(No Model.)

A. C. MEADY & C. B. BOSWORTH.

COIN OPERATED HAND POWER TESTING MACHINE.

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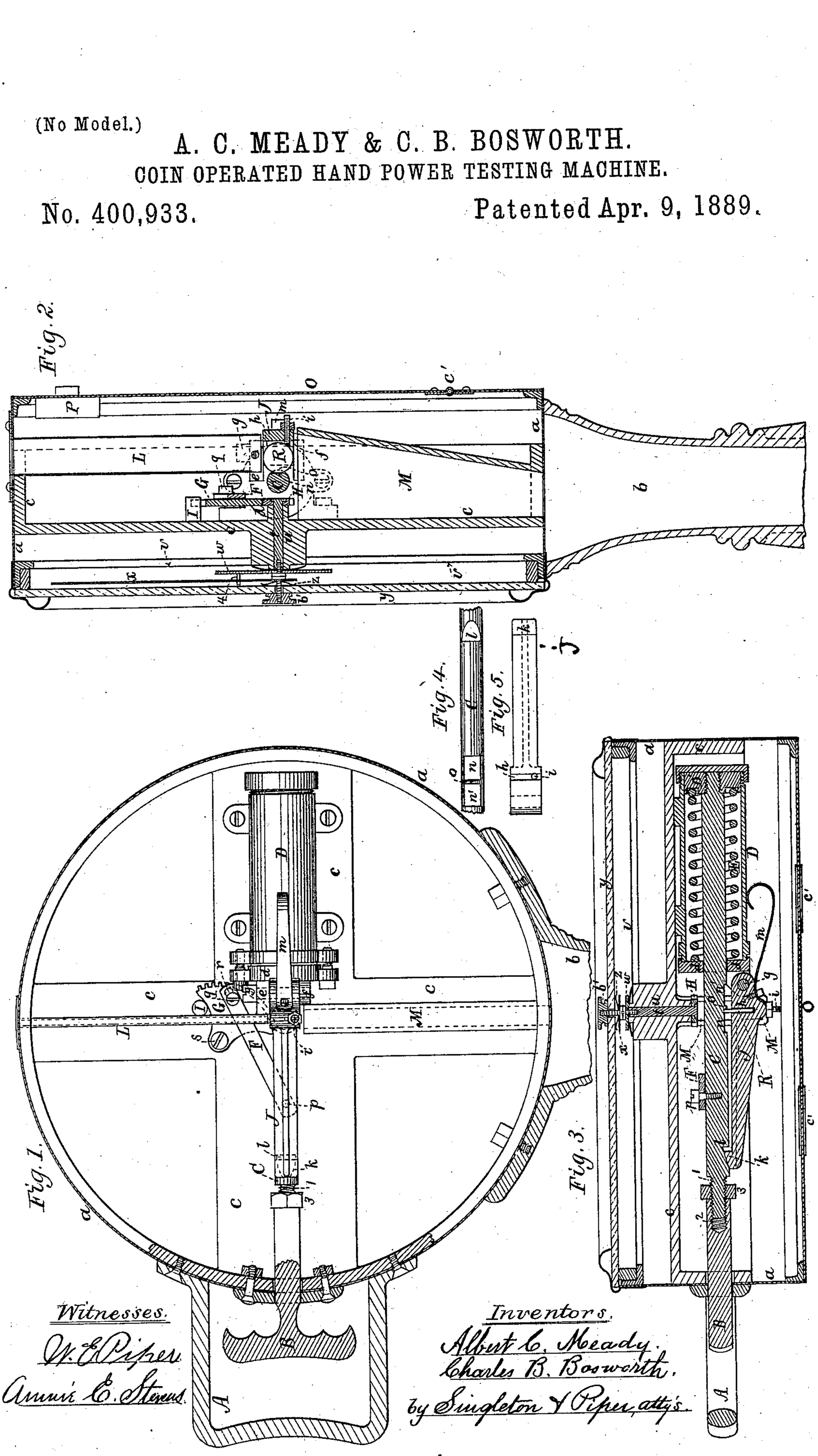

Witnesses.
W. E. Piper.
Annie E. Stevens.

Inventors.
Albert C. Meady.
Charles B. Bosworth.
by Singleton & Piper, atty's.

UNITED STATES PATENT OFFICE.

ALBERT C. MEADY, OF SOMERVILLE, AND CHARLES B. BOSWORTH, OF EVERETT, ASSIGNORS TO THE CROSBY STEAM GAGE AND VALVE COMPANY, OF BOSTON, MASSACHUSETTS.

COIN-OPERATED HAND-POWER-TESTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 400,933, dated April 9, 1889.

Application filed September 19, 1888. Serial No. 285,805. (No model.)

To all whom it may concern:

Be it known that we, ALBERT C. MEADY and CHARLES B. BOSWORTH, citizens of the United States, the former residing at Somerville and the latter at Everett, both in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Coin-Operating Hand-Power-Testing Machines; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

Figure 1 is a sectional rear elevation, Fig. 2 a vertical median and transverse section, and Fig. 3 a horizontal and median section, of a coin-operating hand-power-testing machine provided with our invention. Fig. 4 is a side view of a portion of the piston-rod, and Fig. 5 is an inner side view of the dog.

The nature of our invention is defined in the claims hereinafter presented.

In the drawings the casing of the machine is shown at *a*, it being supported on a standard, *b*, within which is a receptacle (not shown in the drawings) to receive the coin after passing from the chute, into which it falls on its release from the dog. A handle, A, is fixed to the case, within which is arranged a movable handle, B, adapted to slide in the case and adjustably connected to a piston-rod, C, the said rod having a male screw, 1, which screws into a female screw, 2, formed in the shank of the movable handle, a nut, 3, being applied to the male screw to be turned against the end of the shank of the handle B to securely hold the rod in position when properly adjusted. The shank of the handle B may be prismatic or angular, and, owing to its adjustable connection to the rod C, the handle B can be made to stand at a proper distance from the handle A to be conveniently gripped by the hand.

Within the case *a*, and for supporting the operative mechanism therein, is arranged a frame, *c*, as shown, the chute M, into which the coin drops after unlocking the dog, hereinafter described, from the piston or slide rod, forming a part of said frame. D is a cylinder fastened to the frame, and in which the piston-head D′, attached to the rod C, slides when operated by the handle B. A spring, E, encompassing the piston-rod, bears against and between the piston-head D′ and the cylinder-head *d*, as represented, and projecting from the said head *d* are ears *e f*, to which is pivoted so as to swing in a horizontal plane the dog J, the pivot being shown at *g*.

The cylinder D may be dispensed with, and the head *d*, for supporting the rod and furnishing a bearing for the spring, fixed to the frame instead of to the cylinder, the object in using the cylinder being to provide an air-cushion for the piston, to prevent its too sudden bringing up against the end of the cylinder on the release of the handle B from the hand of a person.

The dog J is provided near its pivoted end with a vertical groove, *h*, which extends through it from top to bottom, and is open on the side of it next the piston-rod. Extending from the rear side of the dog and into the groove *h* is an adjusting-screw, *i*, (see Figs. 2, 3, and 5,) which admits of the use of coins of different sizes or values to operate the machine, if desired. The free end of the dog is provided with a tooth, *k*, which enters a notch, *l*, in the piston-rod, and near the pivoted end of the dog a spring, *m*, is fastened to it, the free end of which bears against the cylinder, whereby the tooth of the dog is kept in engagement with the notch *l* in the rod.

The circumference of the piston-rod C in that portion of it near the groove *h* in the dog and on opposite sides of said groove in the direction of the axis of the said piston-rod is reduced, as shown at *n n′*, (see Figs. 3 and 4,) a portion of said circumference remaining between the two reductions, so as to form a rib or abutment, *o*, which is arranged to stand on one side of the said groove—viz., that side nearest the pivot of the dog—so that when a coin, R, is deposited in said groove *h* it will stand between the abutment *o* and the handle B, the side of the coin nearest the

pivot *g* touching or nearly touching the abutment *o* and the edge of it bearing against the face of the reduction *n* of the rod C, and also against the end of the adjusting-screw *i*. (See Fig. 3.)

Pivoted to the piston-rod C at *p*, and connected to a sector, G, at *q*, is a link, F, slotted, as shown at *r*, to admit of movement of the link on the pin *q*. The sector G, pivoted to the frame at *s*, connects with a pinion, H, secured to a short shaft, *t*, supported in a bearing, *u*, in the frame, and extending through the same and the dial *v*. Said shaft has an index-hand, *w*, provided with a pin, 4, fastened near to its upper end, as represented.

An auxiliary hand, *x*, pivoted on a stud arranged in the glass plate *y*, as represented, is borne against by a friction-spring, *z*, supported on said stud between the glass plate and the hand, with sufficient force to hold the said hand at any point on the dial to which it may be moved by the pin 4 of the hand *w*, which pin bears against one edge of the auxiliary hand.

A stud, I, projecting from the frame, serves as a stop for the sector, and when said sector is against it, as shown in Fig. 1, the index-hand stands vertically or points to the zero-mark on the dial. A coin-guiding tube, L, extends from an opening in the top of the case nearly to the top of the dog J, and directly over the groove *h* therein, and said tube is secured at its lower end to the ear *e*.

The operation of the hereinbefore-described machine may be thus described: By inspection of Figs. 2 and 3 it will be perceived that on dropping a coin, R, into the tube L it will bring up against the end of the screw *i* and the face of the reduction *n* in the piston-rod, and the side of the coin next the pivot *g* of the dog will touch or nearly touch the abutment *o*. On moving the piston-rod by means of the handle B, the abutment *o*, bearing against the coin, will thereby swing the dog on its pivot, and as soon as the point of the tooth *k* clears the notch *l* in the rod C the outer end of the slot *r* in the link F, pivoted to the rod, as shown, will bear against the stud *q* of the sector, and, the rod C continuing to move, the sector G will be turned on its pivot, and thus the pinion H on its bearing and the hand *w* moved around on the dial, and its pin 4, bearing against the registering-hand *x*, will carry said hand to the point on the dial indicative of the pressure applied to the handle and rod, at which point it will remain after the return of the rod C and the hand *w* to their original positions until moved back by applying the thumb and forefingers to and turning the button *b'*, secured to the stud supporting the hand *x*, and arranged on the outside of the glass plate, as shown.

It will be observed that the coin R is caused by the abutment *o* to operate the dog, and as soon as the said dog is turned back far enough to let the said abutment pass by the edge of the coin the said coin will be released, and will drop out of the groove *h* and into the chute M, and through the same into the receptacle made in the standard *b* to receive it, and at the instant the coin is released from the abutment the tooth *k* of the dog will be forced by its spring *m* against the rod C and be in readiness to lock into the notch *l* in the rod C on its return to the starting-point.

The casing *a* is provided in its back with a door, O, hinged at *c'*, and having a lock, P, by which it is secured to the case when closed.

Having described our invention, what we claim in a coin-operating hand-power-testing machine is—

1. The combination, with a casing, of a fixed handle, a movable handle supported in the casing within the fixed handle, a rod adjustably connected to the shank of the movable handle and having in it a notch, *l*, reductions *n n'*, an abutment, *o*, and fixed to it a piston, a cylinder secured to the casing to receive the piston, a spring operated by the piston-rod and handle, and an automatic locking device arranged to hold said rod from movement, substantially as shown and set forth.

2. The combination, with a casing provided with a chute, M, and stop I, of a handle fixed thereto, a rod provided with a handle, piston provided with the notch *l*, and the reductions *n n'*, and abutment *o*, a cylinder secured within the casing and provided with heads, a spring arranged within the cylinder and operated by the rod and piston, a dog pivoted in the casing, grooved, and provided with a tooth, *l*, spring *m*, and screw *i*, substantially as shown and set forth.

3. The combination, with a casing, of a handle fixed thereto, a rod mounted therein and provided with a piston and handle, a cylinder to receive said piston, a spring arranged within the cylinder to resist the movement of said piston in a direction toward the center of the case, a link pivoted to the rod and connected to a toothed sector, the said sector, a pinion, H, with which it engages, the arbor *t*, and index *w*, substantially as shown and set forth.

4. The combination, with a casing, of a handle fixed thereto, a rod provided with a handle and piston supported in said casing and in a cylinder secured thereto, the said cylinder, a spring arranged therein, as shown, the link F, pivoted to the rod and connected to the toothed sector G, the said sector, the pinion H, its arbor *t*, and index-hand *w*, provided with the pin 4, the auxiliary hand *x*, its pivot, the friction-spring *z*, glass plate *y*, and button *b'*, substantially as shown and set forth.

5. The combination, with a casing provided with the chute M and stop I, of a handle fixed thereto, a rod provided with a handle and piston having a notch, *l*, and reductions *n n'*, and abutment *o*, and supported in the frame and in a cylinder, the said cylinder, a spring arranged therein for the purpose described, and operated by said rod, a dog grooved, as shown, and provided with a tooth, *k*, adjust-

ing-screw *i*, and spring *m*, and pivoted within the frame, the guide-tube L, the link F, pivoted to the rod, provided with a slot, and connected to a toothed sector, the said sector, the pinion H, with which it engages, the pinion-arbor *t*, index-hand *w*, provided with pin 4, the auxiliary hand, and the mechanism applied to the glass plate for supporting it in position, all arranged with a case, substantially as shown and set forth.

6. The rod C, provided with the notch *l*, reductions *n n'*, and abutment *o*, handle, and piston, in combination with the cylinder and spring arranged therewith, as shown, the grooved dog provided with a tooth, an adjusting-screw, and a spring, and pivoted within the casing, the link F, the toothed sector G, engaging the pinion H, its arbor and hand, the auxiliary hand and mechanism for holding it, the button by which it can be turned back to starting-point, the casing and the handle fixed thereto, the stop I, the chute M, and the guide-tube L, all being arranged within a casing, *a*, substantially as shown and set forth.

7. The dog J, provided with the groove *h*, to receive the coin to unlock the dog, as described, and the tooth *l*, adjusting-screw *i*, and the spring *m*, said dog pivoted within the frame, in combination with the rod C, provided with the notch, reductions, abutment, piston, and handle, the latter adjustably connected to the rod, the cylinder and spring arranged about the rod and piston, essentially as shown, the link F, the toothed sector and the engaging pinion, its arbor and index-hand, and mechanism connected therewith by which it can be moved, the casing *c*, provided with the stop I, chute M, and guide-tube L, all being arranged with the casing and supported in the case, having a handle fixed thereto and to the frame, substantially as shown and set forth.

8. The combination, with a casing provided with a stop, I, of a rod, C, mounted therein and having a notch, *l*, reductions *n n'*, abutment *o*, and a piston, as shown, a cylinder secured to the casing to receive the piston, a spring operated by said rod and piston, a dog pivoted within the casing and provided with a groove, an adjusting-screw, spring, and a tooth to operate with said rod, as described, a link, F, pivoted to the rod and to a sector, the said sector, and the mechanism connected therewith to operate the index and registering hands, and the tube L, all being arranged in a case and to operate with a coin deposited in the dog, substantially as shown and set forth.

9. The combination, with a casing, of a handle fixed thereto, a rod mounted in the casing, movable therein, and provided with a handle, a spring operated by said rod, a link pivoted to the rod and to a toothed sector, the said sector pivoted to the casing, a pinion engaging said sector secured to an arbor supported in the casing, the said arbor, and the mechanism connected thereto for indicating on the dial the pressure applied to the handle and rod, substantially as shown and set forth.

10. The combination of the rod C, mounted in the frame, the spring operated thereby, the toothed sector G, pivoted to the frame, the link F, connecting the rod and sector, the pinion H, engaging the sector, the arbor *t*, and mechanism connected therewith for indicating the pressure applied to the rod, substantially as shown and set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

ALBERT C. MEADY.
CHARLES B. BOSWORTH.

Witnesses:
S. N. PIPER,
C. F. DANIELS.