

(Model.)

2 Sheets—Sheet 2.

G. F. W. SCHULTZE.

COIN OPERATED PUNCHING OR STRIKING MACHINE.

No. 414,330.

Patented Nov. 5, 1889.

FIG. 2.

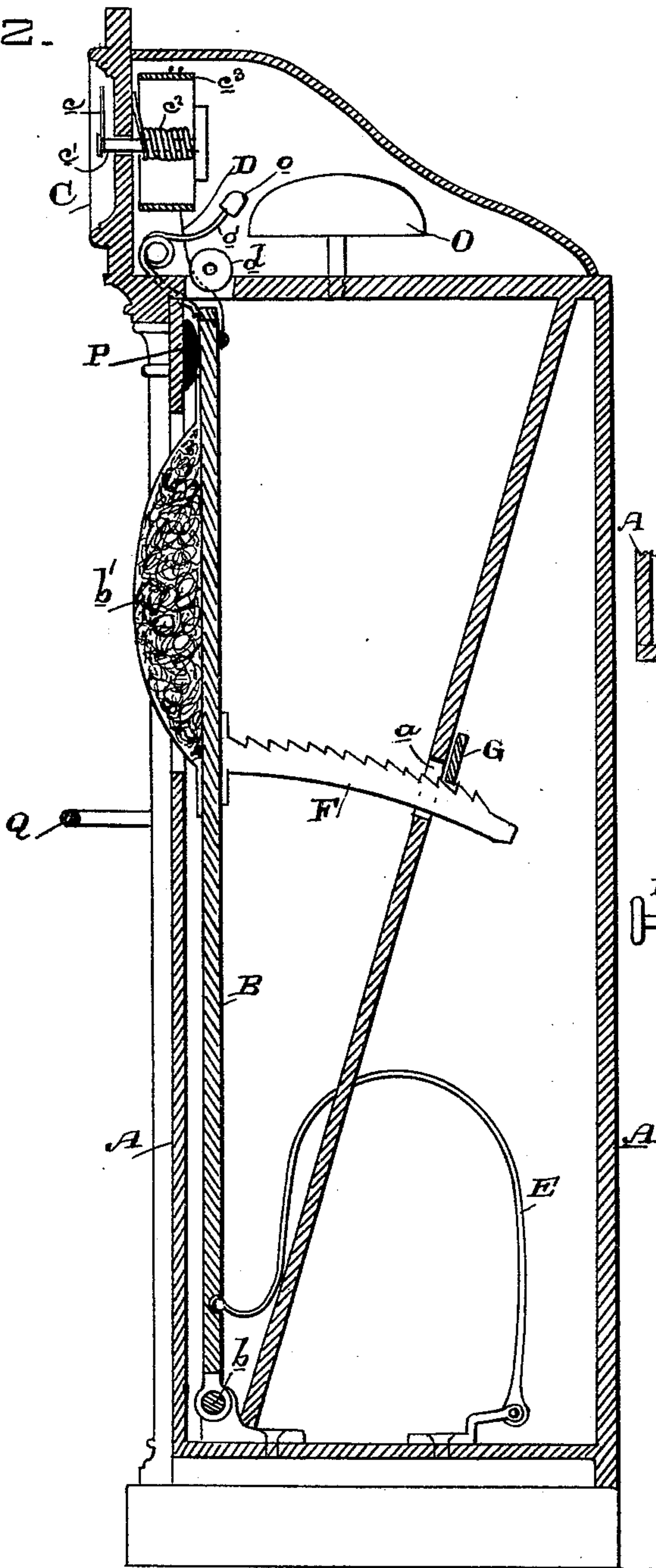


FIG. 3.

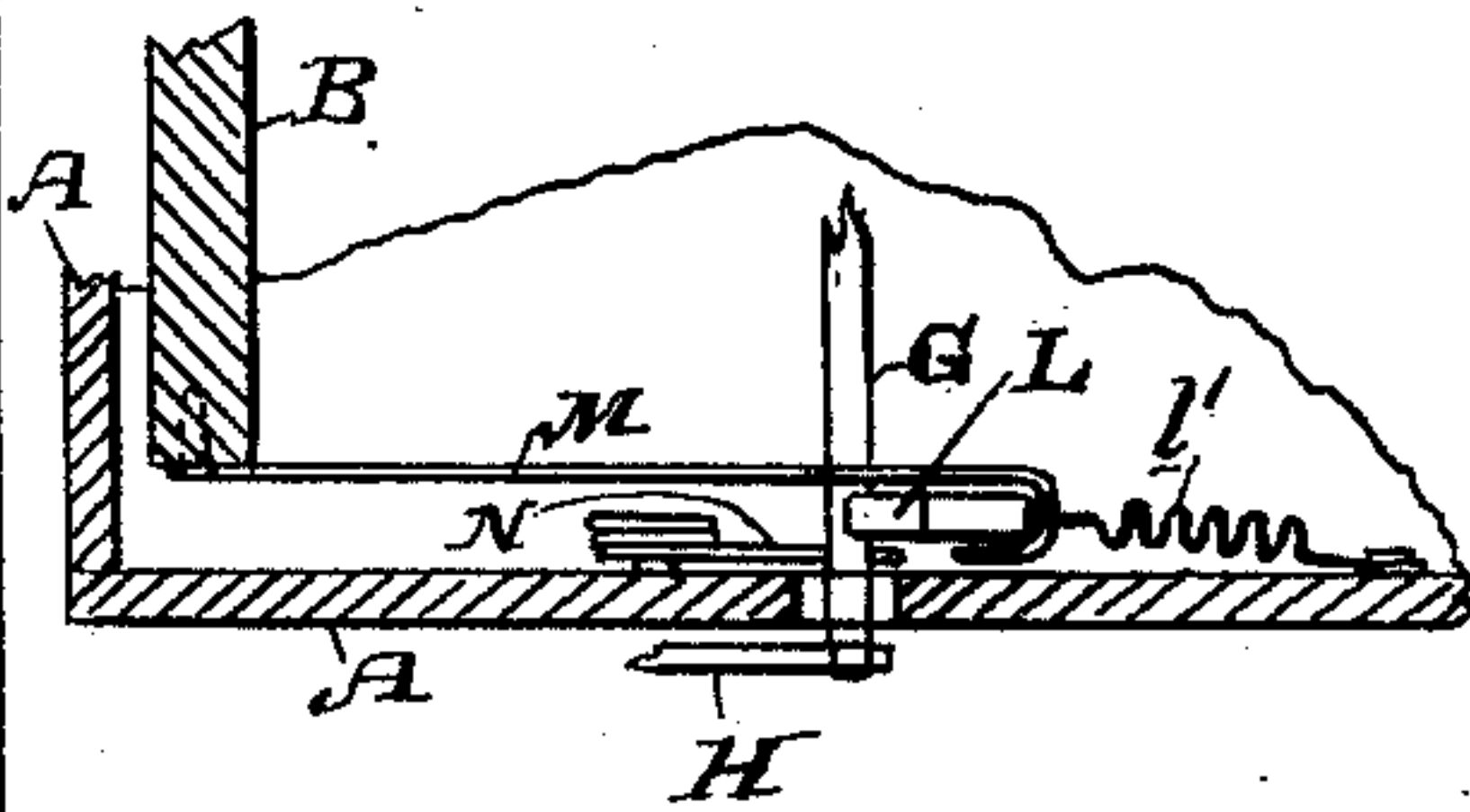
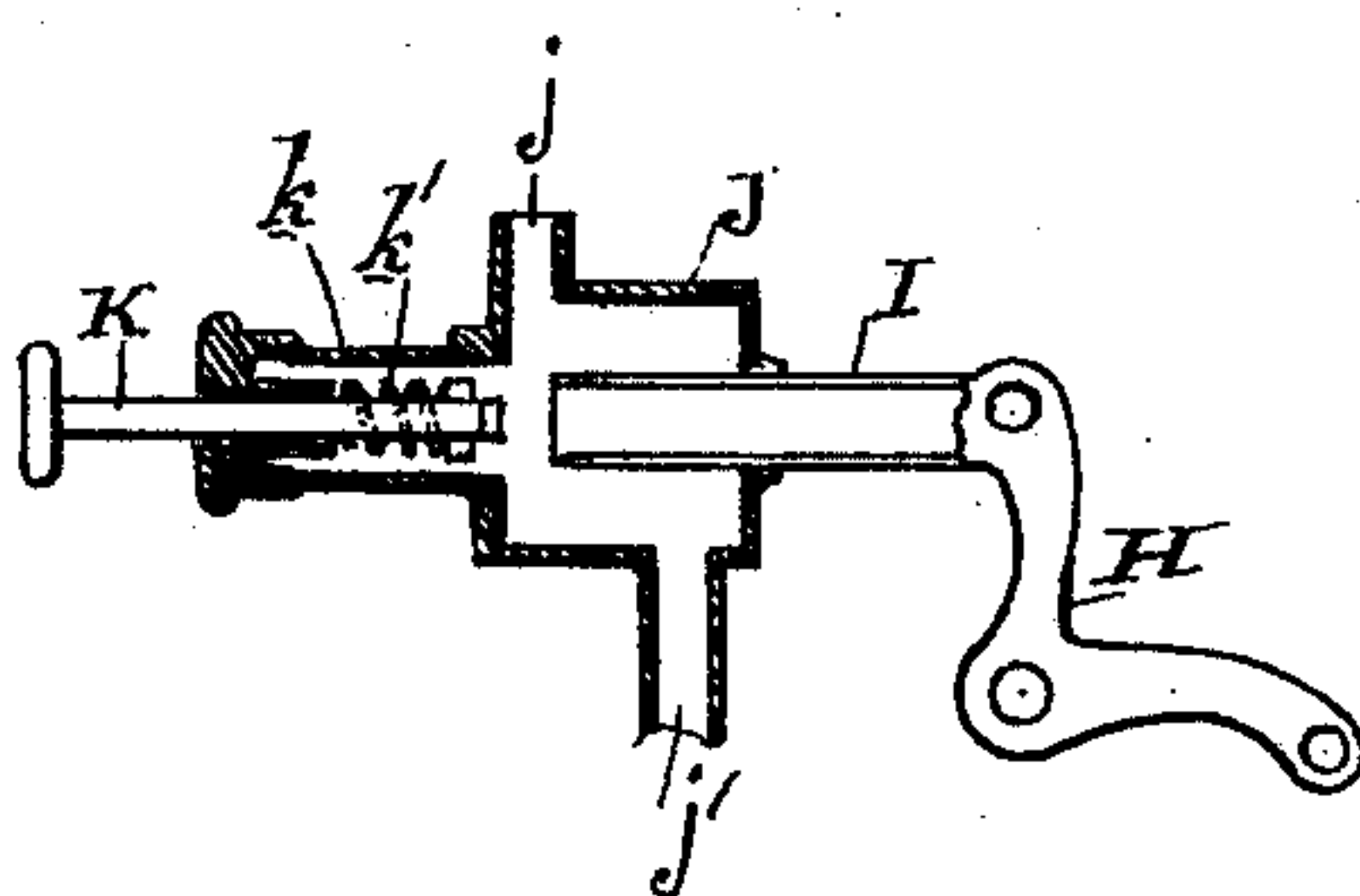


FIG. 4.



Witnesses,
J. H. Morse
H. C. Lee.

Inventor,
Gustav F. W. Schultze
By Dancy & Co.
attys

UNITED STATES PATENT OFFICE.

GUSTAV F. W. SCHULTZE, OF ALAMEDA, CALIFORNIA.

COIN-OPERATED PUNCHING OR STRIKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 414,330, dated November 5, 1889.

Application filed July 8, 1889. Serial No. 316,856. (No model.)

To all whom it may concern:

Be it known that I, GUSTAV F. W. SCHULTZE, of Alameda, Alameda county, State of California, have invented an Improvement in Coin-Actuated Punching-Machines; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to that class of machines which normally remain inoperative, but are called into action by the operation of a coin deposited in a suitable receptacle in connection with the machine, and especially to that class of these machines which are for the purpose of testing the striking or punching power.

My invention consists in a hinged swinging padded flap adapted to receive the blow, a spring or springs for resisting the force of the blow and controlling the movement of the flap, a register, and a connection between the register and the flap whereby the amount of its movement is determined, a locking device for holding the flap normally inoperative, and a tripping mechanism adapted to be operated upon the deposit of a suitable coin, whereby the flap is allowed to come to an operative position, and in various minor details of arrangement, construction, and combination, all of which will be hereinafter more fully described, and specifically pointed out in the claims.

The object of my invention is to provide a simple and effective machine of this class for testing the striking-powers.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a perspective view of my machine, the casing being broken away in places to show interior parts. Fig. 2 is a vertical section of my machine. Fig. 3 is a plan of the catching mechanism for the relief of the coin. Fig. 4 is a section of the trip.

A is the frame of the machine.

B is the striking-flap. This is hinged at its base in the base of the frame on the shaft b , so that said flap is adapted to have a swinging movement through an arc of a circle from a vertical position to an inclined position. The top face of this flap is padded at b' with any suitable material, and on this pad may be marked or painted any suitable de-

sign—such, for example, as the physiognomy of any celebrated athlete. On the top of the frame is the registering-dial C, over which plays a finger c mounted on a shaft c' , which is influenced by a spring c^2 , the said shaft being connected with a drum c^3 , so as to return and hold the finger normally at zero.

D is the cord or string attached to the winding-drum c^3 , and thence passing down through the top of the frame over a suitable guide-pulley d and attached to the top of the swinging flap.

E are springs secured within the base of the casing and acting against the back of the flap to hold it in a vertical position and to resist the backward movement of the flap under the force of the blow. It will be seen that by regulating the power of these springs in accordance with the movement of the flap and the arrangement of the registering-dial, the exact force of the blow, as measured in pounds, may be indicated upon the dial.

The operation of the device as far as described is as follows: When in operative position, the swinging flap lies in a vertical plane and the finger of the dial is standing at zero. Upon a blow being delivered upon the padded face of the flap, it is driven backwardly about its pivotal shaft at its base and against the power of the springs, and the amount of this movement of the flap is registered by the finger of the dial through the connecting-cord and winding-drum.

Now, in order to throw and hold the swinging flap out of action, except upon the deposit of a coin, I have the following locking mechanism and tripping device for releasing the locking mechanism: To the back of the swinging flap is attached a rack-bar F, which passes through a suitable guide a in the frame-work and is engaged by a pawl G, which is pivoted at g to the guide or support a . The teeth of the rack are so inclined that in moving backwardly they slip the pawl, but engage it in moving forwardly. Therefore when the flap is driven back its rack passes by the pawl readily; but said pawl immediately engages the rack, so that the flap is held in the position to which it may be driven.

To trip the pawl, so as to allow the flap to

come forward again to an operative position, I have the pivoted bell-crank lever H, one arm of which is connected with the outer end of the pawl G, and the other arm is connected with a sliding trip-bar I, which is mounted at its forward end in a casing J. This casing has a top slot *j*, adapted by its dimensions to receive the proper coin intended for the machine, and it has also in its base a discharge-opening *j'*, out of line with the slot *j*, and which may communicate with any suitable receptacle for the coin. The sliding trip-bar I extends into this casing, and its forward end is made hollow or provided with a socket, into which is adapted to slide a push-rod K, mounted in a bearing *k* and provided with a spring *k'*, by which it is held normally forward. The operation of this tripping mechanism is as follows: When no coin is dropped through the slot *j* into the casing, the push-rod K, upon being forced in, simply passes its inner end into the tubular inner end of the sliding trip-bar and does not affect said bar at all, so that the device remains in a locked position; but upon dropping a coin into the slot *j* it passes down into the casing directly between the adjacent but separated ends of the sliding trip-bar and the push-rod, so that when the latter is forced forwardly by the operator it comes in contact with the coin, and, pushing against said coin, thereby forces the sliding trip-bar backward. This movement of the sliding trip-bar operates the bell-crank lever H, which moves the pawl G on its pivotal center, thereby releasing the rack. Thereupon the swinging flap is thrown forward by its springs to a vertical position.

Now, in order to provide for releasing the coin from between the push-rod and the sliding trip-bar, I have the following device: L is a catch pivoted at *l* and having a spring *l'*, by which it is held back. The top of this catch, when thrown forward, is adapted to engage the top of the pawl G and hold it in this position, thereby preventing the sliding trip-bar from moving back again to follow the push-rod, for if it did so the coin would simply be carried back between the two, but by holding the sliding trip-bar temporarily the push-rod may return to its normal position, thereby freeing the coin, which thereupon drops down through the opening *j'* directly under it. The catch L is thrown forward to position to thus engage the pawl G by means of an arm M, attached to the swinging flap and engaging the catch. A spring N, acting against the pawl G, holds said pawl in engagement with the rack, and also returns the sliding trip-bar to normal position.

O is a gong, and *o* is a pivoted hammer adapted to strike the gong, said hammer having a stem *o'*, adapted to be struck by the swinging flap when it reaches its vertical or operative position, thereby giving notice of the fact. A cushion P is placed within the top of the frame for limiting and easing the return of the flap. A railing Q is built

around the front of the main frame A at such a distance as to make it inconvenient for the operator to reach and strike the flap except when the said flap is in an operative position in a vertical plane.

The entire operation of the machine is as follows: When set ready for use, the swinging flap is thrown backward to an incline, in which position it is held by the pawl G engaging its rack. Any one now wishing to test his striking-power, but without payment, will fail, for upon pushing in rod K it simply enters freely the tubular end of the trip-bar I and does not move said bar, so that the lock is not relieved and the flap remains out of position; but upon depositing the proper coin in the slot *j* it falls down into the casing J between the end of the push-rod and the end of the sliding trip-bar. The coin being now in place, the operator pushes in the rod K, so that through the intervention of the coin the sliding trip-bar is forced backwardly, and through the bell-crank lever H throws the pawl G out of engagement with the rack F of the flap, which is immediately thrown forward to a vertical position by its springs. It is limited in its forward movement by the cushion P, and, striking against the stem of the hammer *o*, causes said hammer to strike the gong O, thereby giving distinct notice that the machine is ready for action. This forward movement of the flap also allows the finger on the dial to return under the influence of its spring to zero, and, furthermore, this forward movement of the flap causes its arm M to pull the catch L forward, thereby engaging the pawl G and holding said pawl downward and the sliding trip-bar back, so that when the operator relieves the push-rod the trip-bar does not follow it, and the coin drops out through the opening *j'* in the casing. Now the operator delivers a blow upon the padded face of the flap, thereby driving it backward and registering on the dial above the force of the blow. The flap is held in the position to which it is driven by means of the pawl G engaging the rack. As the blow is delivered, the arm M of the flap releasing the catch L, said catch is drawn back by its spring, thus allowing the pawl to drop to its engagement with the rack and allowing the trip-bar to move forwardly to position again. The whole device is now inoperative and can only be thrown into action once more by the depositing of another coin and the forcing in of the push-rod to release the flap and allow it to come to a vertical position.

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

1. In a punching-machine, the swinging striking-flap and the springs for holding the said flap in an operative position and resisting the blow, in combination with a locking mechanism connected with the flap for holding it back in an inoperative position and a tripping mechanism for said locking device,

whereby the flap is relieved and returned by said spring to an operative position, substantially as described.

2. In a punching-machine, the swinging striking-flap and the springs for holding the flap in an operative position and resisting the blow, in combination with the registering device and a connection between said device and the flap whereby its movement is communicated to the registering device, substantially as described.

3. In a punching-machine, the combination of the swinging striking-flap, the springs controlling said flap, a registering device, and connection between said device and flap, whereby its movement is registered, a locking device for holding the flap back in an inoperative position, and a tripping mechanism for releasing the locking device to allow the flap to return to an operative position, substantially as described.

4. In a punching-machine, the swinging striking-flap and the springs for holding said flap in an operative position and resisting the force of the blow, in combination with the rack-bar on the back of the flap, the pawl engaging the said rack-bar, whereby the flap is held in an inoperative position, and a tripping mechanism for relieving said pawl and allowing the flap to return to an operative position, substantially as described.

5. In a punching-machine, the swinging striking-flap and the springs for controlling it, in combination with the rack connected with the flap, the pivoted pawl engaging the rack, whereby the flap is held in an inoperative position, and the tripping mechanism for relieving said pawl, consisting of the bell-crank lever connected with the pawl, the coin-casing, the sliding trip-bar entering said casing and connected with the bell-crank lever, and the push-rod entering said casing and adapted to move the sliding trip-bar through the intervention of the coin in the casing, substantially as described.

6. In a punching-machine, and in combination with the swinging striking-flap, the springs controlling it, and the locking mechanism for holding it inoperative, the tripping device for releasing the locking mechanism, consisting of the tubular-ended sliding trip-bar connected with the locking mechanism, the push-rod in line with and adapted to enter the tubular end of the sliding trip-bar, and the coin-casing in which the adjacent ends of the bar and rod are mounted, and having a coin-inlet passage traversing the plane of movement of said bar and rod, substantially as and for the purpose described.

7. In a punching-machine, the combination of the swinging striking-flap and the springs for controlling it, the rack-bar on its back, the pivoted pawl engaging the rack-bar for locking the flap in an inoperative position, and the tripping mechanism consisting of the bell-crank lever connected with the pawl, the sliding trip-bar connected with the bell-

crank lever and having a tubular or socketed end, the push-rod in line with the tubular or socketed end of the sliding trip-bar and adapted to enter it, and the coin-casing in which the adjacent ends of the bar and rod are mounted, and having a coin-inlet passage traversing the plane of movement of said bar and rod, substantially as and for the purpose described.

8. In a punching-machine, the combination of the swinging striking-flap, the springs controlling it, the rack-bar and the pivoted pawl for locking the flap in an inoperative position, the pivoted bell-crank lever connected with the pawl, the sliding tubular-ended trip-bar, the spring-controlled push-rod in line with the tubular end of said bar, the coin-casing within which the adjacent ends of the bar and rod are fitted, and having a coin-passage traversing the plane of movement of said bar and rod, whereby the coin is introduced between them, and a catch operated by the swinging flap for temporarily holding the sliding trip-bar to allow the coin to drop, substantially as described.

9. In a punching-machine, the swinging striking-flap and the springs controlling it, in combination with the rack on the back of the flap, the pivoted pawl for engaging the rack and locking the flap in an inoperative position, the pivoted bell-crank lever connected with the pawl, the sliding tubular-ended trip-bar and spring-controlled push-rod in line with the tubular end of the sliding trip-bar, the coin-casing in which the adjacent ends of the bar and rod fit, and having an inlet-passage for the coin traversing the plane of movement of said bar and rod, whereby the coin is introduced between them, and a discharge-opening in its base out of line with the inlet-passage, the spring-controlled catch for engaging the pawl, whereby the sliding trip-bar is held temporarily to allow the coin to drop out of the casing, and the arm M of the flap for engaging the catch, substantially as described.

10. In a punching-machine, the swinging striking-flap and the springs controlling it, in combination with the gong and the pivoted hammer having a stem adapted to be struck by the pivoted flap when returning to an operative position; substantially as described.

11. In a punching-machine, the swinging striking-flap and the springs controlling it, in combination with a registering-dial, the finger moving over its face, the spring-controlled shaft carrying the finger, the winding-drum connected with the shaft, and the cord connected with the winding-drum and with the swinging striking-flap, substantially as described.

12. A coin-actuated punching-machine consisting of the swinging striking-flap pivoted at its base, the springs controlling said flap, the rack on the back of the flap, the spring-controlled pawl engaging the rack, the bell-crank lever engaging the pawl, the tubular-ended

sliding trip-bar connected with the bell-crank lever, the spring-controlled push-rod in line with the sliding trip-bar, the coin-casing in which the bar and rod are fitted, and having
5 a coin-inlet passage traversing the plane of movement of the bar and rod, whereby the coin is introduced between them, and having a discharge-opening at its base, the dial above, the finger playing over the dial, the

spring-controlled shaft and drum, and the 10 string connected with the drum and with the flap, substantially as described.

In witness whereof I have hereunto set my hand.

GUSTAV F. W. SCHULTZE.

Witnesses:

S. H. NOURSE,

H. C. LEE.