(Model.)

2 Sheets—Sheet 1.

C. BEILE.

ELECTRIC DOOR PULL.

No. 294,842. Patented Mar. 11, 1884.

Fig. 1.

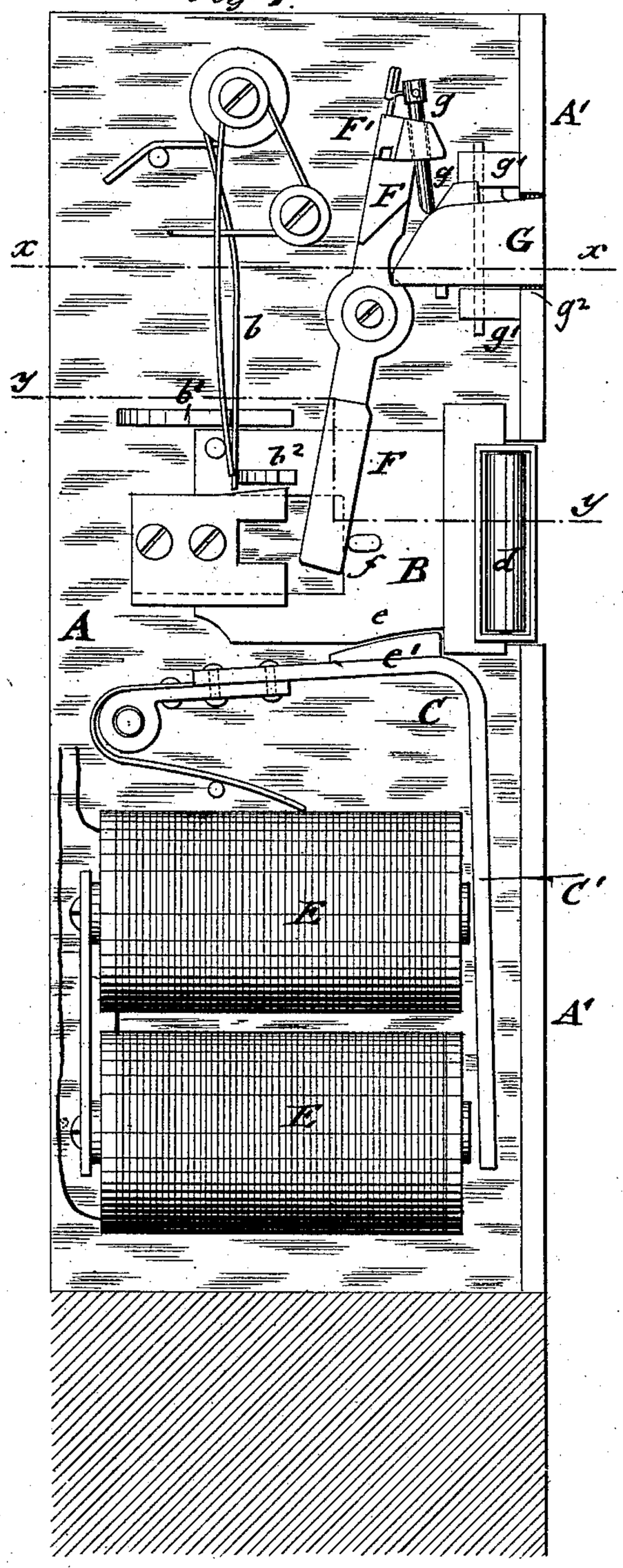
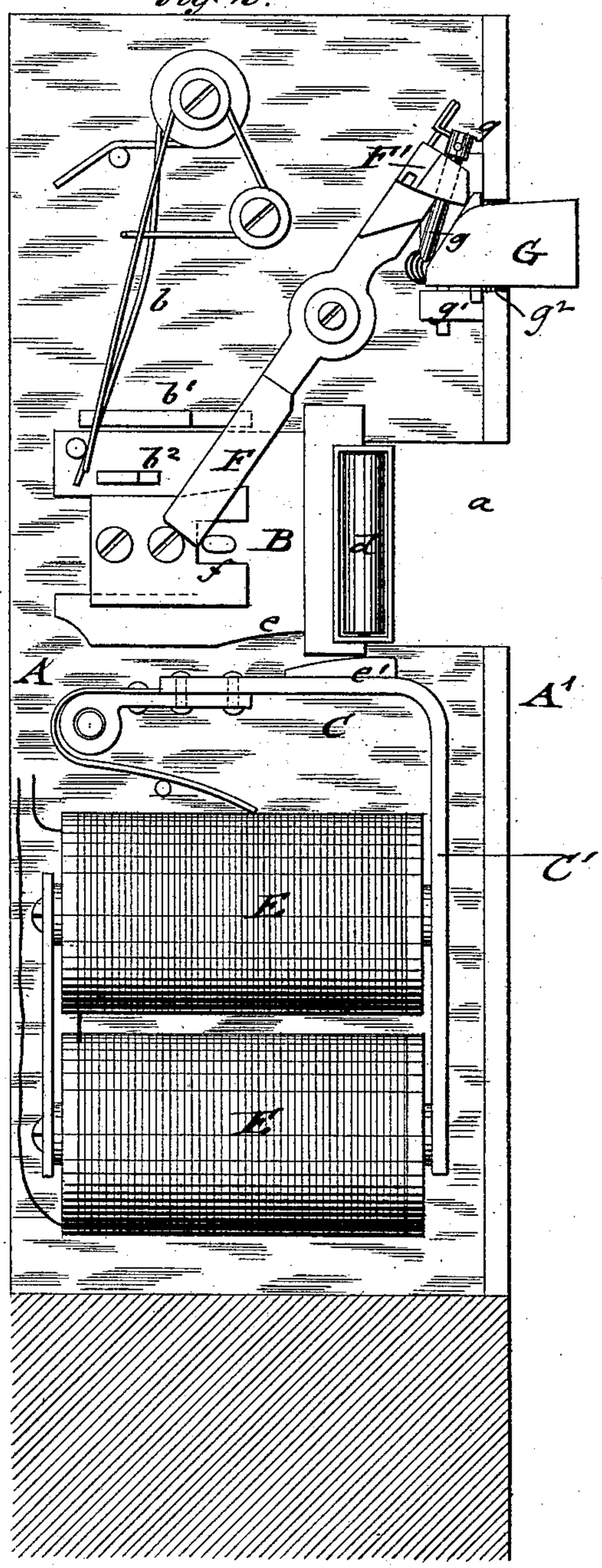


Fig. 2.



WITNESSES:

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Carl Kapp

INVENTOR

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(Model.) 2 Sheets—Sheet 2.

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Fig. 3.

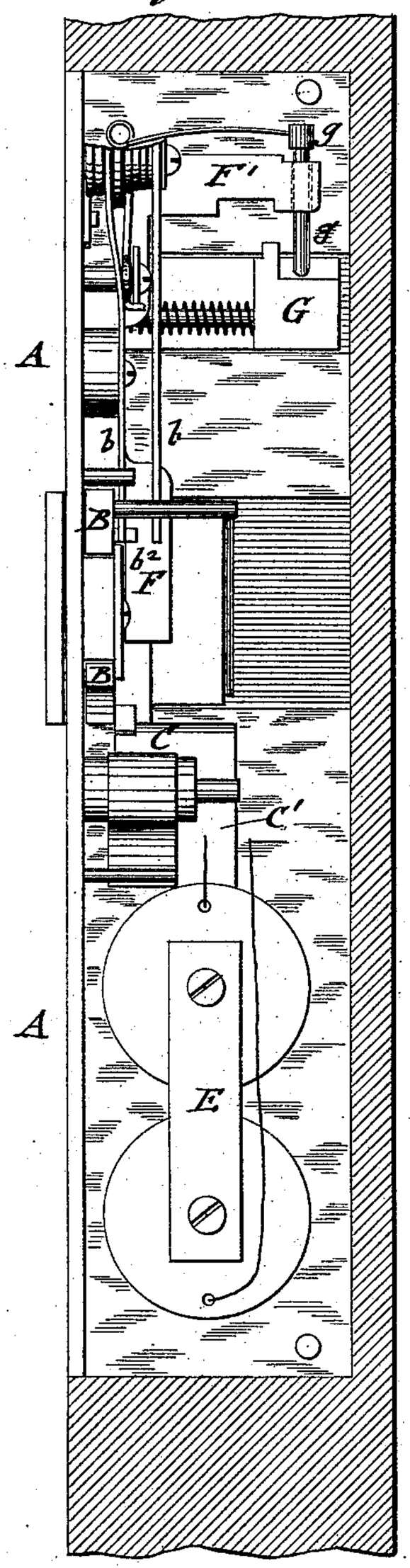


Fig. 4.

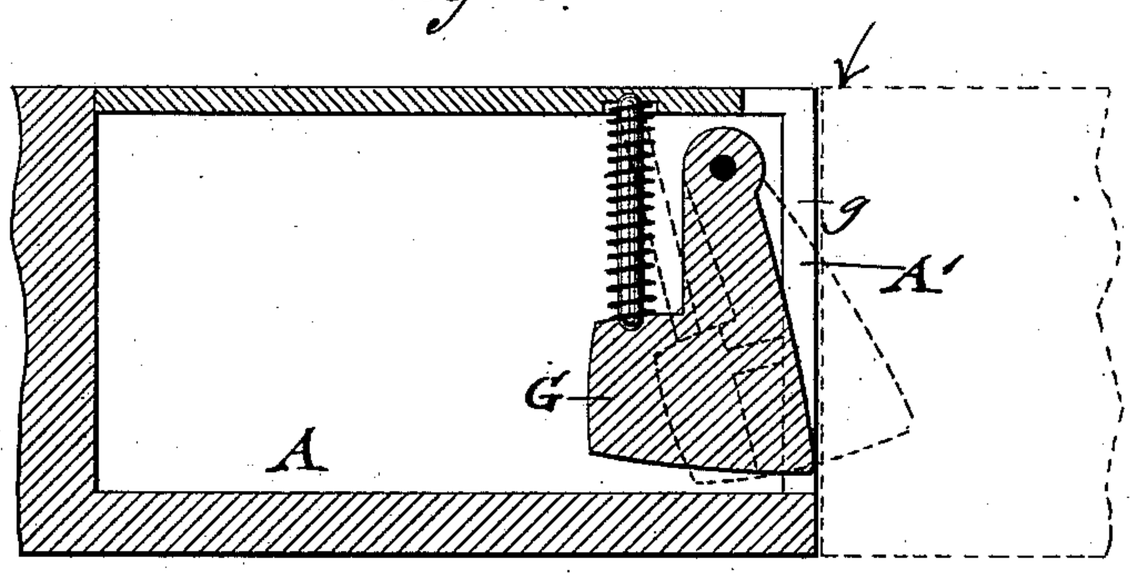
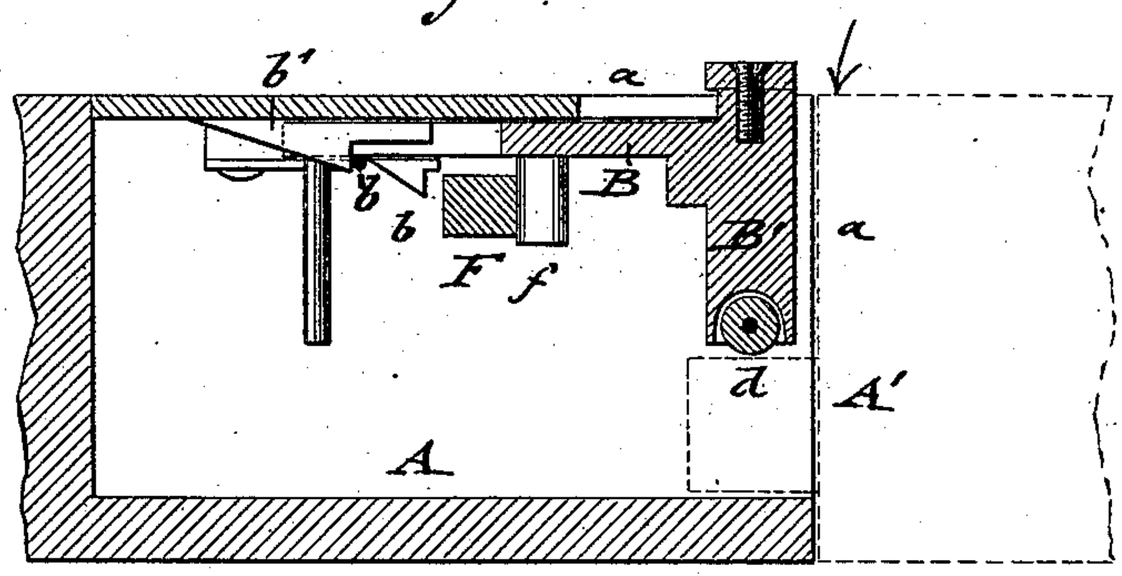


Fig. 5.



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UNITED STATES PATENT OFFICE.

CHARLES BEILE, OF BROOKLYN, ASSIGNOR TO BEILE & SULZER, OF NEW YORK, N. Y.

ELECTRIC DOOR-PULL.

SPECIFICATION forming part of Letters Patent No. 294,842, dated March 11, 1884.

Application filed August 2, 1883. (Model.)

To all whom it may concern:

Be it known that I, CHARLES BEILE, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Electric Door-Pulls, of which the following is a specification.

This invention has reference to an improved electric door-pull for French flat and apartment houses, by which the door can be opened with great facility from any story; and the invention consists of a pivoted and spring-pressed latch that is actuated by an electro-magnet or equivalent means, so as to release a recessed slide-piece that engages the spring-bolt of the door. The slide-piece is guided and acted upon by a suitable double spring in such a manner that the entire force of the spring acts upon the slide-piece when the same is released by the latch, while only one part of the spring acts upon the same when the slide-piece is locked by the latch, so as to reduce the tension exerted on the latter. The second half of the spring is released by suitable mechanism when the slide-piece is drawn back. The slide-piece is set so as to be locked by the latch by means of a fulcrumed lever, which is provided with a guided and spring-acted slide-pin at its upper end, that forms contact with a pivoted and spring-cushioned wedge-piece which projects through a recess of the face-plate of the casing when the door is open, and which is forced back when the door is closed.

In the accompanying drawings, Figures 1 and 2 represent side elevations of my improved electric door-pull, showing it respectively in position when the door is closed and when the same is opened. Fig. 3 is an end view of the same; and Figs. 4 and 5 are horizontal sections, respectively, on lines *x x* and *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts.

A A′ in the drawings represent the covering-plate of my electric door-pull, which plate is made of rectangular shape and secured to the door-jamb at the proper height, the jamb being provided with a recess of sufficient size for accommodating the working mechanisms of the door-pull. A slide-piece, B, is guided on the covering-plate A and in a recess, *a*, of the same, and acted upon at its inner end by a double spring, *b*, which exerts its full force upon the slide-piece B when the same is released so as to be drawn back by the spring *b*, but which exerts only half its force on the same when the slide-piece is locked in forward position, as shown in Fig. 1. In this case the pressure of one part of the spring *b* is removed from the slide-piece B, as the lower part of the spring is engaged by a beveled catch, *b′*, of the covering-plate A. When the slide-piece is released, the lower part of the spring *b* is released from the catch *b′* by a beveled catch, b^2, of the slide-piece B, as by the backward motion of the slide-piece B the catch b^2 passes below the lower part of the spring and lifts it clear of the catch *b′*, so as to throw thereby the full power of the spring *b* on the slide-piece and move the same quickly back, so as to release the spring-bolt of the door-lock. The slide-piece B is, like the covering-plate A, made of rectangular shape, and provided at the end of the rectangular part B′ with a roller, *d*, by which the friction between it and the spring-bolt of the door-lock is decreased. A recess, *e*, at the lower edge of the slide-piece B is engaged by projections *e′* of a pivoted and spring-actuated latch, C. This latch has an extension, C′, that is bent at right angles thereto, said extension forming the armature of an electro-magnet, E, which latter is secured to the covering-plate A below the latch C. Whenever a current is sent through the coils of the electro-magnet, the armature C′ is attracted by the same, and thereby the projection *e′* of latch C released from the recess *e* of the slide-piece B, which is thereby at liberty to be drawn back by the spring *b*, so as to be out of the way of the spring-bolt of the door-lock. The door is thereby free to swing into open position.

For the purpose of resetting the slide-piece B into forward position, so as to be retained by the latch C, the lower end of a fulcrumed lever, F, engages a projection, *f*, on the slide-piece B, while the upper end of the lever F has an angular offset, F′, that carries a guided and

spring-actuated slide-pin, *g*. The pin *g* passes along the beveled rear end of a spring-cushioned wedge-piece, G, that is pivoted to perforated lugs *g'* of the plate A, so as to be swung through a recess, g^2, of the plate A to the outside of the same. When the door is closed, it passes along the pivoted wedge-piece G and forces the same back, as shown in Fig. 1. The wedge-piece G acts upon the fulcrumed lever F and turns it on its pivot, whereby the slide-piece B is moved forward, so as to resume its position back of the spring-bolt of the lock when the door has arrived in entirely closed position, as shown in Fig. 5. In this figure the door is shown in closed position with its spring-bolt in dotted lines behind the sliding plate B B', which is in forward position, and prevents thereby the door from opening. By the forcing in of the wedge-piece G, the slide-pin *g* of the lever F is raised against the action of its spring, the wedge-piece G completing its inward motion after the slide-piece B has been thrown forward, as shown in Fig. 1. The motion of the wedge-piece G is thereby to some extent independent of that of the slide-piece B, whereby the fulcrumed lever F is enabled to follow the motion of the slide-piece B when the same is released by the withdrawal of the latch, so that the door can be opened, after which the wedge-piece G is thrown outward by its spring, so as to project beyond the covering-plate A and be in a position to be acted upon by the door when the same is closed again. The spring-pressed slide-pin *g* enables the wedge-piece G and slide-piece B to perform their functions at the proper time without blocking or impeding each other. This is an important feature of my improved door-pull, as thereby the regular and reliable working of the same is secured.

In place of the electro-magnet, any other equivalent mechanical or pneumatic means may be used to release the latch from the slide-piece B, though I prefer to use an electro-magnet in connection with a battery and contact-buttons in the different stories, as electric wires are less liable to get out of order than the wires and bell-cranks of the ordinary door-pulls, and can also be used in connection with electric bells for giving the signals for opening the doors.

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

1. The combination, with a recessed covering-plate, of a spring-actuated slide-piece, a pivoted and spring-actuated latch adapted to engage the slide-piece, means to release the latch from the slide-piece, a fulcrumed lever engaging the slide-piece and having at its upper end a guided and spring-pressed slide-pin, and a pivoted and spring-cushioned wedge-piece acting upon the slide-pin and its lever, substantially as and for the purpose set forth.

2. The combination of a recessed covering-plate, A, a spring-actuated slide-piece, B, a pivoted and spring-actuated latch, C, having an extension, C', said latch being adapted to engage the slide-piece, an electro-magnet, E, arranged close to the extension C', a fulcrumed lever, F, having an arm, F', at its upper end, a spring-pressed slide-pin, *g*, guided in said arm, and a pivoted and spring-cushioned wedge-piece, G, substantially as for the purpose set forth.

3. In a door-pull, the combination, with a covering-plate, A, having a beveled catch, *b'*, a slide-piece, B, having a beveled releasing-catch, b^2, a double spring, *b*, applied to said slide-piece, a latch, C, adapted to engage the slide-piece, means to release the latch from the slide-piece, a fulcrumed lever, F, a spring-pressed slide-pin, *g*, at the upper end of said lever, and a pivoted and spring-cushioned wedge-piece, G, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

CHARLES BEILE.

Witnesses:
LOUIS C. RAEGENER,
SIDNEY MANN.