

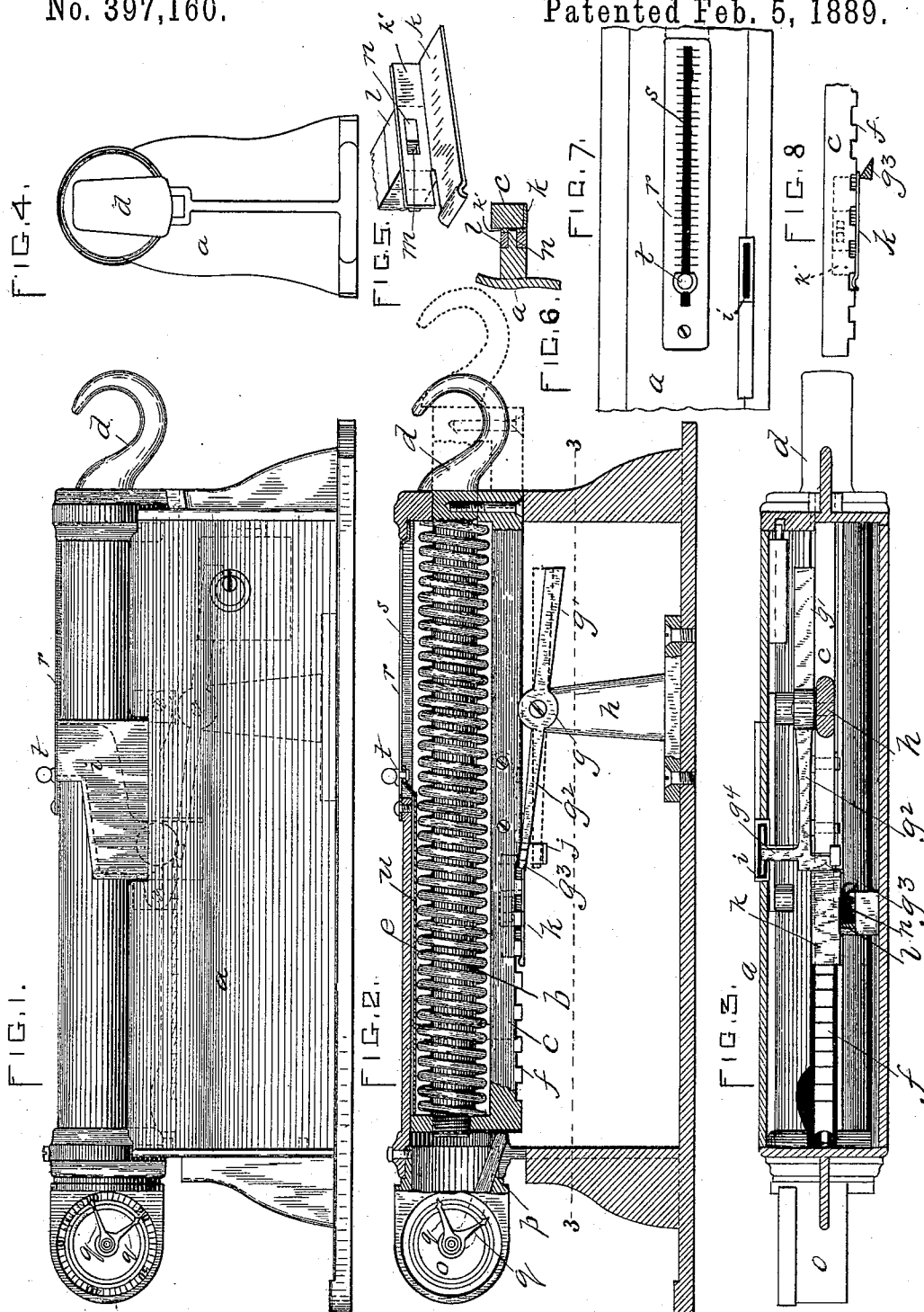
(No Model.)

F. R. WHITE.

COIN CONTROLLED FINGER PULL.

No. 397,160.

Patented Feb. 5, 1889.



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FREDERICK R. WHITE, OF BOSTON, MASSACHUSETTS.

COIN-CONTROLLED FINGER-PULL.

SPECIFICATION forming part of Letters Patent No. 397,160, dated February 5, 1889.

Application filed July 14, 1888. Serial No. 279,987. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK R. WHITE, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Coin-Controlled Finger-Pulls, of which the following is a specification.

My invention relates to dynamometers generally, and particularly to coin-controlled finger-pulls, so called, which are contrivances designed to test or measure the strength of or power of pulling by a finger of the hand, and which are constructed so that in their normal position the pull will be locked against operation, but in which the locking means may be moved or controlled by a coin to release the pull and permit a single operation of the same.

It is the object of my invention to provide improvements in the means for locking the device when in its normal position against operation, and releasing the pull from the locking devices by means of a coin, so as to permit the pull to be operated once, and not oftener, by the use of a single coin, which improved means shall be simple in construction and certain of operation.

It is also the object of my invention to provide such improvements in finger-pulls as will enable a register to be attached thereto, the construction and arrangement of the pull with respect to the register being such as that upon each operation of the former the latter will also be operated and register or indicate the number of such operations.

In order that a full and clear understanding may be had of my invention, I will proceed to describe the same, having reference to the accompanying drawings, forming a part of this specification, of which—

Figure 1 is a side elevation of my improved finger-pull complete. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a horizontal sectional view of the same, taken on the line 3-3 of Fig. 2, looking upward. Fig. 4 is a front end view. Figs. 5, 6, and 8 are detail views hereinafter particularly referred to. Fig. 7 is a top plan view of a portion of the device.

The same letters of reference designate the

same parts or features, as the case may be, in all of the views.

In carrying out my invention I construct a casing, *a*, of suitable form and strength, and form therein bearings for the rod *b* and its attached rack-bar *c*, so that said rod and rack-bar may be moved longitudinally in their bearings and be drawn out of the casing by taking hold of and pulling outward on the finger-hook *d*, provided on the forward end of rod *b* and extending beyond the forward end of the casing, as shown. *e* designates a strong spring surrounding rod *b*, and bearing at its rear end against a projection or offset, or the like, at the rear end of the rod and against the casing at the forward end, so as to offer resistance to the pulling out of the rod.

The bar *c* is provided on its under side with ratchet-teeth *f*, with which the rearward end of a pawl arm or lever, *g*, engages when said lever is in its normal position. The pawl-lever *g* is pivoted or fulcrumed on a standard, *h*, in the machine, though it might as well be fulcrumed on the casing, and its forward arm, *g'*, is slightly heavier or of greater specific gravity than the rearward arm, *g''*, so that, as has already been stated, the pawl *g''* on the end of the arm *g''* will be normally held in engagement with the ratchet-teeth *f*. The free end of the arm *g''* is provided with a finger, *g'''*, which extends laterally under the discharge end of a coin-chute, *i*, which chute is constructed and arranged to guide a coin (say a cent) inserted therein into position on the laterally-extending finger *g'''*, and so overcome the weight of the forward arm, *g'*, of the pawl-lever *g* and disengage the pawl *g''* from the teeth of the rack-bar *c* and permit the rod *b* to be pulled out, as indicated by dotted lines in Fig. 2; but in order to prevent the coin from fully leaving the chute *i* and falling off from the laterally-projecting finger *g'''*, so that the pawl *g''* would immediately become re-engaged with the ratchet-teeth of the bar *c*, I provide a stop, *j*, which may extend down from the rack-bar *c* and laterally under the pawl *g''*, so that while the pawl may be carried down by the coin far enough to disengage it from the teeth or notches in said bar, as indicated by

dotted lines in Fig. 2, it will be prevented by the stop *j* from being carried down so far as to allow the coin's leaving the chute and falling off from the laterally-projecting finger *g*¹, as will be understood without further description.

The description thus far given, it will be seen, tends only to show how, when the parts are in their normal position, the rod *b* will be locked against the pulling out of the same, and how, by the use of a coin, the rod may be released from the locking, so that it can be pulled out. In addition to these things, however, my invention includes means whereby when the rod *b* is released from the locking means and drawn out to any appreciable extent, and then allowed to recede to the same extent, it cannot be farther drawn out without again dropping a coin into the chute *i* to operate on the pawl *g*³, as before explained. These means will next be described.

k designates a friction plate or clip extending for a short distance beneath and along the rear side of the rack-bar *c*, the forward end of the portion of the clip beneath the bar reaching up close to the pawl *g*³, as seen in Figs. 2 and 3, so that if said pawl should be depressed and the friction-clip *k* should be moved forward a slight distance it would be brought under said pawl, and so prevent the latter from engaging with the teeth of the rack-bar *c*, as is clearly shown in the detail view, Fig. 8. The friction-clip *k* is provided on its rear side with an angular part, *k'*, adapted to extend up along the side of the rack-bar *c*, as shown by dotted lines in Fig. 8, which angular part *k'* is provided with a block, *l*, in which is formed a short slot, *m*, through which projects a pin, *n*, connected with the frame or casing *a* of the device, so that said friction-clip may have a limited movement on the bar *c*. The block *l* may be made integral with the clip *k*, or be secured thereto in any suitable manner. The rearward end of the portion of the friction-clip *k* under the bar *c* is preferably bent, so as to be frictionally engaged by the rack-teeth of the rack-bar, and be moved thereby to the extent permitted by the slot *m*.

If, now, a coin—say a cent—should be dropped into the chute *i* and the pawl *g*³ disengaged from the teeth of the rack-bar, as before described, the operator may take hold of the hook *d*, and by pulling outward thereon draw said rod out against the tension of the spring *e*. In so moving the rod to an appreciable extent the friction-clip *k* will be carried forward under the end of the pawl *g*³, so that, even though the stop *j* be also drawn forward and from under said pawl so as to permit the coin to fall from the chute and off from the finger *g*¹, and the pawl to move upward toward its normal position, said pawl will not engage the teeth of the rack-bar *c*, but will be prevented from so doing by the friction-clip *k*, as seen in Fig. 8,

until said rack-bar is allowed to recede to an extent sufficient to carry the friction-clip back far enough to move its forward end from under the pawl, which distance need be but slight, and will be limited by the slot *m* and the pin *n*.

As a means of indicating the number of times that the device may have been operated, I attach a registering mechanism, *o*, to the rear end of the device, which registering mechanism may be of any ordinary or suitable construction which is capable of being operated one degree for each movement or vibration of the operating-lever *p*. I have not shown the construction of the registering mechanism in detail, for the reason that, *per se*, it constitutes no part of my present invention, and may be of well-known organization. The forward end of the lever *p* is arranged to come in contact with the rear end of the bar *c*, or it may be of the rod *b*, as the same are moved rearwardly, and so be operated to move the indicating-fingers *q* of the registering mechanism one degree, as before stated, thus indicating the number of times that the device has been operated.

A graduated scale, *r*, is arranged on the casing or frame *a* at the sides of a slot, *s*, formed in said casing, and an indicating-slide, *t*, constructed and arranged to be moved by the rod *b* or its adjuncts, as the same may be pulled out or drawn forward, operates in said slot and on said graduated scale to indicate or mark the extent to which the rod had been drawn out. In the present instance I have shown a strip, *u*, connected with the indicating-slide and extending back, with its rear end resting or bearing against the same part as the rear end of the spring *e*, so that as the bar is drawn forward the indicating-slide will be moved in the same direction.

Though I have been particular to describe the form and arrangement of the various parts of my improved finger-pull, it is obvious that these may be varied within the limits of mechanical skill without departing from the nature or spirit of the invention.

Having thus explained the nature of my invention, I would have it understood that what I claim is—

1. A finger-pull consisting of a frame or casing, a rod having bearings and longitudinally movable in said casing, said rod being provided with a finger-hook or similar device extending beyond the casing, whereby said rod may be drawn outward, a spring to resist the drawing outward of said rod, a bar provided with ratchet-teeth connected with said rod, a pawl to engage the ratchet-teeth of said bar, a coin-chute to guide a coin into position on said pawl to disengage it from said ratchet-teeth, and a friction-clip having a limited movement on said ratchet-bar between said pawl and the teeth on said bar, as set forth.

2. The combination, in a finger-pull, of the

longitudinally-movable rod and its rack-bar, with the friction-clip *k*, having a limited movement on said bar, a pawl to engage and be disengaged from said rack-bar, and a
5 coin-chute to guide a coin into position on said pawl, substantially as hereinbefore set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 2d day of July, 1888.

FREDERICK R. WHITE.

Witnesses:

B. S. PRICE,

C. F. BROWN.