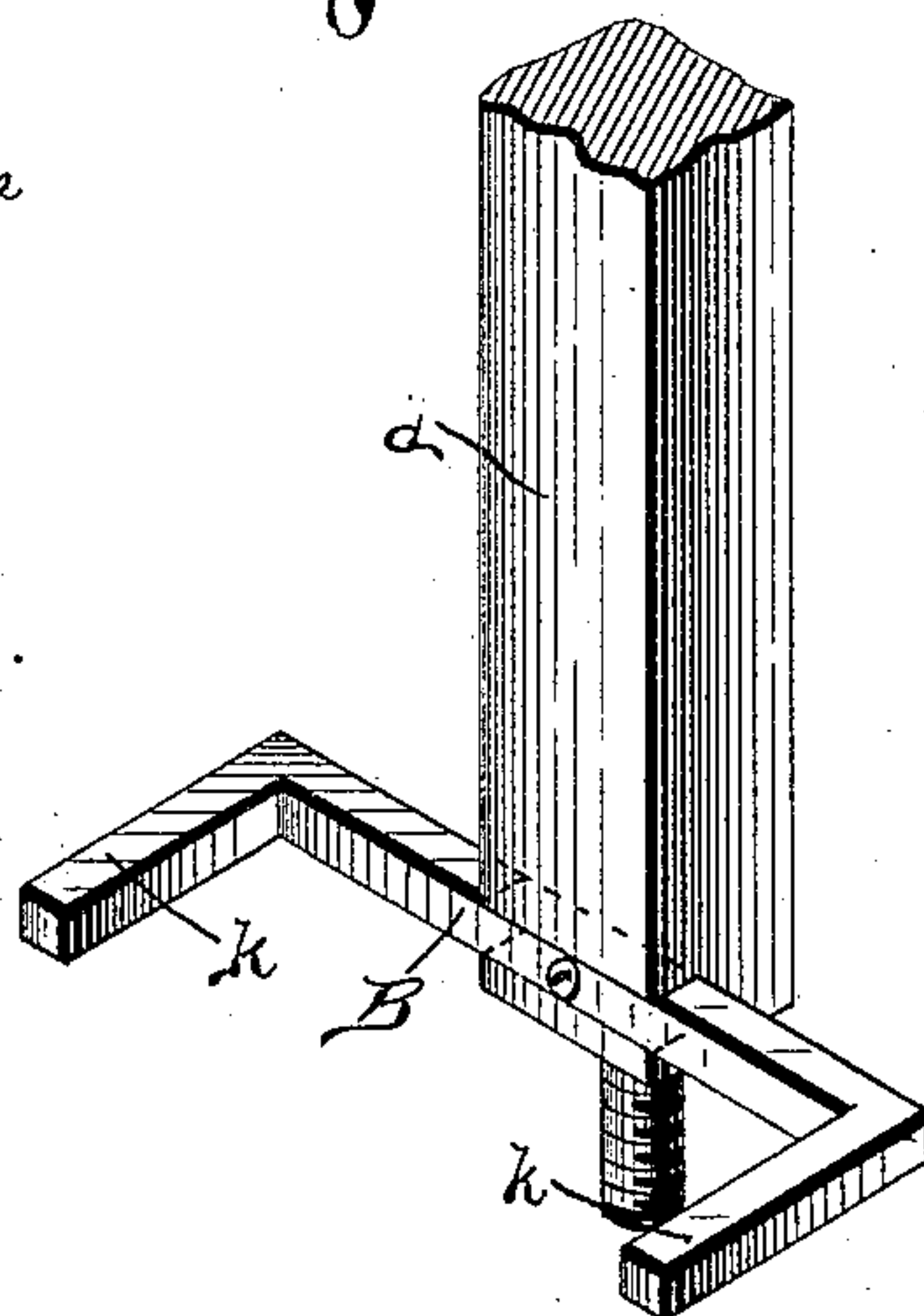
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*Fig. 6.*



*Fig. 7.*



WITNESSES:

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INVENTOR

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BY

*Hey & Gibbs*  
ATTORNEYS.



# UNITED STATES PATENT OFFICE.

BERNHARD FÜCHTER, OF SYRACUSE, NEW YORK, ASSIGNOR TO JOHN LIGHTON, OF SAME PLACE.

## COIN-CONTROLLED LIFTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 397,229, dated February 5, 1889.

Application filed March 22, 1888. Serial No. 268,157. (No model.)

*To all whom it may concern:*

Be it known that I, BERNHARD FÜCHTER, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and  
5 useful Improvements in Lifting-Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to an improvement  
10 in lifting-machines; and it consists in certain peculiarities of the construction and arrangement of the same, substantially as will be hereinafter more fully set forth and claimed.

In order to enable others skilled in the art  
15 to which my invention pertains to make and use the same, I will now proceed to describe its construction and operation, referring to the accompanying drawings, in which—

Figure 1 is a front elevation of my device.  
20 Fig. 2 is a vertical transverse section of the machine, taken behind the dial-plate and showing the mechanism for operating the hands. Fig. 3 is a rear view with the back plate or cover of the casing removed to show  
25 the locking-dogs and the coin-chutes. Fig. 4 is an enlarged view of the locking-dogs, showing a coin in position between their ends and the dogs in the act of releasing the lifting-slide. Fig. 5 is a similar view with the coin  
30 shown in dotted lines and with the dogs in their locking position. Fig. 6 is an enlarged vertical section taken on line 6 6 of Fig. 3, and Fig. 7 is an enlarged detached isometric view of the lifting-bar provided with studs  
35 which engage in notches on the locking-dogs.

*a* represents a main frame, cast or formed of any suitable material, and covered by a casing of any material, preferably of sheet  
40 metal, and made in any ornamental form to render the machine attractive, as will be clearly understood without further description herein. The frame *a* has formed across its inside a pair of cross-bars, *b*, and a pair of tubes, *b'*, secured to the top of the frame, are  
45 passed through the upper cross-bar, as clearly seen in Fig. 2, to act as guides and sockets for a pair of vertically-sliding rods *b<sup>2</sup>*, which slide in these guide-tubes, and through the lower cross-bar, as clearly shown. Upon the  
50 sliding rods I place the tension-springs *C*, against which the operator exerts his strength, these springs having one end connected to

the sliding rods and the other bearing against the lower ends of the guide-tubes and acting always against the upward movement of the  
55 rods.

To a bar, *C'*, connecting the rods *b<sup>2</sup>* near their lower ends, I secure a lifting-bar, *d*, also sliding through the center of the upper cross-bar, *b*, of the frame, and having its upper end  
60 formed with a screw, *d'*, upon which is screwed the hollow extension *d<sup>2</sup>*, passed out through the top of the machine, and provided or formed with three hand-holds, *d<sup>3</sup>*—a central one and one upon each side—in order that the  
65 test of lifting-power may be made with either one or both hands without twisting or binding the sliding parts by friction. The object of connecting the lifting-bar and its handle-extension by screw-threads is to render the  
70 handle readily adjustable as to height, and so permit persons of different sizes to start the lift-test fairly, and from a point that does not prevent their proper exertion of such power as they may possess.  
75

The face of the machine is provided with a dial-plate, *e*, having a scale-ring marked around it to indicate the number of pounds that are lifted, and a small spindle, *e'*, passed through the diametric center of the dial, is  
80 provided on its outer end with a short arm, *e<sup>2</sup>*, having its end bent over or hooked, for a purpose presently made plain. Upon the inner end of the spindle *e'* is a small spur-pinion, *f*, which is engaged and operated by a rack-  
85 bar, *f'*, on the lifting-bar, to move the spindle and its bent arm in exact accordance with the movement of the lifting-bar, when the power is applied.

Upon the outside the dial-plate is protected  
90 by a glass plate, *g*, in the center of which is pivoted an indicator-hand, *g'*, which is engaged and moved around the dial by the bent arm *e<sup>2</sup>* on the spindle *e'* and marks the amount lifted upon the dial. As the arm *e<sup>2</sup>* and indi-  
95 cator-hand *g'* are not connected, but one only pushes the other around, it will be seen that when the lifting strain is released and the sliding parts and the arm *e<sup>2</sup>* return to their normal position the indicator-hand is left to  
100 mark the amount lifted, till it is turned back by means of a button, *g<sup>2</sup>*, upon the outside of the glass, and which is connected with the hand for that purpose.



This machine belongs to the class that are placed in public places, and which are normally locked against any movement, but which are unlocked for a single operation by the insertion of some stated coin, and for this reason a lock must be provided to prevent operation of the machine except when the predetermined coin is inserted. I construct this as follows:

Upon a plate, P, secured to the cross-bars  $b$  of the main frame in the rear part of the machine, are pivoted a pair of dogs,  $h$ , provided with springs  $h'$ , acting to press their upper ends together, as clearly seen in Figs. 4 and 5. The lower ends of these spring-dogs are formed on their outer edges, with the notches  $h^2$ , having the inclines  $h^3$  extending each way therefrom, and a pair of studs,  $k$ , secured on the sliding lifting-bar and projecting through slots  $k'$  in the plate P, are engaged by these notches to lock the machine against any lifting movement. The studs  $k$ , as best shown in Figs. 6 and 7, are preferably formed or secured on a yoke-shaped cross-bar, B, at right angles thereto, and of such a length that when the cross-bar B is attached to the side of the lifting-bars  $d$  the studs  $k$  will project through slots  $k'$  in the plate P, Fig. 6, and normally engage with the dogs  $h$  at a point on the lower inclines,  $h^3$ , when the draw-bar  $d$  is in the position shown in Fig. 3.

A coin-chute,  $m$ , is provided passing down through the top of the machine and terminating just above the spring locking-dogs, and the inner edges of these dogs, near their upper ends, are cut out, as at  $m'$ , to fit the periphery of any particular coin  $i$  that may be selected as the price of one operation of the machine. Just below this point a second chute,  $m^2$ , receives the coin when it is released by the dogs and conducts it down to a suitable box or receiver below or in the base of the machine, and from which all the money collected is removed at pleasure by the owner of the machine. The coin  $i$  slides down the chute  $m$  and lodges in the cut-out  $m'$  at the upper extremity of the dogs  $h$ , and as the lifting-bar is raised the springs  $h'$  are unable to rock the dogs  $h$  on their pivots a sufficient distance to force out their lower extremities, owing to the obstruction caused by the coin to their movement; hence the notches  $h^2$  do not engage with the studs  $k$ , and thus prevent the upward movement of the lifting-bar. On the contrary, if no coin has been inserted there is nothing to obstruct the movement of the upper ends of the dogs  $h$ , and consequently when the bar  $d$  begins to rise the studs fastened thereto on the cross-bar B ride up the lower incline of the notches  $h^2$  and the springs  $h'$  rock the dogs inward on their pivots, thus carrying the notches  $h^2$  outward sufficiently to engage the studs  $k$  and prevent the farther movement of the lifting-bar.

It will be noted that when the draw-bar  $d$  is entirely down to its normal position, as shown in Fig. 3, the studs  $k$  bear against the

lower inclines of the spring locking-dogs and press the ends of these dogs toward each other, against the pressure of the springs  $h'$ , which bear on the opposite ends of the dogs  $h$ , far enough to open the opposite end to receive the coin in the cut-out  $m'$ , and should the handles  $d^3$  be pulled without payment, as the lugs  $k$  are drawn up, thereby allowing the spring  $h'$  to act, the notched dogs at once engage the studs  $k$  and lock the machine against farther movement; but if a proper coin is first dropped into the chute it falls into the cut-out  $m'$  between the upper jaws of the dogs, thereby locking the dogs against the action of the springs  $h'$ , and then when power is applied the studs  $k$  are drawn by the bar  $d$  above the locking-notches and strike the upper inclines, thus forcing the lower ends of the dogs together, releasing the coin to fall into its receiver, and leaving the operator free to pull the lift-bar out as far as his strength will permit, the full amount in pounds being registered by the indicator-hand on the graduated dial, as previously explained. The operation of the whole device will now be clearly understood and its simplicity and economy of construction appreciated.

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

1. In a test-lift machine, the combination, with the lifting-bar provided with locking-studs and a coin-chute, of a pair of spring-actuated locking-dogs pivoted below the end of the coin-chute and provided in their upper ends with a curved seat for the coin, and having their lower ends notched and formed with inclines both above and below the notches, substantially as and for the purpose set forth.

2. In a test-lifting machine, the combination, with the lift-bar and its springs, the bar being formed with locking-studs and provided with a rack-bar, and an adjustable handhold, the indicator-hand, the graduated dial-plate, and the connecting-spindle between the indicator-hand and the lift-bar provided with a pinion and a bent arm, of a coin-chute for delivering the coin to the locking-dogs, a pair of spring-actuated locking-dogs engaging the lift-bar at one end and formed to receive the coin in their other end, and a second coin-chute for delivering the coin to the receiver, all constructed and arranged to operate substantially as and for the purpose set forth.

In testimony whereof I have hereunto signed my name, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 13th day of March, 1888.

BERNHARD FÜCHTER.

Witnesses:

FREDERICK H. GIBBS,  
W. C. MCARTHUR.