

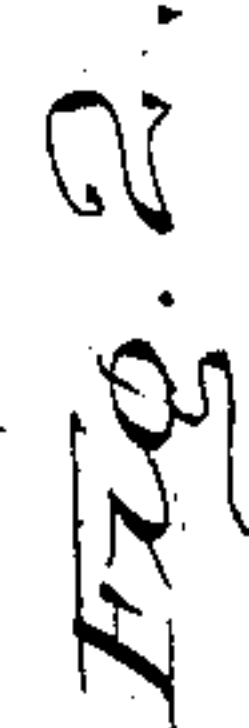
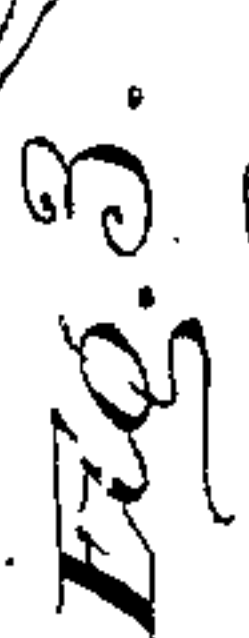
No. 756,321.

PATENTED APR. 5, 1904.

H. BITNER.  
ELEVATOR DOOR.

APPLICATION FILED JUNE 29, 1903.

NO MODEL.



Witnesses:  
Russell Wiles.  
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# UNITED STATES PATENT OFFICE.

HARRY BITNER, OF BERWYN, ILLINOIS.

## ELEVATOR-DOOR.

SPECIFICATION forming part of Letters Patent No. 756,321, dated April 5, 1904.

Application filed June 29, 1903. Serial No. 163,541. (No model.)

*To all whom it may concern:*

Be it known that I, HARRY BITNER, a citizen of the United States of America, residing at Berwyn, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Elevator-Doors, of which the following is a specification.

My invention relates to certain new and useful improvements in elevator-doors; and its object is to produce a device of the class wherein two doors placed side by side close an opening in the wall or elevator inclosure and run one behind the other and behind the wall to open the same.

My improved device possesses certain advantages of construction and operation which will be fully apparent in the course of this specification.

To this end my invention consists in certain novel features of construction which are clearly shown in the accompanying drawings and described in the specification.

In the aforesaid drawings, Figure 1 is an elevation of the upper part of two doors, showing the mechanism connecting them looking from the inside of the well. Fig. 2 is a horizontal section in the line 2 2 of Fig. 1. Fig. 3 is a section in the line 3 3 of Fig. 1 looking in the direction of the arrow, and Fig. 4 is a view of one of the rollers and portions of the racks shown in Fig. 1 looking from the opposite side.

Referring now to these drawings, A represents the wall of the inclosure. Upon the wall A are supported two tracks  $a$   $a'$ , the track  $a$  extending across the doorway and to a distance equal to the width of one of the doors beyond the same. The track  $a$  is supported upon the wall by brackets  $a^2$ , projecting from the wall and secured to the track at or near its ends and by other brackets  $a^3$ , (shown in the drawings,) which extend upward from the track  $a$  to a point above the path traveled by the rollers of the doors and thence to the wall, so as to form overhanging supports for the track under which the door-hangers presently to be described can pass. The track  $a'$  is supported at one end by one of the brackets  $a^2$  and by other brackets  $a^4$ , which extend

from the wall to the track, supporting it from the inside.

Upon the track  $a'$  is hung the slow door B, the hangers  $b$  of which extend upward from the inner edge (that toward the well) of the same and bear pulleys  $b'$   $b^2$  upon their outer sides. The slow door, in other words, runs inside the track  $a'$ .

Upon the track  $a$  is hung the fast door C by hangers  $c$ , which extend upward from the outer side of the same, these hangers bearing pulleys  $c'$  upon their inner sides, so that the fast door C is supported between the two tracks. In this way the two doors are supported upon independent tracks, and yet they run closer together than can readily be accomplished with other arrangements of the tracks, for the reason that the doors run between the two tracks, one on the outside of the inner track and the other on the inside of the outer track. This arrangement is greatly superior to others in use, for the reason that it is more compact and can be more readily adapted to various synchronizing devices.

The synchronizing or connecting device by which the two doors are also connected together, so as to reach their open and closed positions at one and the same time, will now be described. Adjacent to the track  $a'$  and parallel therewith is secured a rack-bar D. The hangers  $c$  upon the fast door C are prolonged above the pulleys  $c'$  and extend toward the wall, as will be clearly seen in Fig. 3, and at their ends and in substantially the same plane with the rack-bar D they bear a rack-bar E. A plurality of pins  $f$  are provided upon the pulley  $b^2$ , which form therewith substantially a pinion. These pinions  $f$  fall between and engage with the teeth on the rack-bar D and the rack-bar E.

The operation of the device will now be readily apparent. When it is desired to open the door, the fast door is pushed to the left. This of course carries the rack-bar E to the left, and consequently rotates the pulley  $b^2$  through the medium of the pins  $f$ . As this pulley is rotated the pins  $f$  engage with the teeth on the rack-bar D, carrying the door B also to the left, but of course at half the



speed of the fast door C. In this way the two doors reach the ends of their respective movements at the same time.

This synchronizing device is particularly simple and efficient. It causes the two doors to arrive positively without a possibility of error at the end of their movement at the proper time. Furthermore, it is practically free from noise and being situated along the top of the doors and doorway is entirely out of sight from the hallway. This is of particular advantage when the doors and well are made of the now very common ornamental iron-work.

I realize that considerable variations are possible in the details of this construction without departing from the spirit of the invention, and I therefore do not intend to limit myself to the specific form herein shown and described, except as pointed out in the claims.

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

1. The combination with the wall of an inclosure having a doorway therein, of two tracks secured to the wall, two doors, hangers upon, and supporting each of said doors, running upon the respective tracks, a rack-bar secured to the wall, a second rack-bar secured to one of the doors, and a pinion upon the other door between and in mesh with the two rack-bars.

2. The combination with the wall of an inclosure having a doorway therein, a track, a series of brackets extending from said track to the wall and supporting the track from the inside, a second track, a second series of brackets extending upward from the outside of said track and thence across to the wall, supporting said track from the outside, two doors, one upon each of said tracks, the hangers of said doors running between said tracks and underneath the brackets of said second track,

and mechanism above the tracks for synchronizing the movements of said two doors.

3. The combination with the wall of an inclosure having a doorway therein, of a track secured to the wall from the inside, a second track secured to the wall from the outside, a door running upon said first track, a rack-bar adjacent to said first track, a pinion on said first door, engaging with said rack-bar, a second door, hangers thereon, the pulleys of which run upon said second track, projecting arms upon said hangers, extending toward the wall, and a rack-bar supported by said arms in mesh with said pinion.

4. The combination with the wall of an inclosure, of two doors, hangers containing rollers for said doors, tracks adapted to carry said rollers, a rack-bar secured to the wall, a rack-bar secured to one of the doors, and a pinion secured to the other door and in mesh with both racks, the weight of the doors being carried by the hanger-rollers and the pinion serving to cause one door to move faster than the other.

5. The combination with the wall of an inclosure, having a doorway therein, of two doors, hangers for said doors, containing rollers, door-supporting tracks adapted to carry the rollers of said hangers and support the weight of the doors, racks upon the respective doors, and gearing interposed between said racks adapted to cause one door to move faster than the other.

In witness whereof I have signed the above application for Letters Patent, at Chicago, in the county of Cook and State of Illinois, this 18th day of June, A. D. 1903.

HARRY BITNER.

Witnesses:

RUSSELL WILES,  
CHAS. O. SHERVEY.