

(No Model.)

A. F. MARTEL.

COIN CONTROLLED HAND POWER TESTER.

No. 386,206.

Patented July 17, 1888.

Fig. 2.

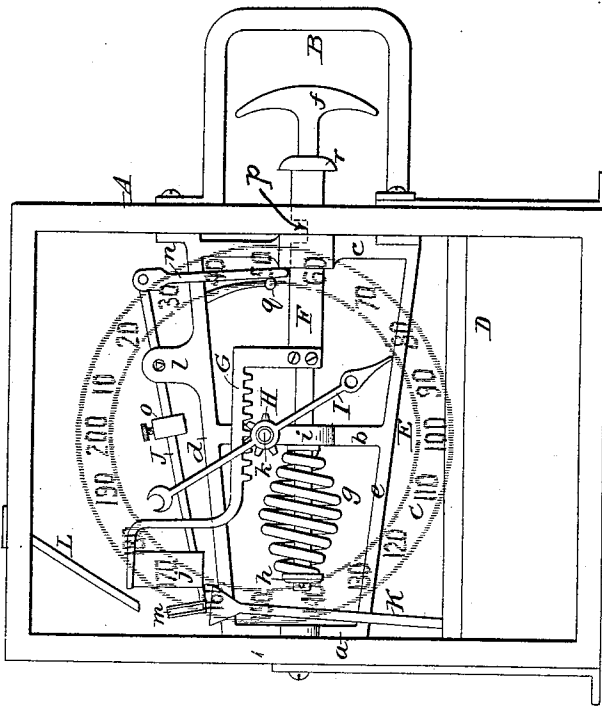


Fig. 3.

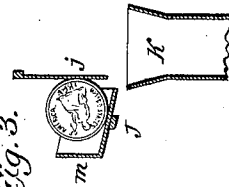
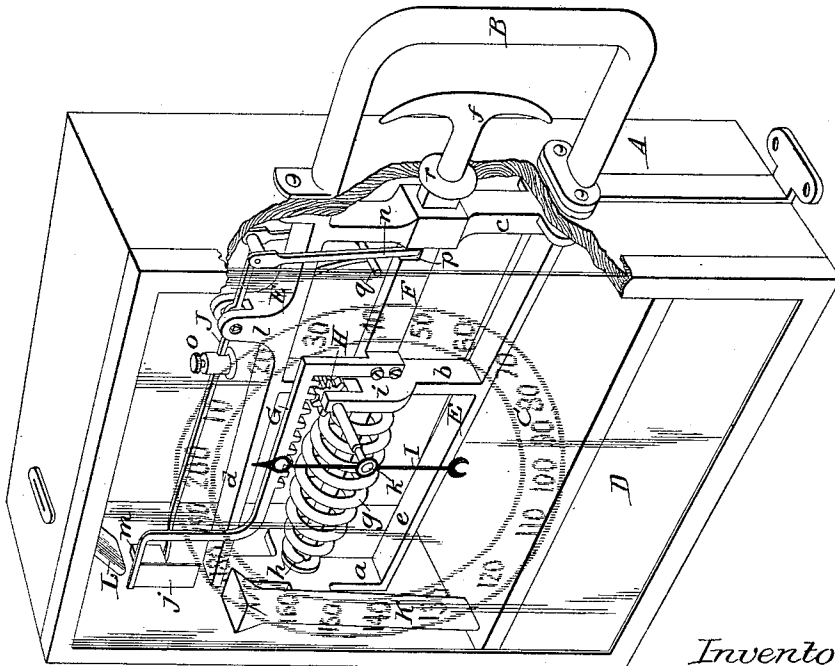


Fig. 1.



Witnesses:

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Inventor:

Adelard F. Martel,
by Rodger Luss,
his Atty.

UNITED STATES PATENT OFFICE.

ADELARD FRANCIS MARTEL, OF MONTREAL, CANADA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE HAND POWER TEST MACHINE COMPANY, OF NEW JERSEY.

COIN-CONTROLLED HAND-POWER TESTER.

SPECIFICATION forming part of Letters Patent No. 386,206, dated July 17, 1888.

Original application filed May 8, 1886, Serial No. 201,595. Divided and this application filed April 9, 1888. Serial No. 270,020. (No model.) Patented in Canada May 27, 1886, No. 21,161.

To all whom it may concern:

Be it known that I, ADELARD FRANCIS MARTEL, of Montreal, in the county of Hochelega and Dominion of Canada, have invented certain new and useful Improvements in Coin-Controlled Hand-Power Testers, of which the following is a specification, and for which I have received Letters Patent of the Dominion of Canada, No. 24,161, dated May 27, 1886.

My invention relates to a machine for testing the muscular strength of the hand and arm; and it consists in a novel construction and operation of the same, as hereinafter fully described and claimed.

In the drawings, Figure 1 is a perspective view of my improved tester; Fig. 2, a face view; Fig. 3, a detail view.

A indicates a box or framing, and B a handle rigidly secured to one of the outer faces thereof. The box A is further provided on one face with a glass dial, C, and on its interior with a receptacle or drawer, D, which opens on the rear of the box.

E represents a skeleton frame secured to the sides of the box and extending across the same, as shown in Figs. 1 and 2, the frame comprising three vertical bars, *a b c*, and two substantially horizontal bars, *d* and *e*.

Projecting out through the side of the box and passing loosely through the bars *b* and *c* is a rod or bar, F, which at its outer end is fashioned into a handle, *f*, which is preferably in the same vertical plane with handle B. Where the rod F passes through the bar or support *b* it is preferably made cylindrical, and beyond said support *b* the rod is encircled by a strong spiral spring, *g*, the latter being prevented from escaping from the rod F by means of a collar, *h*, rigidly secured to the rod, as shown in Figs. 2 and 3. It will thus be seen that the spring *g*, bearing at one end against the bar or support *b* and at the other end against the collar *h*, serves to hold the bar or rod F in the box, and in order to draw said bar or rod out the force of the spring must be overcome.

To one side of the rod F, in advance of the bar *b*, is secured a rack-bar, G, which engages with a pinion, H, journaled in a bracket, *i*,

formed upon the frame E. The rack-bar extends beyond the pinion H parallel with the rod F, and has its end turned upward and provided with a plate or guard, *j*, for a purpose presently explained.

The pinion H is rigidly secured to a shaft, *k*, which latter is extended outward toward the dial-plate C and provided with a finger or pointer, I, the shaft *k* being opposite the center of the dial. Now, of course, as the rod or bar F is pulled out of the box and the spring *g* thereby compressed, the rack-bar G, which is rigidly secured to the rod or bar, will move with the latter and turn or rotate the pinion H and the pointer I. The pointer I in thus turning with its shaft will move over the dial C, and thus the force exerted will be indicated by the finger on the dial.

In order to prevent the device from being operated without compensation, I provide a catch or retaining device which is released by the deposit of a coin of a predetermined weight or value.

J indicates a beam or lever pivoted between its ends in lugs *l*, formed upon the frame E, and carrying at one end a small box or receptacle, *m*, and at its other end a pendent dog or bar, *n*, as shown in Figs. 1, 2, and 3. The lever J is further provided with a weight, *o*, which is adjustable upon the lever in order to balance the same and vary the action thereof. The dog or bar *n* is made in the form of a yoke to give the necessary weight, and engages in a notch, *p*, in the sliding bar or rod F, as shown. When the dog *n* is in the notch *p*, as shown in Fig. 1, it will be seen that it is impossible to pull the rod F outward, as the dog rests against the upright *c* on one side and against one of the upright walls of the notch *p* on the other side. When, however, a coin is dropped into the box or receptacle *m*, the weight of the former causes the longer arm of the lever J to descend, and thereby raise the dog *n* out of the notch and allow the rod F to be pulled outward.

By adjusting the weight *o* upon the lever J the latter may be adjusted so as to tip and release the rod F when a five-cent piece is

dropped into the receptacle *m*, or so that it will be necessary to insert a quarter or half dollar piece, or any other coin, as may be desired. As the lever *J*, with its receptacle or box *m* and the contained coin, descends, it moves closely to the guard *j*, and when the lower edge of said guard *j* is reached the coin rolls out through the side of the box *m*, below the lower edge of the guard, and into a funnel-shaped tube, *K*, which communicates at its lower end with the drawer *D*, the guard preventing the escape of the coin until the lever *J* reaches its proper position.

To insure the proper insertion of the coin, I employ a feeding-tube, *L*, which is open on the exterior of the box *A* and terminates at its inner end directly over the box or receptacle *m*.

In order to cause the dog *n*, which is pivoted at its upper end to the lever *J*, to rise and fall in a straight line, I provide the framing *E* with arm or finger *g*, which may bear against one face of the dog and prevent its swinging out of line.

It is obvious that a flat coiled spring may be substituted for the spiral spring shown, or that a system of levers and weights may be substituted for the spring, these being the mechanical equivalents of one another.

In using the device for testing the strength of the hand, the handle *B* is grasped in the palm of the hand and the fingers are passed around the handle of the rod *F*. In order to limit the inward movement of the rod *F*, the latter is provided with a stop or collar, *r*, which strikes against the outer face of the box and limits the movement of the bar.

I make no broad claim in this application to the combination of a registering device, a handle to be grasped by the hand, a locking device to prevent the actuation of the registering device, and a coin-receiver arranged so that when a coin is placed within the receiver the catch will be released and the device permitted to be operated, as this is embraced in an application filed by me on the 8th day of May, 1886, Serial No. 201,595, of which this case is a division.

Having thus described my invention, what I claim is—

1. In a hand-power tester, the combination, with a frame, of a stationary handle secured thereto, a rod mounted in the frame and provided with a handle within the stationary handle, and a spring operated by said rod, substantially as shown.

2. In a hand-power tester, the combination, with a frame or box, of a stationary handle secured thereto, a rod mounted in the frame and provided with a handle, a spring secured to and operated by said rod, and a register operated by said rod as the latter is pulled outward, substantially as shown.

3. In a hand-power tester, the combination, with a frame, of a fixed handle secured thereto, a rod mounted in the frame and provided

with a handle, a spring adapted to be operated by said rod, and an automatic locking device arranged, substantially as shown, to prevent said rod from being operated.

4. In a hand-power tester, the combination, with a frame, of a rod mounted therein and provided with a handle, a spring adapted to be operated by said rod, a registering device or index operated through the movement of said rod, substantially as shown, and an automatic locking device arranged to prevent said rod from being operated.

5. In a hand-power tester, the combination of a frame, a fixed handle, and a movable handle; arranged one within the other, the movable handle being provided with a registering device, constructed and arranged to operate substantially as and for the purpose set forth.

6. In a hand-power tester, the combination, with a frame, of a rod, *F*, provided with a spring, *g*, and a notch, *p*, pivoted lever *J*, provided at one end with a coin-receptacle, *m*, and at the other end with a dog, *n*, to engage with the notch, substantially as shown, whereby when a coin is placed in the receptacle the lever is rocked and raises the dog out of the notch and permits the rod to be operated.

7. In combination with box *A*, frame *E*, secured thereto, fixed handle *B*, rod *F*, provided with spring *g*, rack-bar *G*, and handle *f*, pinion *H*, meshing with the rack-bar, finger *I*, and dial-plate *C*, arranged and operating substantially as shown.

8. In combination with box *A*, frame *E*, handle *B*, and rod *F*, constructed and operating substantially as shown, lever *J*, provided with coin-receiver *m* and dog *n*.

9. In a hand-power tester, the combination, with a box, *A*, provided with coin-tube *L*, receiving-tube *K*, and drawer *D*, of a rod, *F*, provided with a spring, *g*, and a notch, *p*, and a pivoted lever, *J*, provided with a coin-receptacle, *m*, and a dog, *n*, all arranged to operate substantially as described, whereby when a coin is placed in the receptacle the lever is rocked to unlock the rod and to discharge the coin into the receiving-tube.

10. In combination with box *A*, having glass dial *C*, receptacle *D*, and fixed handle *B*, frame *E*, rod *F*, mounted in said frame and provided with notch *p*, spring *g*, and rack-bar *G*, shaft *k*, mounted in the frame and provided with pinion *H*, index-finger *I*, and pivoted lever *J*, provided with dog *n* and coin-receptacle *m*, all arranged to operate substantially as shown.

11. In a hand-power tester, the combination, with the reciprocating rod *F* and the pivoted lever *J*, having coin-receptacle *m*, arranged to operate substantially as explained, of the guard *j*, adapted to prevent the escape of coin from the receptacle and operated through the movement of the rod *F*, as described, whereby the guard is retained in place until the tipping of the lever to discharge the coin releases the rod.

12. In a hand-power tester, the combination,

with the rod F, having spring *g* and notch *p*,
of the pivoted lever J, provided with a single
coin-receptacle, *m*, and with a dog to engage
with the notch *p*, and a weight, *o*, adjust-
5 able upon the lever, whereby the coin neces-
sary to release the rod may be varied, as de-
sired.

In witness whereof I hereunto set my hand
in the presence of two witnesses.

ADELARD FRANCIS MARTEL.

Witnesses:

ED. MARTEL,
A. G. MARTEL.