

No. 735,055.

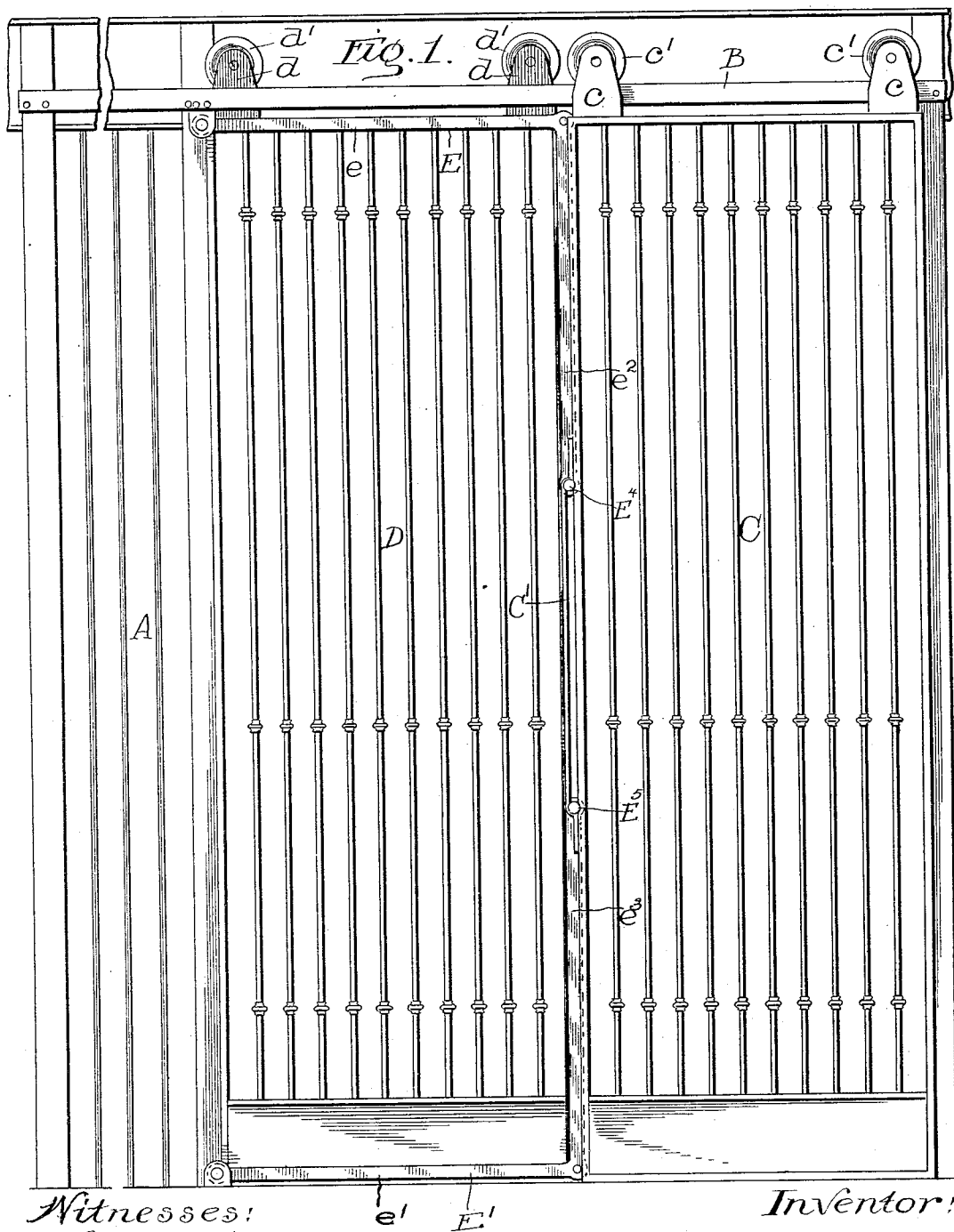
PATENTED AUG. 4, 1903.

H. BITNER.
ELEVATOR DOOR.

APPLICATION FILED MAR. 2, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:

Russell Wiles
Chas. O. Shurway

Inventor:

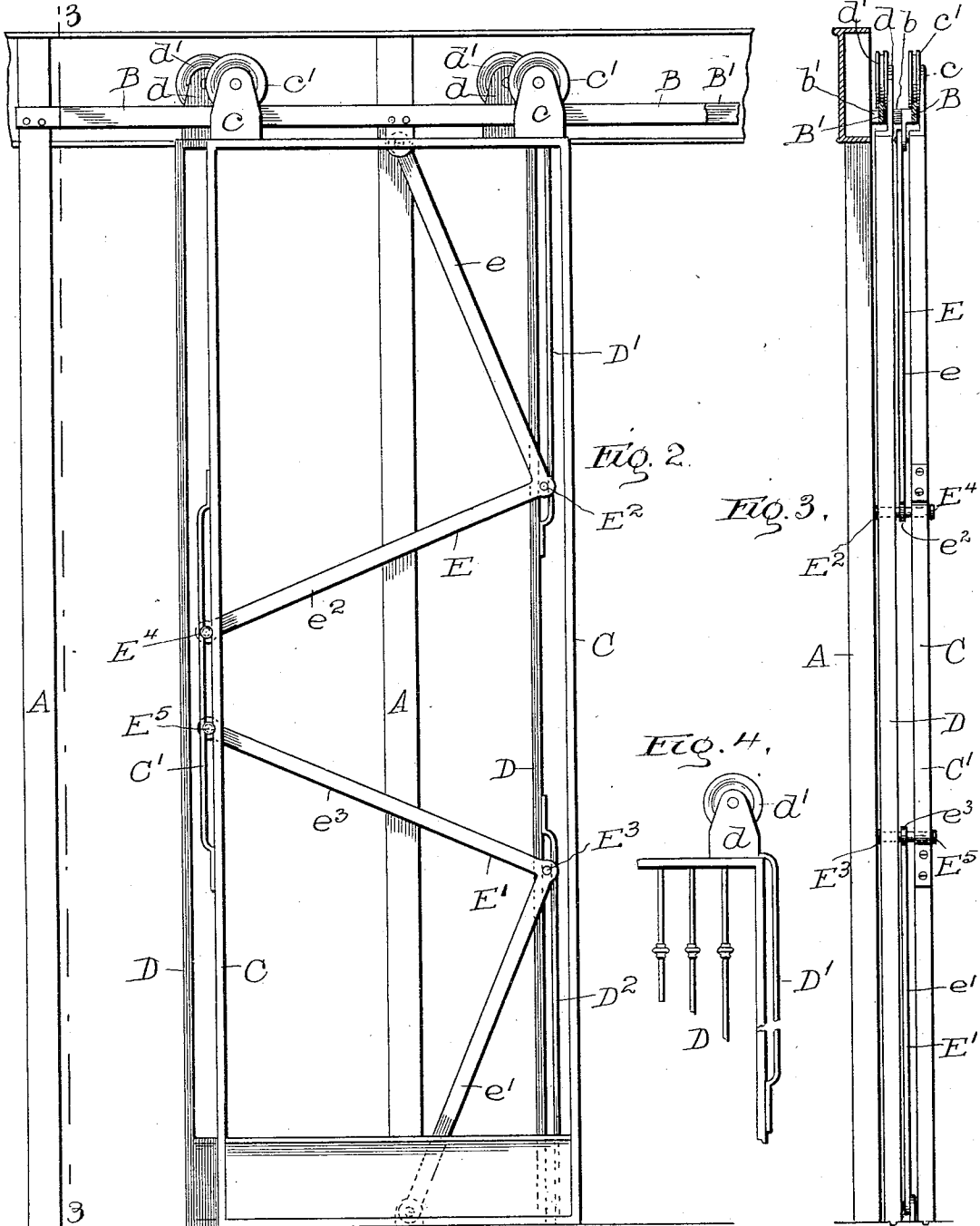
Harry Bitner

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2 SHEETS—SHEET 2.



Witnesses:
Russell Wiles
Chas. O. Sherry

Inventor:
Harry Bitner

UNITED STATES PATENT OFFICE.

HARRY BITNER, OF BERWYN, ILLINOIS.

ELEVATOR-DOOR.

SPECIFICATION forming part of Letters Patent No. 735,055, dated August 4, 1903.

Application filed March 2, 1903. Serial No. 145,651. (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 which shall cause two elevator-doors of the type wherein the two doors together close an opening and which slide one behind the other and behind the wall of the inclosure to move at the proper relative speeds, so as to reach their open and closed positions at the same time.

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

In the aforesaid drawings, Figure 1 is an elevation of a pair of doors and a portion of the wall of the inclosure, the doors being provided with my improved mechanism. Fig. 2 is a view of the frames of the two doors nearing their closed position and showing the connecting device in operation. Fig. 3 is a section in the line 3 3 of Fig. 2, showing the doors opened to their fullest extent; and Fig. 4 is an elevation of one corner of the slow door.

Referring to the drawings, A is the wall of the elevator-well, the said wall supporting two tracks B B' by brackets b b', respectively. Upon the track B is supported a fast door C by hangers c and rollers c', while on the track B' is supported a slow door D by hangers d and rollers d'. Upon the wall A adjacent to the upper line of the doors and to the floor are pivoted two levers E E', similar each to each. These levers are composed of two arms at right angles to each other, the arms being indicated in the drawings by e e', adjacent to the pivots of the levers E E', respectively, and e² e³ at right angles to these first-mentioned portions. Rails D D' are secured to the top and bottom of the right-hand edge of the slow door, these rails forming with the adjacent edge of the door vertical guideways, and in these guideways run rollers E² E³, respectively, said rollers being mounted at the angles of the levers E E', respectively. A similar rail C' is se-

cured to the left-hand edge of the fast door, forming a similar vertical guideway with the adjacent edge of said fast door, in which guideway run rollers E⁴ E⁵, mounted upon the ends of the arms e² e³ of the levers E E', respectively. The doors themselves are preferably composed of an outer frame in which is secured the ornamental structure which, together with the frame, makes up the complete door.

The operation of this device will now be readily apparent. When the fast door is pushed to the left to open it, it bears upon the rollers E⁴ E⁵, swinging the levers E E' upon their pivots through the position shown in Fig. 2 until the arms e² e³ are horizontal. As the levers swing in this way the rollers E² E³ at the angles of the levers are drawn from the position shown in Fig. 1 through that shown in Fig. 2 until they lie in the same vertical line with the pivots of these levers. Inasmuch as these rollers E² E³ travel in guideways upon the slow door the slow door is forced open and reaches its wide-open position at the same time as does the fast door.

It is obvious, of course, that, if desired, one of the levers and the corresponding guideway may be omitted from the device; but I consider it advantageous to have a connecting device both at the top and bottom of the doors, so that both ends of the doors shall be positively moved and the doors cannot in any way get out of alinement and bind on the tracks. The use of a device of this sort both at the top and bottom of the doors makes it possible to use a much narrower door than can be used with any connecting device which engages with only one point on the door. This particular form of connecting device is especially advantageous not only in the fact that it can be multiplied, as shown in the drawings, so as to afford the above advantages which the double style of connecting device affords, but because when the doors are in the closed position the lever lies entirely behind the framework of the doors and is therefore practically invisible both from in front and behind. This feature is a particularly advantageous one when ornamental ironwork or similar doors are used and it is undesirable to have the operating device visible. I realize that considerable variations can be

made in the details of this construction, and I do not, therefore, desire to limit myself to the specific construction described.

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

1. The combination with the wall of an inclosure having a suitable doorway and two doors adapted, when extended, to close said doorway and slidable one behind the other and behind the wall to open the same, of a right-angled lever pivoted to the wall adjacent to the edge of the doorway and having running engagement with both doors, the two arms of said lever lying when the doors are closed substantially in line with the frames of the doors.

2. The combination with the wall of an inclosure having a suitable doorway and two doors adapted, when extended, to close said doorway and slidable one behind the other and behind the wall to open the same, of a right-angled lever pivoted to the wall of the inclosure adjacent to the doorway, a vertical guideway upon each of the doors and suitable rollers at the end and at the angle in said lever, engaging with said guideways, the two arms of said lever lying substantially in line with the frames of the doors when the doors are closed.

3. The combination with the wall of an inclosure having a suitable doorway and two doors adapted when extended, to close said doorway and slidable one behind the other and behind the wall to open the same, of a connection between said three parts, *i. e.* the two doors and the wall, consisting of two right-angled levers pivoted to one of said parts and having means of running engagement with the other two parts, the arms of said levers lying parallel with the margin of one of the doors, when the doors are closed.

4. The combination with the wall of an inclosure having a suitable doorway and two

doors adapted, when extended, to close said doorway and slidable one behind the other and behind the wall to open the same, of two right-angled levers pivoted on the wall adjacent to the top and bottom of the doors, vertical guideways upon the doors and rollers at the angles and free ends of said levers, engaging with the said guideways, said levers lying behind the frames of the doors when the doors are closed.

5. The combination with the wall of an inclosure having a suitable doorway and two doors adapted when extended to close said doorway and slidable one behind the other and behind the wall to open the same, of two connecting devices causing the doors to move simultaneously and at different speeds to reach the open and closed positions at the same time, said two connecting devices being arranged respectively at substantially the tops and bottoms of the doors, whereby the parallelism of the doors is maintained in all their positions.

6. The combination with the wall of an inclosure having a suitable doorway and two doors adapted, when extended, to close said doorway and slidable one behind the other and behind the wall to open the same, of a connecting device between the doors proportioned and arranged to lie substantially in line with the outer framework of the doors when the latter are closed and operating to cause the doors to move simultaneously and at different speeds to reach the open and closed positions together.

In witness whereof I have signed the above application for Letters Patent, at Chicago, in the county of Cook and State of Illinois, this 10th day of February, A. D. 1903.

HARRY BITNER.

Witnesses:

RUSSELL WILES,
CHAS. O. SHERVEY.