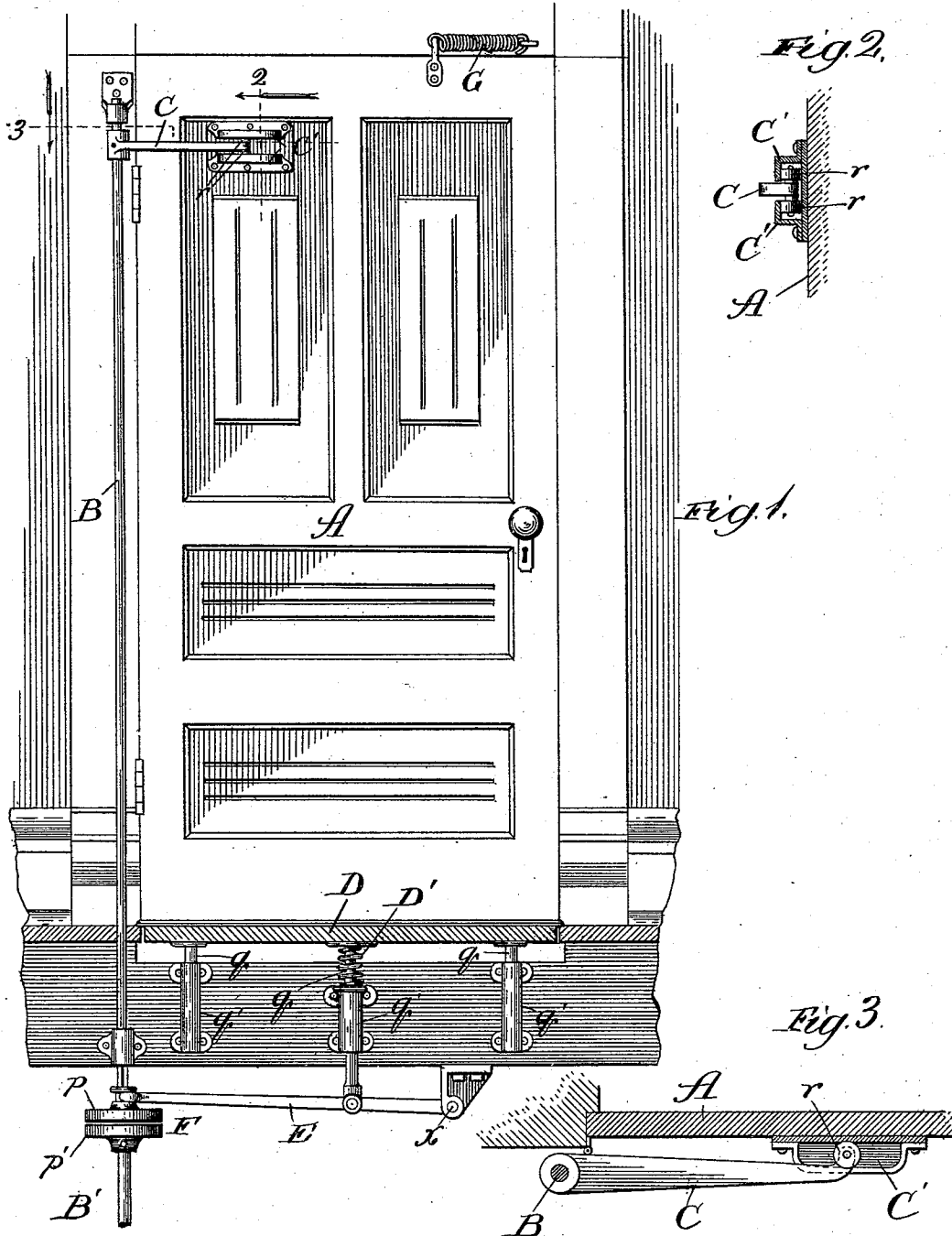


(No Model.)

O. H. HICKS.
DOOR OPERATING APPARATUS.

No. 572,299.

Patented Dec. 1, 1896.



Witnesses:
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UNITED STATES PATENT OFFICE.

OLIVER H. HICKS, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE HICKS-TROY
ELECTRIC DOOR COMPANY, OF SAME PLACE.

DOOR-OPERATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 572,299, dated December 1, 1896.

Application filed August 24, 1893. Serial No. 483,906. (No model.)

To all whom it may concern:

Be it known that I, OLIVER H. HICKS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Door-Operating Apparatus, of which the following is a specification.

The object of my invention is to provide a mechanically-working in contradistinction to an electrically-working door-operating apparatus, meaning thereby an apparatus connected with a door and actuated to open it by a person or object on approaching the door, exerting such a pressure on a platform, mat, plate on the door, or other primary actuating means convenient to the path of such person or object as will cause operation of the door-opening mechanism to open the door by engaging the loose member of a clutch connected with the door with another clutch member on a normally-rotating shaft.

The principle of operation of my present improvement will therefore be understood to be that of causing a door to be operated by pressure exerted on the primary actuating device (yielding platform or mat, plate, or the like) sufficient to produce thereby mechanically in contradistinction to electrically (according to Letters Patent to R. F. Troy, No. 461,122, dated October 13, 1891) the operation of means adapted to open the door without depending for such operation upon the pressure so exerted being sufficient to overcome the resistance of the door.

My invention consists in the general means adapted to be employed for my purpose; and it also consists in the more specific mechanism hereinafter described, and illustrated in the accompanying drawings, in which—

Figure 1 is a broken view showing in elevation a door provided with my improved mechanism for operating it. Figs. 2 and 3 are sections showing details of construction and taken, respectively, at the lines 2 and 3 on Fig. 1 and viewed as indicated by arrows.

A is a door, shown as of the variety hinged to swing in a horizontal plane, for which particular variety my improvement is primarily intended, though not necessarily limited to use therewith.

B is a rotatable shaft, shown as supported

in vertical position in suitable bearings adjacent to the hinged edge of the door, with which it is connected through the medium of an arm C, rigidly fastened at one end to the shaft to turn with it and having at its opposite end a sliding connection with the door through the medium of a slotted guide C' thereon, which confines an antifriction-roller on the end of the arm.

As the primary actuating means I show a platform D, yieldingly supported at the threshold and extending along the approach to the door, (at both sides, if desired, though it is only shown at one side, owing to the nature of the views selected for illustration.) The platform, as the primary actuating means, is intended, however, to be only suggestive and to represent one of various means for the same purpose, such as a yielding plate on the door, a yielding projection extending into the path of the approach to the door, and the like, all of which are equivalents of the platform.

The platform D is of adequately stiff material and is sustained by a resilient support, shown as a spring D' confined about a post *q* extending from the lower side of the center of the platform into a vertical guide-socket *q'*, and a number of the posts *q* and guides *q'* therefor are provided to tend the better to cause pressure on the platform at any point to depress it equally throughout.

As shown in Fig. 1, the central guide-post *q* extends below its guide-socket into engagement with a lever E, having one end fulcrumed at *x* below the floor and bifurcated at its opposite end where it engages the sliding member *p* of a friction-clutch F on the normally-stationary shaft B, the other member *p'* of the clutch being secured on the shaft B' of a suitable motor to rotate with it and cause rotation of the shaft B, when the clutch member *p* is brought into frictional engagement with the clutch member *p'*, as hereinafter described. The shaft B' should then be a normally-rotating shaft of or connected with a suitable motor, (not shown,) such as a steam, air, or electric engine. The lever, clutch, and shaft B' thus form, with the motor, motor mechanism connected with the door through the medium of the shaft B and arm C.

The apparatus thus described is operated by pressure on the platform D (such as would be exerted by a person stepping upon it in approaching the door to pass through the doorway) sufficient to depress the lever E to engage the clutch member *p* with its companion *p'*, whereby rotation of the shaft B ensues in the direction necessary to swing the arm C outward and thus open the door A; and the door is opened against the resistance of a spring G, shown as being fastened at its opposite ends, respectively, to the upper end of the door and the door-casing, whereby, when the pressure on the platform is removed by the person clearing it, thus permitting the spring D' to act to raise the platform to its normal position and with it the lever E, thereby separating the clutch member *p* from its companion member *p'*, the recoil of the spring G pulls the door to, though, as will be seen, it will readily reopen from any point in closing by pressure on the platform, so that a person need not await complete closure of the door before it may be operated to reopen. Should the pressure be sustained on the platform longer than is required to completely open the door, no injurious strain will be exerted by the continued rotation of the shaft B', for the member *p'* of the friction-clutch will then slip on the member *p*, owing

to the resistance opposing the completely-opened door.

What I claim as new, and desire to secure by Letters Patent, is—

1. In combination with a door, a rotary shaft carrying a clutch member and connected with the door to operate it by rotation of the shaft, a normally-rotating shaft carrying a clutch member, yielding primary actuating means, such as a spring-platform, and a lever connected with one of said clutch members and controlled by the movements of the primary actuating means to produce slipping engagement and disengagement of the clutch members, substantially as and for the purpose set forth.

2. In combination with a door, a shaft B, and arm C connecting the said shaft with the door, a rotary motor-shaft B', a friction-clutch F having its members respectively on the shafts B and B', a lever E engaging one of said clutch members, and yielding primary actuating means, such as the platform D controlled by a spring D', and carrying a post *q* connected with the lever, substantially as and for the purpose set forth.

OLIVER H. HICKS.

In presence of—

L. M. FOXCROFT,
W. N. WILLIAMS.