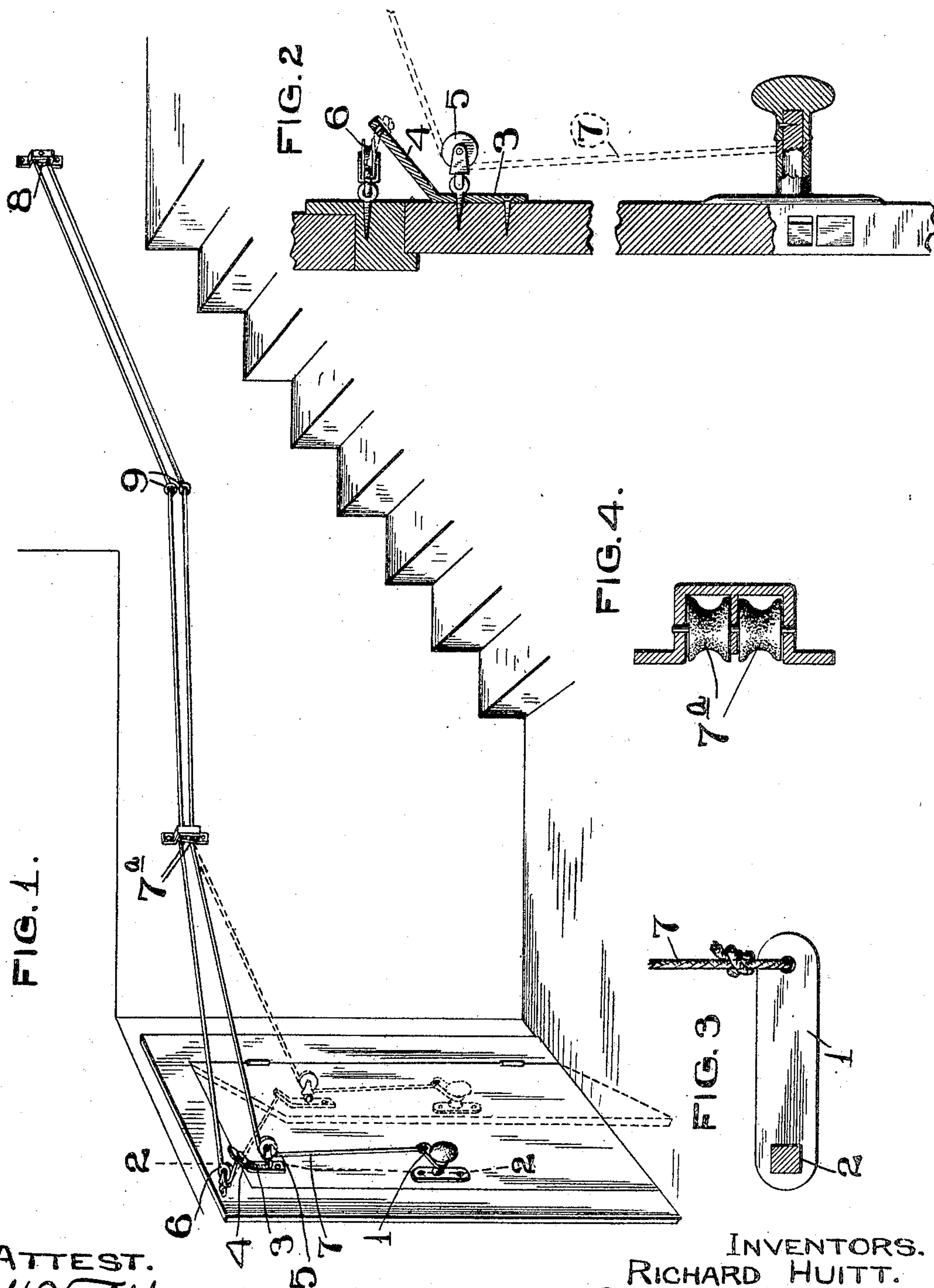


No. 822,129.

PATENTED MAY 29, 1906.

R. & C. C. HUITT.
DOOR OPENING AND CLOSING APPARATUS.

APPLICATION FILED NOV. 14, 1905.



ATTEST.

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UNITED STATES PATENT OFFICE.

RICHARD HUITT AND CHARLES C. HUITT, OF ST. LOUIS, MISSOURI.

DOOR OPENING AND CLOSING APPARATUS.

No. 822,129.

Specification of Letters Patent.

Patented May 29, 1906.

Application filed November 14, 1905. Serial No. 287,332.

To all whom it may concern:

Be it known that we, RICHARD HUITT and CHARLES C. HUITT, citizens of the United States, and residents of St. Louis, Missouri, have invented certain new and useful Improvements in Door Opening and Closing Apparatus, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

Our invention relates to a door opening and closing apparatus; and the object of our invention is to provide a simple and inexpensive apparatus to be used for opening and closing the street-doors of houses from a point within the house remote from said door or at the head of the stairs leading upwardly from the street-door.

Where our improved apparatus is located upon an entrance-door and leads from thence upstairs, it is not necessary for a person to descend the stairs to open or close the entrance-door, as the opening and closing operation may be readily accomplished by a person at the head of the stairs, thus saving much time in answering the summons of the person at the door.

To the above purposes our invention consists in certain novel features of construction and arrangement of parts, which will be hereinafter more fully set forth, pointed out in our claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a street or entrance door in a hallway with the stairs leading upwardly therefrom and showing our improved apparatus applied for use. Fig. 2 is an enlarged vertical section taken on the line 2 2 of Fig. 1. Fig. 3 is a side elevation of a lever that is located upon the door-latch-operating shaft. Fig. 4 is a detail section illustrating a pair of pulleys that we make use of as bearings for operating the cords or cables of our improved apparatus.

Referring by numerals to the accompanying drawings, 1 indicates a short lever that is provided at one end with a square aperture 2 to allow said lever to be positioned on the square operating-shaft of the door-latch, it being necessary to remove one of the door-knobs before slipping on the lever. This lever is positioned on the inside of the door and extends horizontally from the square shaft of the latch, and after it has been correctly posi-

tioned the door-knob is reseated upon the outer end of the operating-shaft.

Rigidly fixed to the inside face of the door, adjacent the upper edge thereof and in alignment with the door-knob, is a plate 3 the upper end of which is bent outwardly and upwardly away from the top edge of the door, as indicated by 4. Secured in any suitable manner to this plate 3 is a grooved pulley 5, and secured to the door-casing immediately behind the upper end of the outwardly-bent portion 4 of the plate 3 is a grooved pulley 6. A suitable flexible cord or cable 7 is secured at one end to the outer end of the lever 1 and extends from thence upwardly around behind the pulley 5 and from thence forwardly away from the door to and around suitable pulleys, such as 7^a, that are secured to the wall or to the ceiling of the hall or room into which the door opens. From thence the cord or cable may be led to any point desired—for instance, upstairs, as shown in Fig. 1—and at the upper end of the stairway the cord is passed around a grooved pulley 8 and from thence is led backwardly downstairs, around suitable pulleys, to and around the grooved pulley 6, the end being secured to the upper end of the portion 4 of the plate 3.

It will be readily understood that by the use of properly-located grooved pulleys, such as 7, or eyelets, such as 9, the operating cord or cable can be extended to any point desired in the house.

The operation of our improved apparatus is as follows: When it is desired to open the door, the operator pulls upon that portion of the cord or cable that leads direct to the lever 1, and in so doing the outer end of the lever is elevated and the shaft of the door-latch is partially rotated, which movement unlatches the door, and the continued pull upon this portion of the cord or cable will pull upon the grooved pulley 5, and consequently swing the door open. At the same time the opposite half of the cord or cable, which is secured at its end to the upper end of the plate 3, will move in an opposite direction to that part of the cord that is pulled, and thus a portion of the cord or cable will travel around the grooved pulley 6 to correspond with the length of the cord or cable that has been pulled forward by the operator in opening the door. When it is desired to close the door, the operator pulls upon the portion of

the cord or cable that leads direct to the upper end of the plate 3 and a reverse movement of the cord or cable takes place and the door is swung shut. A door opening and
 5 closing apparatus of our improved construction is simple, inexpensive, very easily applied to all forms of doors, and much time and labor are saved in the use of the improved apparatus.

10 We claim—

1. In an apparatus of the class described, the combination with a door, of a lever detachably fixed to the door-latch-operating shaft, a bracket fixed to the top of the door, a
 15 pulley secured to the door adjacent the bracket, a pulley secured to the door-casing adjacent the point occupied by the bracket, and an operating-cable secured at one end to the lever and at its opposite end to the
 20 bracket said cable being extended to a point remote from the door; substantially as specified.

2. In an apparatus of the class described, the combination with a door, of a lever secured to the door-latch-operating shaft, a
 25 bracket secured to the inner face of the door, a cable secured at one end to the lever and at the opposite end to the bracket, and suitably-

located guides over which said cable passes to a convenient point; substantially as specified. 30

3. In an apparatus of the class described, the combination with a door, of a lever detachably fixed to and extending horizontally from the door-latch-operating shaft, a bracket
 35 fixed to the inner face of the door and extending upwardly and outwardly from the top edge of said door which bracket is in vertical alinement with the door-knob, a grooved pulley carried by said bracket, a grooved
 40 pulley secured to the door-casing to the rear of said bracket, a cable secured at one end to the outer end of the lever and at its opposite end to the upper end of the bracket, which
 45 cable passes over the grooved pulleys, said cable being extended to a point remote from the door; substantially as specified.

In testimony whereof we have signed our names to this specification in presence of two subscribing witnesses.

RICHARD HUITT.
 CHARLES C. HUITT.

Witnesses:

M. P. SMITH,
 JOHN C. HIGDON.