

(No Model.)

G. L. HENZEL.

ELECTRIC BOLT RELEASING DEVICE.

No. 328,030.

Patented Oct. 13, 1885.

Fig. 1.

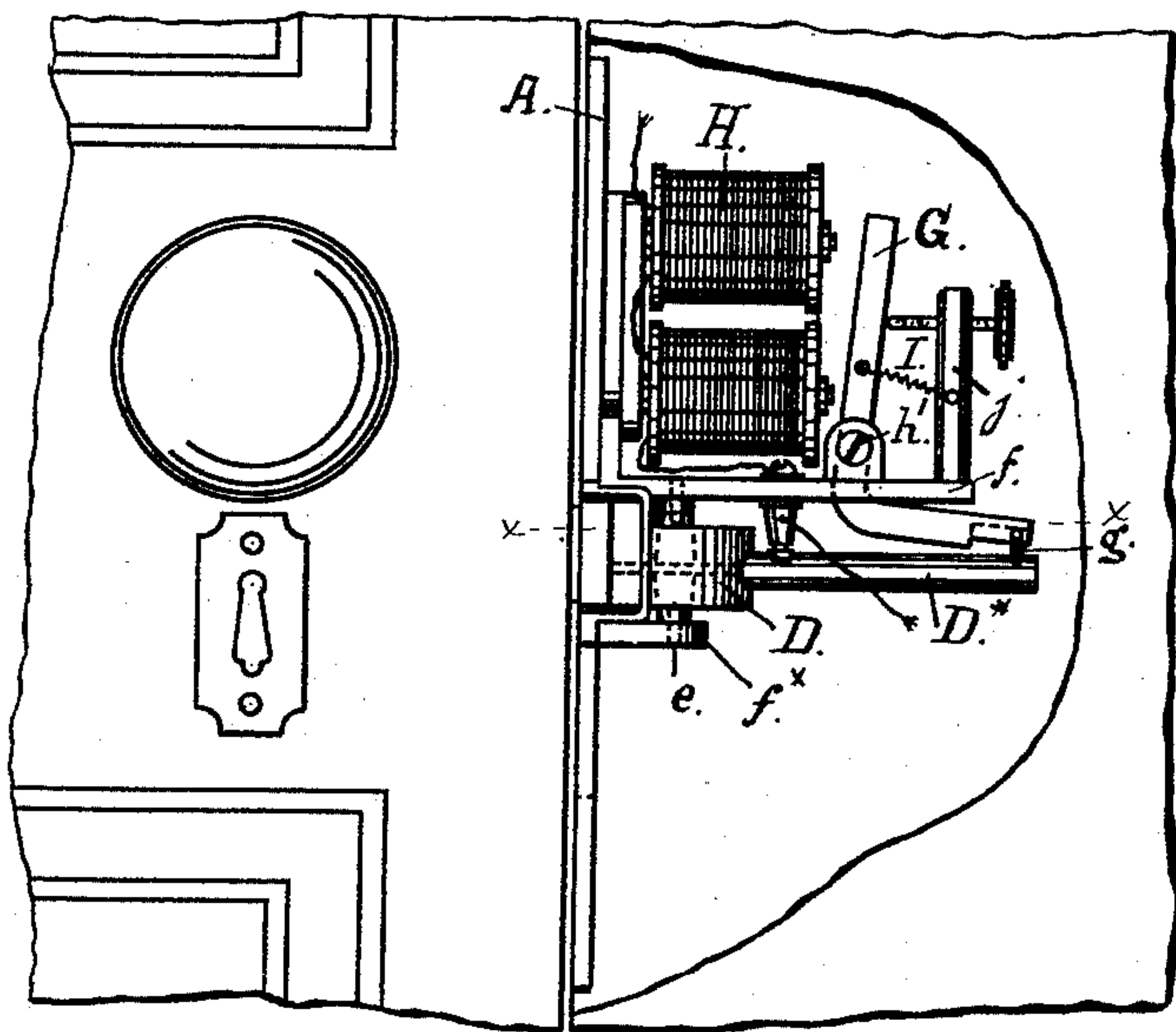


Fig. 2.

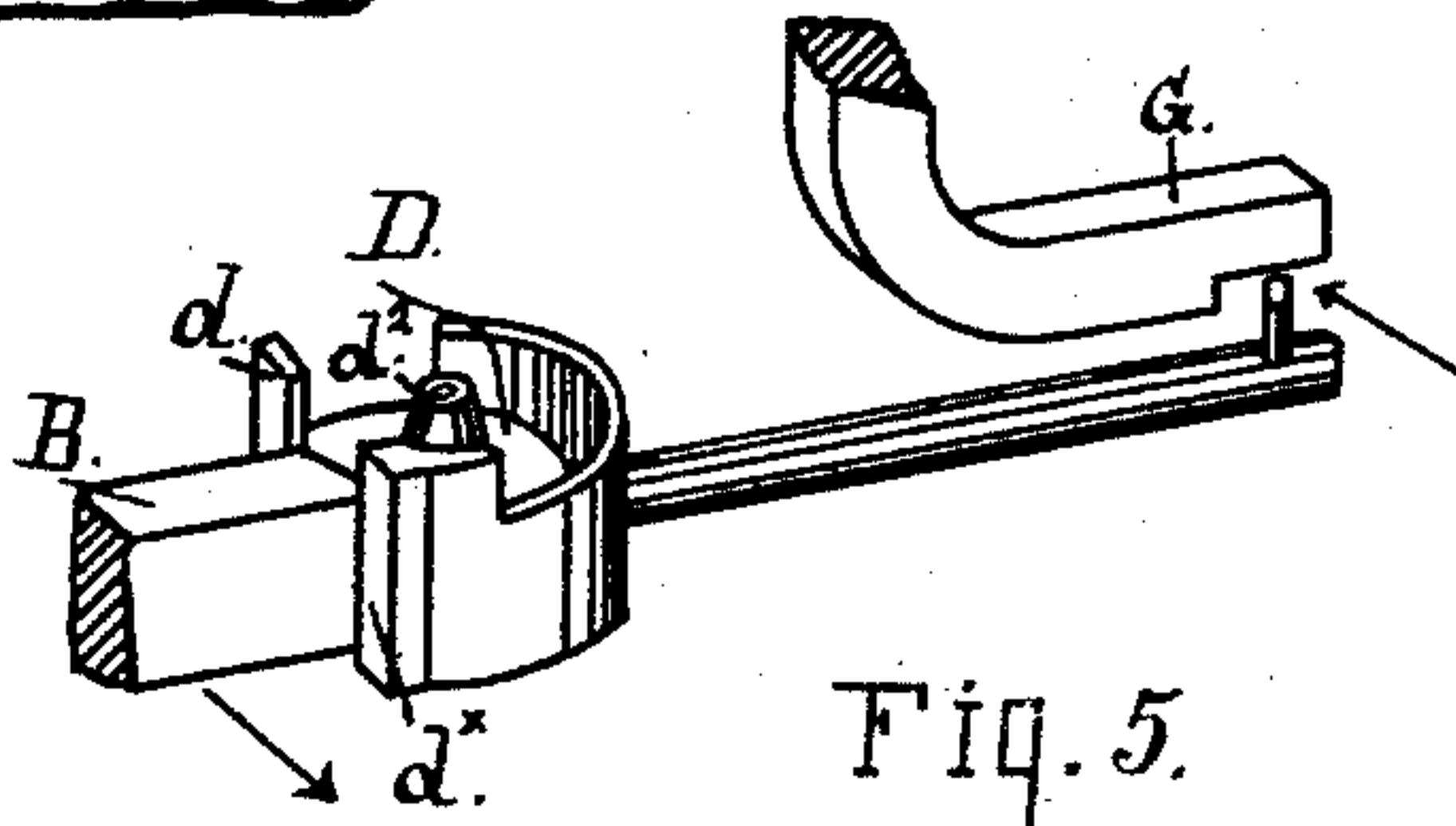
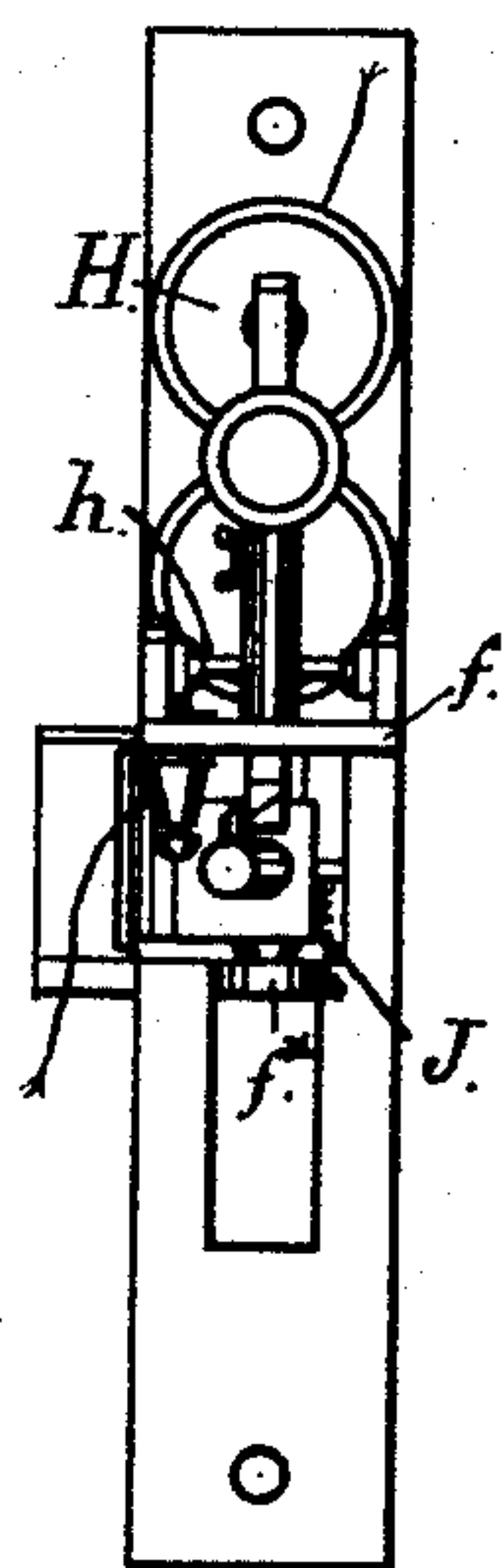


Fig. 3.

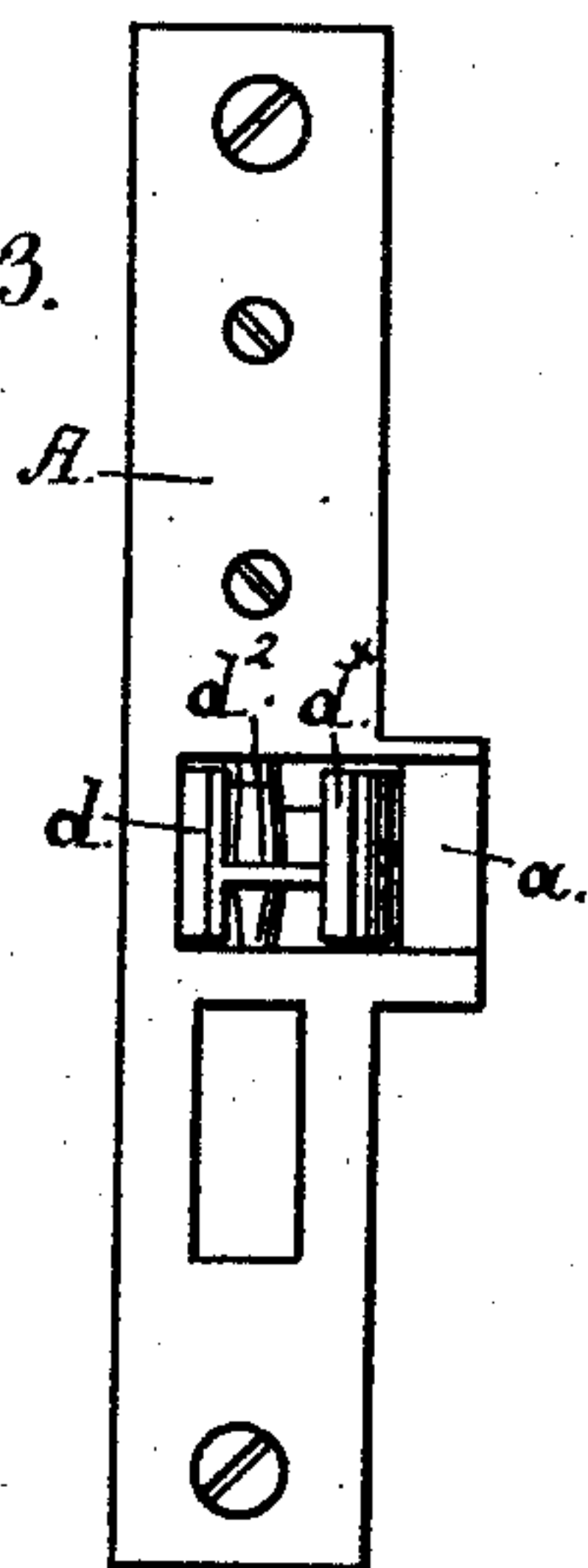
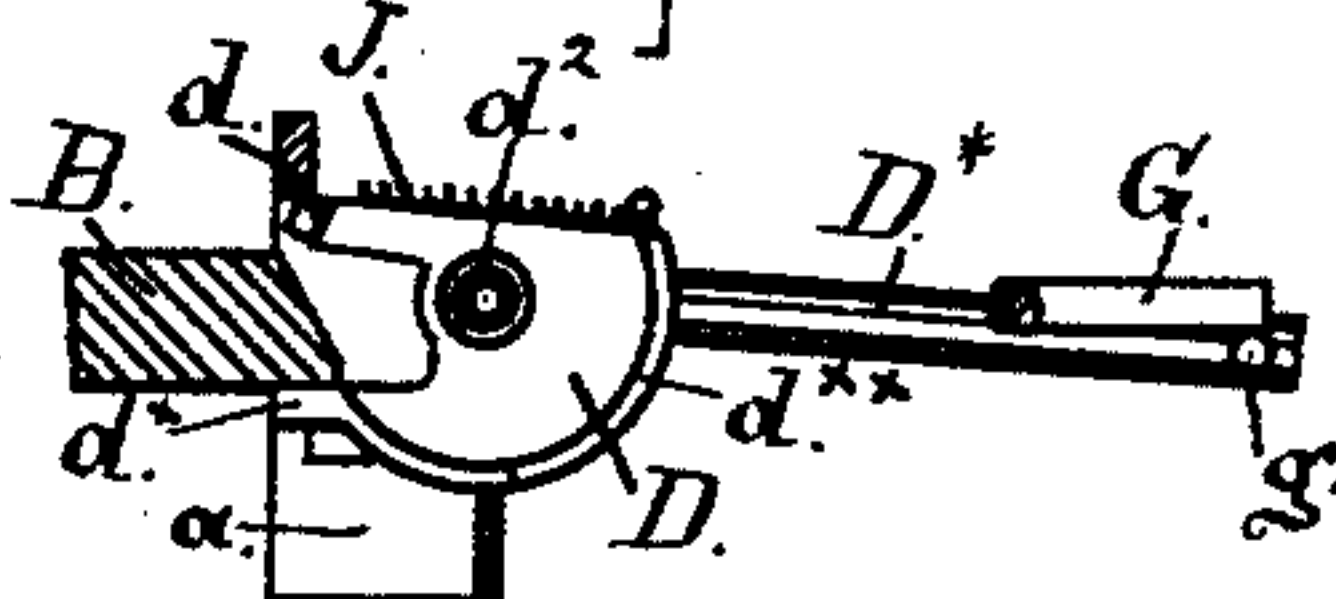


Fig. 4.



WITNESSES:

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Att'y.

UNITED STATES PATENT OFFICE.

GEORGE LUIS HENZEL, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR OF
ONE-HALF TO EDWARD F. HENZEL, OF SAME PLACE.

ELECTRIC BOLT-RELEASING DEVICE.

SPECIFICATION forming part of Letters Patent No. 328,030, dated October 13, 1885.

Application filed July 1, 1885. Serial No. 170,431. (No model.)

To all whom it may concern:

Be it known that I GEORGE LUIS HENZEL, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented certain new and useful Improvements in Electric Bolt-Releasing Device for Locks and Latches, of which the following is a specification.

My invention relates to improvements made in respect of devices for operating the locks and latches of doors from a station or standpoint more or less distant from the door to give admission at any time to persons without a pass-key; such devices being in use more particularly with the fastenings of outside doors or dwellings as a convenience for releasing door-fastenings and giving entrance without the necessity of a personal attendance at the door.

My improvements consist in certain novel construction and combination of a swinging keeper for a bolt or latch, and a locking-lever operated by an electro-magnet and the necessary battery and connects for making and breaking circuit as a means for releasing the keeper.

The construction, application, and operation of these parts are fully explained in the following description, the accompanying drawings, referred to by figures and letters, forming a part hereof.

Figure 1 represents a portion of a door and door-casing immediately surrounding the lock, the casing being broken away to expose the mechanism of my device. Fig. 2 is a rear view of the mechanism, the same being taken from the left-hand side of Fig. 1. Fig. 3 is a view from the front. Fig. 4 is a cross-section taken at the line xx , Figs. 1 and 3. Fig. 5 is a detail view in perspective of the swinging keeper.

These several views illustrate the application of the invention to a mortise-lock.

A represents the face-plate, of usual character, that contains a slot or socket, a , to receive the end of the bolt B when it is projected from the lock in the door, the edges of the slot forming a stop and keeper to confine the bolt against all movements but those given by the key or a handle. In my improvement

this socket for the bolt is a swinging piece, D, with jaws d d^* having parallel edges, and a suitable width of opening or space between them to take in the lock-bolt, and with a hub, d^2 , to take a center pin, e , upon which, as a pivot, this piece is mounted to swing freely. Bearings for this pin are provided in brackets or lugs f f^* , fixed to the back of the plate A, one above and the other below the line of the opening through the plate and in such position that the piece D is movable laterally. The extent of this movement is such that when brought to the extreme position to one side the opening will allow the bolt to clear the keeper and pass out laterally as the door is swung open, but when brought to the opposite position the opening is in line with the throw of the bolt after the door has been closed.

On the back of the swinging keeper D is an arm, D^* , furnished with a stop-pin, g , and projecting to the rear from the quadrant-shaped flange d^{**} that joins the two jaws, and in position to engage with a locking-lever, G. The lever G is hung on a pivot, h , from center screws, $h' h'$, in the bracket f , and the end below the pivot is carried to the rear to bring it in line with the pin g at the time when the keeper is set to hold the bolt. A spring, I, attached to a post, j , on the bracket and to the lever G above the center h , holds the lever down against the pin and sets it after every movement made to release the keeper-arm, and a spring, J, is applied to the keeper at one side for the purpose of insuring sufficient movement laterally of the piece to throw the pin beyond the end of the lever when that part is tripped. These parts (the arm and the lever) constitute the locking means to hold the keeper from swinging outward when it is properly set to confine the bolt, and at such time the door cannot be opened, except in the usual way with a key or by a handle, as in the case of a latch or a lock working in such manner from one side.

By drawing forward the upper end of the lever G the other end is disengaged from the arm D^* , and the keeper is free to swing and discharge the bolt through the side of the plate, the pressure of the bolt against the jaw d^*

under the force applied to swing the door open being sufficient to throw the keeper around. This open position of the keeper is maintained by the spring J, so that the bolt of the lock will enter between the jaws in the same manner as it passed out, and then by contact with the inner one, *d*, of the jaws the bolt will bring the keeper back into place again.

For the purpose of tripping the locking-lever I use an electro-magnet and an open circuit, the manner of applying which means and of making the necessary connections with push-buttons and circuit-closing devices for operating the device from a distant point will be readily carried out by a practical workman acquainted with the application of electrical apparatus to similar uses without special instructions.

The cores H of an electro-magnet are fixed to the back of the plate A, over the bracket *f*, and in such position that they lie in front of the upper limb of the locking-lever. This part of the lever is thus made to form the armature of the magnet, and is then moved by the attraction of the magnet every time the circuit is established. Such movement of the lever releases the keeper, while the spring I brings the locking-lever back into position when the circuit is broken.

The conducting-wires from the magnet are laid in any suitable way in the wood-work of the casing to any desired point or points where circuit-closing devices may be located; and in the case of double doors, provision can

be made for swinging the door that carries the keeper without disturbing the wires—such, for instance, as using the hinges for conductors between the door and the casing wires, or by employing contact-springs that are brought together when the door having the keeper is closed.

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

1. The combination of the keeper-plate A, having an open-sided slot or recess, *a*, the swinging keeper D, the arm D*, and locking-lever G, and means, as the electro-magnet and circuit-closing devices, adapted to act upon the locking-lever to trip it and release the arm by closing the circuit, and the spring I, to restore the lever to its position when the circuit is broken, substantially as described.

2. A keeper for locks and latches, consisting of the swinging piece D, having jaws *d* and *d**, and adapted to move laterally in such manner as to discharge the bolt or latch at one side, as described, the arm D*, and the locking lever G, which constitutes or is connected with the armature of an electro-magnet, H, the parts being mounted on a suitable plate, as A, for application as set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal.

GEORGE LUIS HENZEL. [L. S.]

Witnesses:

CHAS. J. KELLY,
CHAS. E. KELLY.