(No Model.)

J. W. CHUTE.

AUTOMATIC ELECTRIC RELEASING DEVICE.

No. 552,954. Patented Jan. 14, 1896.

FIG. 1

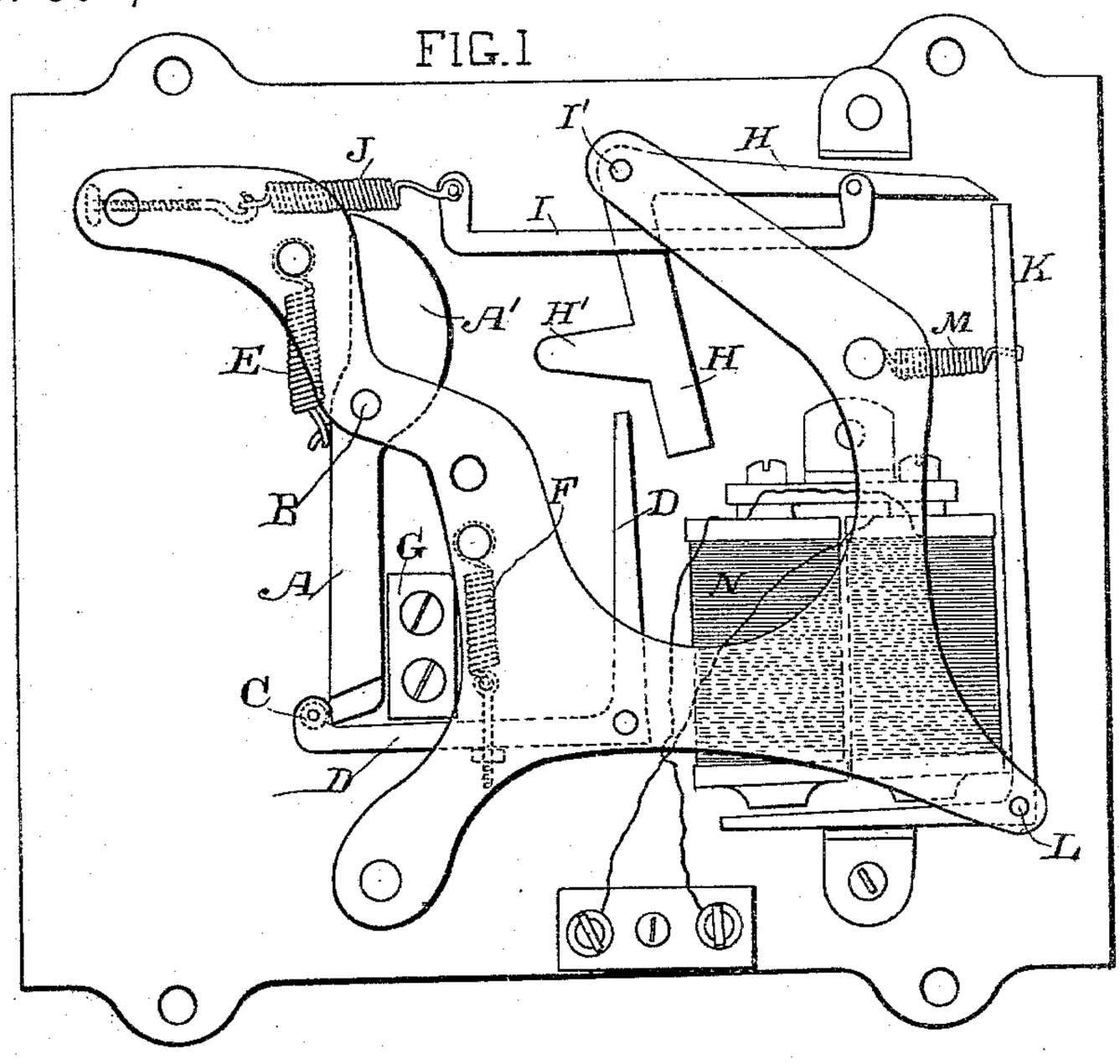
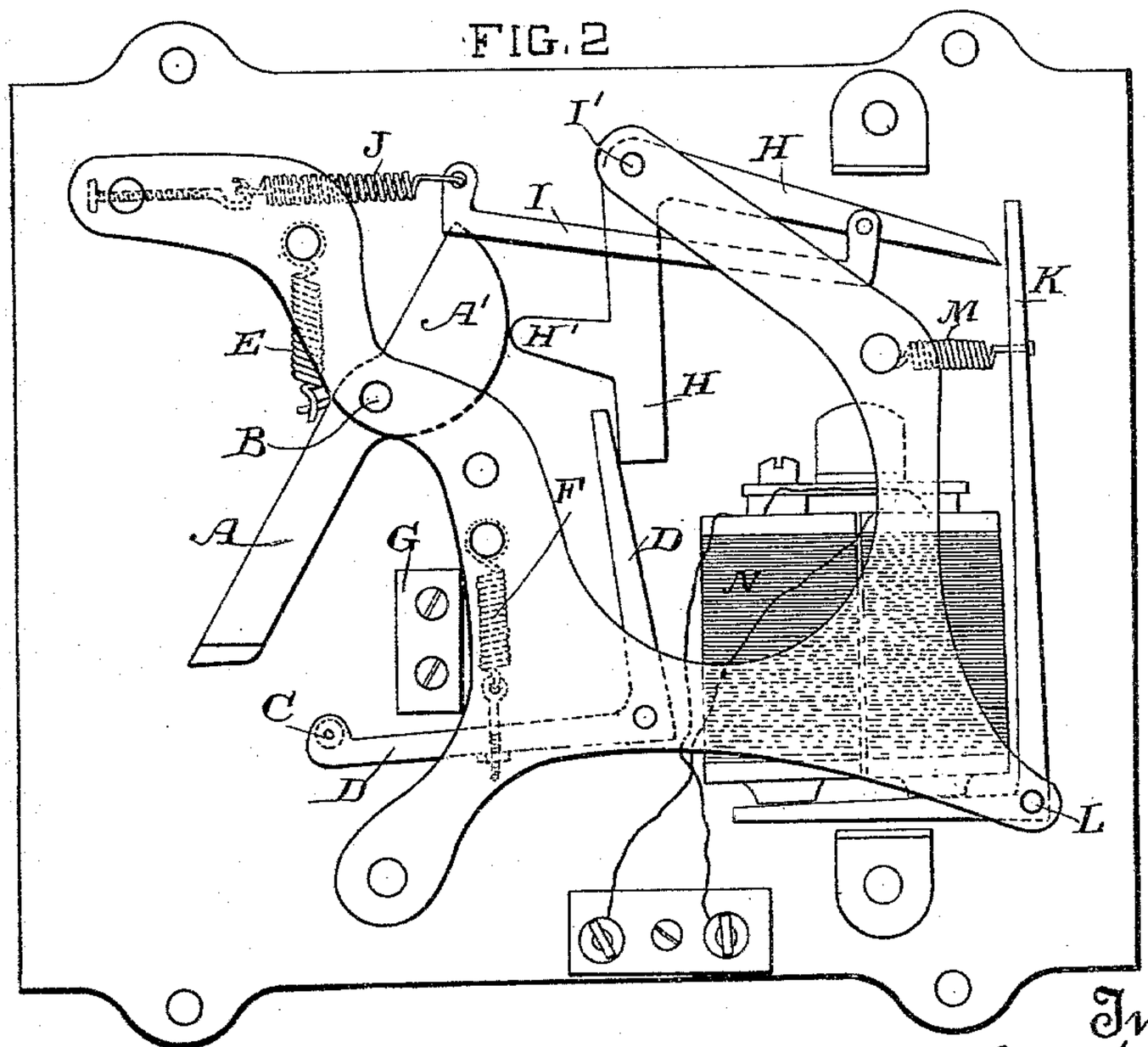


FIG. 2



Witnesses,
P. H. Turner
J. A. Bayless

Inventor
John W. Chute
By Dewey & Co.
Atts

UNITED STATES PATENT OFFICE.

JOHN W. CHUTE, OF SAN JOSÉ, CALIFORNIA, ASSIGNOR OF ONE-HALF TO JAMES WHITE, OF SAME PLACE.

AUTOMATIC ELECTRIC RELEASING DEVICE.

SPECIFICATION forming part of Letters Patent No. 552,954, dated January 14, 1896.

Application filed April 16, 1895. Serial No. 545,958. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. CHUTE, a citizen of the United States, residing at San José, county of Santa Clara, State of California, have invented an Improvement in Automatic Electric Release and Resetting Devices; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to an automatically-operating release and resetting device which is applicable to open gates or doors, to release any mechanism, to disengage horses from their fastenings, and for any other similar purposes.

It consists in certain details of construction which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 shows the device set in its normal position. Fig. 2 shows the holding-arm release and the operating mechanism reset.

A is a swinging arm having fulcrum or journal pins B, about which it is turnable. The lower end of this arm, as it is at present shown, engages a lug or catch C upon the lower arm of the bell-crank latch-lever D, the arms of which are approximately at right angles with each other.

A spring E is connected with the arm A so as to turn it instantly around its fulcrum-points when it is released, and a spring F is connected with the arm of the latch-lever D to hold it in position to engage and hold the arm A.

G is a stop against which the latch-lever is arrested when it is returned to its normal position by its spring.

H is another bell-crank lever fulcrumed at I′, having one arm projecting downwardly so as to overlap the upwardly-projecting arm of the latch-lever D. This lever H has a link I and a spring J connected therewith, the arrangement being such that when the lever H is in its normal position and set ready for operation the spring acts very nearly in line with the horizontal arm to which it is connected, so that there is but little power exerted to pull the lever downward until after it has been released and has moved a short distance around its fulcrum. After this the power increases rapidly and the lower arm of the lever is caused to forcibly strike against the upper arm of the lever D, thus turning the latter lever about its fulcrum until it is disengaged from the arm A and the latter is allowed to move outwardly and turn about its fulcrum.

The lever-arm H is held in position by another lever-arm K, the angle of which is fulcrumed, as shown at L. The vertical arm of this lever is drawn by a spring M, so that it normally stands in line beneath the end of the lever H, and thus holds it locked, as shown in Fig. 1. The other arm of the lever K extends with relation to an electromagnet N, for which it forms an armature, lying at a short distance from the magnet.

The operation will then be as follows: Whenever the magnet is energized it will attract the armature-arm of the lever K, thus turning the lever about its fulcrum-point sufficiently to disengage the upper end from the lever H. The spring M which acts upon the lever H immediately pulls this arm down, the power increasing as it moves, and the lower arm of the lever H is caused to forcibly strike against the upper arm of the lever D. This forces the other arm of the lever D away from the point or latch of the arm A, thus allowing the latter to be moved outwardly from its position by the action of its spring. If used for holding horses in their stalls, or other place of attachment, a ring connected with a halter would surround the arm A, and as soon as this arm was released so as to fly outwardly the ring would immediately slip off without other action.

If it is desired to apply the apparatus for the opening of doors, gates, or the moving of other parts which it is desirable to separate from each other, the apparatus here described would be attached so that the movable arm A would engage the opposing movable part of the gate or other apparatus, and the action of the spring being sufficiently strong, the parts would be at once forcibly separated. In this construction the device is very useful for opening sliding gates or doors which may be used at railroad stations, ferry landings and in other similar places.

In order to reset the mechanism after the

arm A has been disengaged I have shown a curved or cam-shaped head A′ fixed upon the lever A and movable with it.

The lever H has an arm or projection H′ at such a point that when the lever A has been disengaged by the action of the parts heretofore described this projection H′ will, by the movement of the lever H, be thrown into the path of this part A′, so that as the arm A swings around its fulcrum the part A′ striking the projection H′ will immediately force the lever H back to its normal position, and the lever-arm K acted upon by its spring swings beneath the end of the arm H ready to engage it as soon as the arm A has been returned to its normal position. The arm A may remain disengaged as long as desired. When the reason for this has passed and the arm A has returned to its engagement with the lever D the other levers H and K will be in a position to again operate and disengage it when the magnet has been energized.

In the present description and illustration I have shown my apparatus as standing with the arm A approximately vertical and the other parts in suitable relation therewith, but it will be manifest that the whole apparatus may be reversed or stand at any angle with that here shown, or may lie horizontally if desired, the arrangement of the parts with relation to each other being suited to the particular work to be done.

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

1. In a releasing device, a fulcrumed spring-actuated swinging arm, a spring-actuated latch adapted to engage the arm and retain it in engagement, a spring-actuated bell crank lever fulcrumed with relation to the latching lever so as to strike and disengage it when released, and a catch by which said lever is normally retained out of contact or engagement with the latch.

2. In a disengaging or releasing device, a fulcrumed spring-actuated arm, a spring-actuated latching lever adapted to engage said arm, a second independent spring-actuated lever adapted to swing into contact with and release the latch lever, a lever engaging the latch releasing lever to hold it normally out of contact therewith, one arm of said lever carrying an armature, and an electro magnet adapted to attract said armature when energized and disengage the lever to release the parts.

3. An automatic electric releasing device consisting of a fulcrumed spring-actuated swinging arm, a spring-actuated latch engaging said arm and locking it in its normal position, a second spring-actuated bell crank lever movable when released so as to strike and disengage the latch, a bell crank armature carrying lever, one end of which engages the releasing lever, and the other carries an armature, and an electro-magnet so arranged with relation to said armature as to attract it when energized and disengage the releasing lever.

4. An automatic releasing device consisting of a swinging spring-actuated arm, a latch lever therefor, and an independent disengaging lever, an electro magnet, and an armature carrying lever by which the disengaging lever is normally held in position, in combination with a curved attachment carried by the swinging arm, and a lug upon the releasing lever adapted to be engaged by said attachment when the arm is disengaged and moved, whereby the releasing lever is returned to its normal position and engaged by the armature lever and set in readiness for a new operation.

In witness whereof I have hereunto set my hand.

JOHN W. CHUTE.

Witnesses:
S. H. NOURSE,
JESSIE C. BRODIE.