

(No Model.)

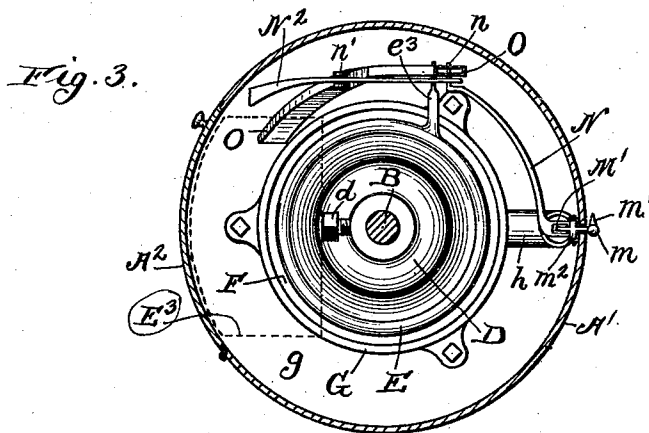
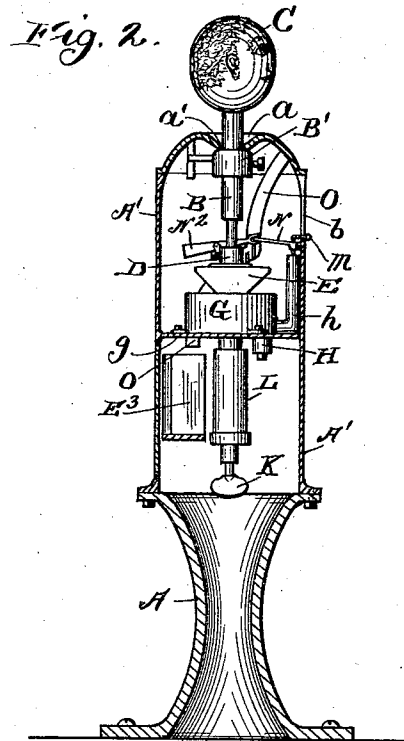
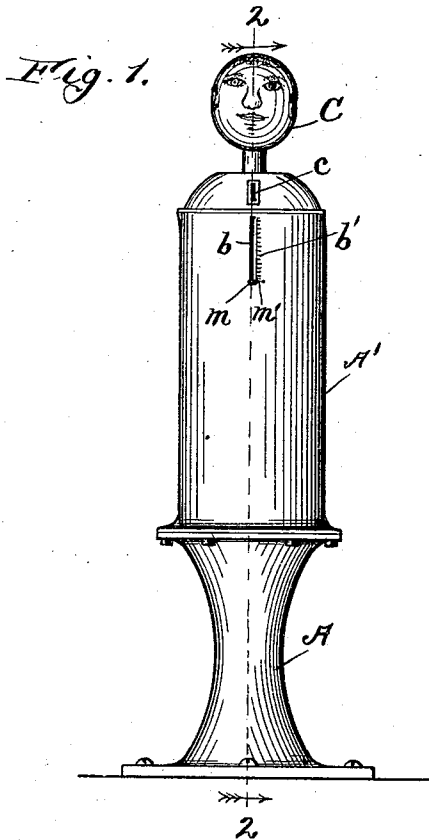
2 Sheets—Sheet 1.

J. P. WENNERSTEN.

COIN CONTROLLED STRENGTH TESTING MACHINE.

No. 543,586.

Patented July 30, 1895.



Witnesses:
R. J. Jacker,
C. A. Duggan.

Inventor:
John P. Wennersten.
By Chas. C. Tillman Atty.

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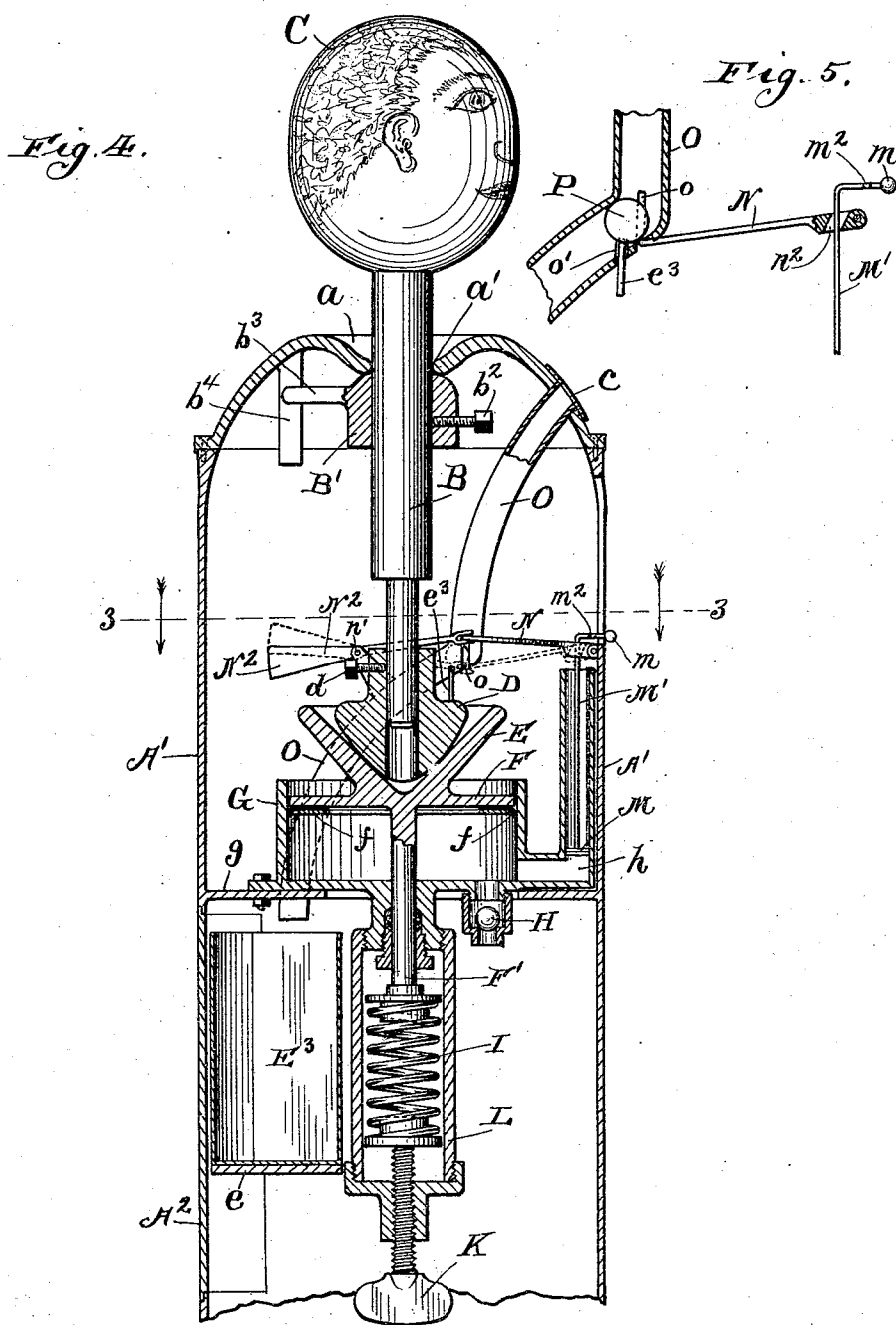
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UNITED STATES PATENT OFFICE.

JOHN P. WENNERSTEN, OF CHICAGO, ILLINOIS.

COIN-CONTROLLED STRENGTH-TESTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 543,586, dated July 30, 1895.

Application filed January 18, 1895. Serial No. 535,325. (No model.)

To all whom it may concern:

Be it known that I, JOHN P. WENNERSTEN, a subject of the King of Sweden and Norway, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Coin-Controlled Strength-Testing Machines, of which the following is a specification.

This invention relates to improvements in a device for testing and registering the degree or force of a blow made by the hands or an instrument held therein; and it consists in certain peculiarities of the construction, novel arrangement, and operation of the various parts thereof, as will be hereinafter more fully set forth and specifically claimed.

The objects of my invention are, first, to provide a machine which shall be simple and inexpensive in construction, strong and durable, and effective in operation; second, such a device as will automatically indicate the force of a blow when given from any and all directions on the striking head or globe, and, third, such a device which will not indicate the force or degree of the blow without the deposit of a coin of a specified denomination.

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

Figure 1 is a view in front elevation of my device as it appears when ready for use. Fig. 2 is a vertical sectional view taken on line 2 2 of Fig. 1, showing the interior mechanism of the device in elevation. Fig. 3 is a plan sectional view taken on line 3 3 of Fig. 4. Fig. 4 is an enlarged vertical sectional view of the upper portion of my machine, taken on line 2 2 of Fig. 1, and showing a portion of the operating mechanism in section; and Fig. 5 is a detail sectional view of a part of the guide or chute for the coin and of the tripping-lever and indicating-rod.

Similar letters refer to like parts throughout the different views of the drawings.

A represents the base of my machine upon which is mounted and secured in any suitable manner a casing A' which is preferably cylindrical in shape, and may be made of any

suitable size, form, and material. The upper part of this casing is contracted as shown in the drawings, and is formed at its top with a depression *a*, through which is an opening *a'* for the passage and operation of the bar or standard B, upon the upper end of which is secured a head or spherical body C, which may be made of any suitable material, but preferably of a flexible or soft substance. On a portion of the sphere or body C may be painted or otherwise shown the face of a man, as illustrated in the drawings.

The front of the casing A' is provided with a vertical slot *b*, which is furnished with graduating-marks *b'*, to indicate the degree or force of the blow given on the head C. Just above the slot *b* the casing is formed with another opening *c* for the reception of the coin, which is required to be deposited in order to cause the machine to indicate the force of the blow. Just below the opening *a'* the bar or standard B is provided with a collar B', which is fixed on the bar by means of a set-screw *b*². The collar B' is provided on one of its sides with a forked piece *b*³, which strides a downwardly extending lug or projection *b*⁴, formed or secured on the inner surface of the inner portion of the casing, which prevents the bar or standard B turning in the opening *a'*, but allows it free vertical and lateral movement.

As is clearly shown in Fig. 4 of the drawings, the edge of the opening *a'* is rounded or beveled and the upper portion of the collar B' is likewise rounded, thus forming a fulcrum-point for the bar or standard B, on the lower end of which is fixed by means of a set-screw *d* an inverted cone-shaped piece D, which normally rests in a funnel-shaped receptacle E, formed on or secured to the upper surface of the piston F, which piston is provided near its periphery with a washer *f* of rubber, leather, or other flexible material, in order to obtain an air-tight fitting within the cylinder G, in which the piston F operates. The cylinder G rests on a shelf *g* within the casing A', and is provided in its lower portion with a ball-valve H to admit air to the cylinder when required. The cylinder G is also provided at its side or periphery with a pipe *h*, which opens into the cylinder and extends horizon-

tally to the edge of the casing A', and then vertically to near the lower portion of the slot b in the casing.

The piston-rod F', which passes through the lower part of the cylinder G, has secured to its lower end a spring I, whose tension is regulated by means of a set-screw K, located in the bottom of the receptacle L, which may also be secured to the lower portion of the cylinder G. The lower portion of the casing A' is provided with a shelf e, upon which rests a box or other receptacle E³ for a deposit of the coins, which receptacle may be removed from the casing by opening the door A² made therein for said purpose.

Within the vertical portion of the pipe h is placed and operates a piston M, whose rod M' is bent at its upper portion outwardly and extends through the slot b in the casing. The outer end of the rod M' is provided with a knob m, having a point m' to indicate the marks b' on the edge of the slot. Just within the casing the horizontal portion of the piston-rod M' is provided with lateral projections m² to act as a guide for said rod in its operation in the slot.

Just below the slot b in the casing is pivoted a lever N, which is curved, as shown in Fig. 3 of the drawings, and extends partly around yet above the funnel-shaped piece E of the piston F. The inner end of the lever N is formed with an arm n at substantially a right angle thereto, which arm passes into and operates within a slot o of the coin guide or chute O, which guide is connected to the inner surface of the casing in such a manner as to receive the coin when it is placed in the slot c therefor. On the arm n of the lever N is pivotally secured another lever N², which is fulcrumed, as at n', to a projection on the lower portion of the coin-guide O, which guide is formed with an elbow or bend at or near the slot o therein, and extends downward to just above the box E³ for the reception of the coins. The lever N² is of sufficient weight at its free end to counterbalance the weight of a coin of a specified denomination, which may rest within the guide O on the arm n of the lever N, to which the lever N² is pivotally connected, as before stated. Just below the slot o in the coin-guide is provided an opening o' for the reception of a pin or projection e³ on the funnel-shaped piece E, which projection normally extends a short distance within the coin-guide to retard the progress of the coin therethrough until the desired time. The end of the lever N, adjacent to the casing, is provided with an inclined or angular opening n², through which passes and operates the piston-rod M' for the pipe or cylinder.

From the foregoing and by reference to the drawings it will be seen and readily understood that by depositing a coin in the slot c the guide O will conduct it downward until

it reaches and rests on the arm n of the lever N, when, by reason of the weight of the coin, the said lever will be deflected to the position indicated by dotted lines in Fig. 4 of the drawings, when upon striking the head or sphere C, either on its top or side, the funnel-shaped piece E and the piston F will be pressed downward by reason of the action of the inverted cone-shaped piece D, thus removing the pin e³ from the opening o' in the coin-guide, thus releasing the coin P and allowing it to descend into the receptacle E³ therefor, and at the same time the air within the cylinder G, being compressed by the downward movement of the piston F, will cause the piston M, carrying the rod M', to rise in the pipe or cylinder h, and will indicate, by its pointer m', the degree or force of the blow. By reference to Fig. 4 it will be seen that when the levers N and N² are in the position indicated by continuous lines the rod M' will be held either in a raised or lowered position by reason of the angular opening n² through the lever N, and that when the said levers are forced down to the positions indicated by dotted lines in said figure, the rod M' will pass through the opening n² without obstruction. It is also apparent by reference to the drawings that if the head or sphere C is struck on the side or on top the piston F will be driven downward by reason of the cone-shaped piece D fitting in the funnel-shaped piece E, and of the peculiar way of fulcruming the bar or standard B in the upper portion of the casing.

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

1. The combination with a casing having in its top an opening and in its side a vertical slot, of a standard or bar in said opening provided at its top with a head or spherical piece, an inverted cone-shaped piece secured to the lower portion of said bar, a cylinder located within the casing and having in its lower portion a valve to admit air, and in its side a pipe for the indicating rod and its piston, a spring-controlled piston to operate in said cylinder having on its upper surface a funnel shaped piece to engage the cone-shaped piece on the bar, a piston within the pipe and a rod attached to said piston and extending through the slot in the casing, substantially as described.

2. The combination with the casing A', having in its upper part the openings a', and c, and slot b, provided with the marks b', of the bar B, having the head C, the inverted cone shaped piece D, secured to its lower end, the cylinder G, located in the casing and having the valve H, in its lower part, the pipe h, opening into said cylinder, and spring-controlled piston F, having the funnel shaped piece E, provided with the pin e³, on its upper surface, the piston M, within the pipe h,

the rod M', attached to the piston M, at its lower end, and provided with a projection at its upper end to extend through the slot b, in the casing, the coin-guide O, having the slot o, and opening o', the lever N, pivoted to the casing and having the angular opening n², near its pivoted part, and the arm n, at its other end, the lever N², fulcrumed at n', and

pivotally connected to the lever N, all constructed, arranged, and operating substantially as and for the purpose set forth.

JOHN P. WENNERSTEN.

Witnesses:

CHAS. C. TILLMAN,
E. A. DUGGAN.