

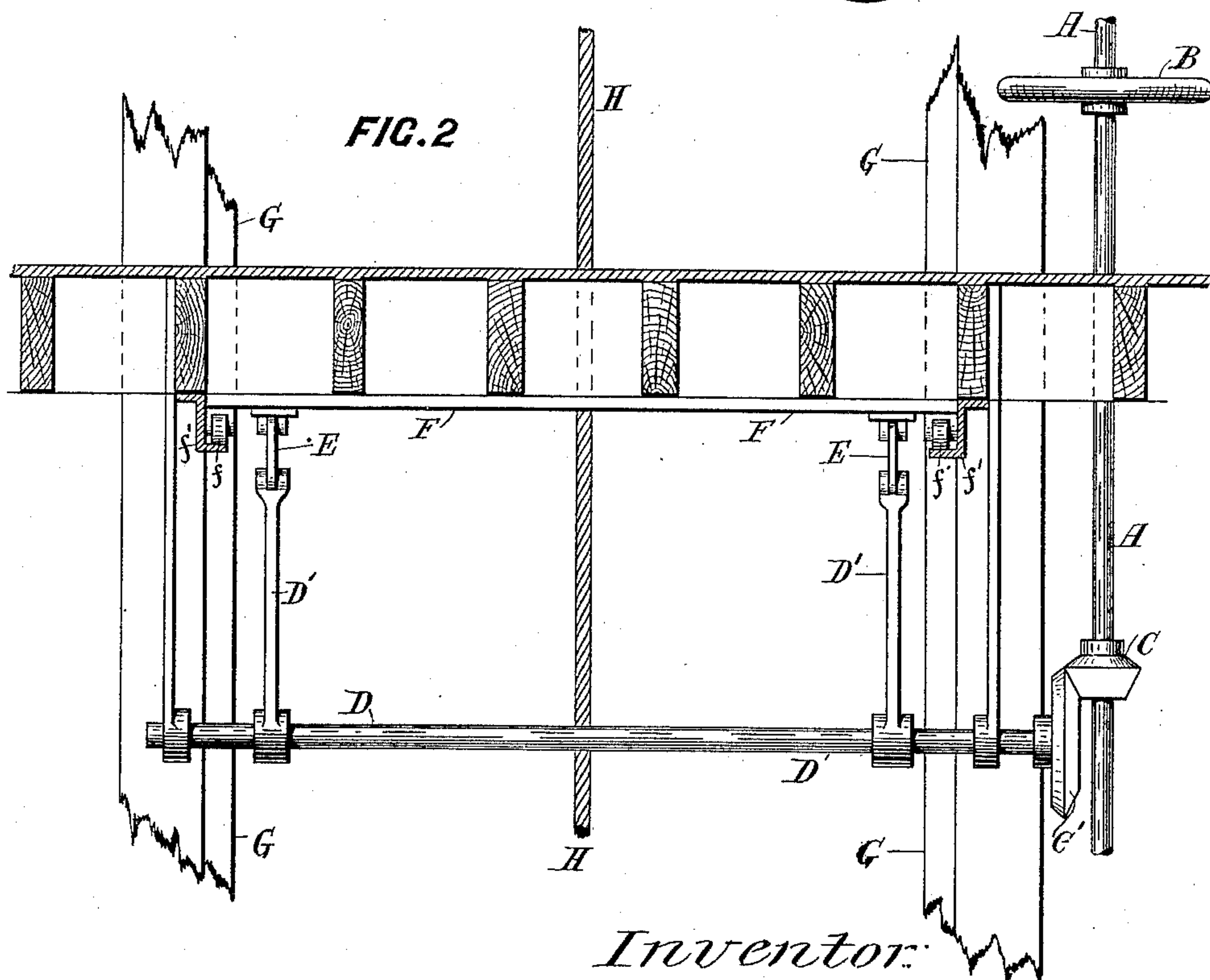
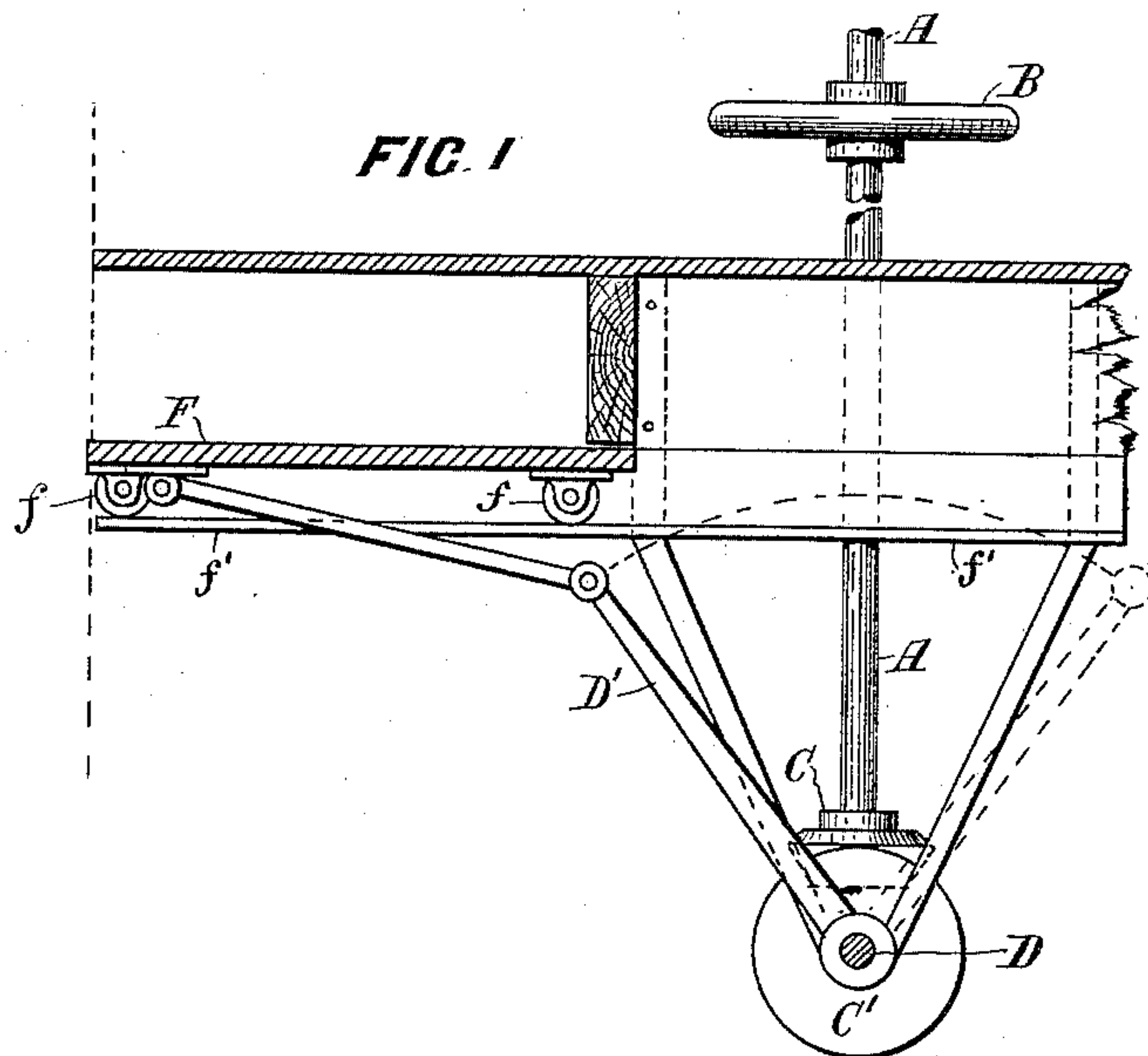
(No Model.)

R. HALLENSTEIN.

DEVICE FOR OPERATING DOORS TO HATCHWAYS.

No. 465,850.

Patented Dec. 29, 1891.



Inventor:

Witnesses:

E. B. Bolton

A. B. Sumner

Ruben Hallenstein

By Richard A. [Signature]

his Attorneys.

UNITED STATES PATENT OFFICE.

REUBEN HALLENSTEIN, OF MELBOURNE, VICTORIA.

DEVICE FOR OPERATING DOORS TO HATCHWAYS.

SPECIFICATION forming part of Letters Patent No. 465,850, dated December 29, 1891.

Application filed May 18, 1891. Serial No. 393,212. (No model.) Patented in England October 1, 1890, No. 15,541; in Belgium October 1, 1890, No. 92,171; in Turkey October 1, 1890, No. 196; in France October 1, 1890, No. 208,578; in Italy November 13, 1890, LVI, 82; in Spain November 15, 1890, No. 11,291; in Brazil December 16, 1890, No. 1,018; in Cape of Good Hope February 11, 1891, and in Austria-Hungary February 12, 1891, No. 44,193 and No. 77,829.

To all whom it may concern:

Be it known that I, REUBEN HALLENSTEIN, merchant, of Melbourne, in the Colony of Victoria, have invented certain new and useful
5 Improved Appliances for Operating Sliding Doors Closing Lift or Stairway Openings in Floors of Buildings, (patented in Great Britain October 1, 1890, No. 15,541; in Belgium October 1, 1890, No. 92,171; in Austria-Hungary February 12, 1891, No. 44,193 and No. 77,829; in Turkey October 1, 1890, No. 196; in France October 1, 1890, No. 208,578; in Italy November 13, 1890, Vol. LVI, 82; in Spain November 15, 1890, No. 11,291; in Brazil December 16, 1890, No. 1,018, and in Cape of Good Hope February 11, 1891, folio 666,) of
15 which the following is a specification.

This invention is specially adapted for opening and closing simultaneously lift or
20 stairway openings in lofty buildings by means of sliding doors. This is effected by means of a vertical shaft placed parallel to but outside the lift or stairway and running from the top to the bottom of the building. The shaft
25 is provided on each floor with a hand-wheel, by means of which the shaft may be rotated from any floor. A bevel-pinion is keyed on the shaft below each floor. Each bevel-pinion gears with a bevel-wheel on a transverse
30 shaft below each floor, and by means of this transverse shaft motion is communicated to the connections, whereby the sliding doors are opened or closed.

In the accompanying drawings, Figure 1 is
35 a sectional side elevation showing the apparatus as applied to a lift-opening. Fig. 2 is a sectional front elevation of the same.

In Figs. 1 and 2, A is a vertical hand-shaft continued from floor to floor throughout the
40 height of the building.

B B are the hand-wheels, whereby the shaft A may be operated from any floor.

C is a bevel-pinion keyed on the shaft A below each floor and gearing with the bevel-
45 wheel C', placed at the end of a transverse shaft D, which is provided with lever-arms

D' D', to the extremities of which are articulated connecting-rods E E, the opposite ends of which are articulated to the under side of the sliding door F, that is supported on rollers f, running on guides f'.

G G are the cage-guides, and H is the lift-rope.

The *modus operandi* is as follows: The attendant if he wishes to open or close the doors
55 from any floor will turn the hand-wheel nearest to him, thereby rotating the vertical shaft A and communicating motion to the transverse shaft D through the bevel-gearing C C'. This will cause the lever-arms D' D' to move
60 in the arc indicated by dotted lines in Fig. 1, and as the lever-arms D' D' are connected by the connecting-rods E E to the sliding door F the latter is caused to slide in the required
65 direction beneath the floor.

It is manifest that, instead of the lever-arms
70 and connecting-rods, as above described, pinions on the transverse shaft gearing into racks on the under side of the sliding door may be substituted.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

In a device for operating sliding doors, the combination, with vertical shaft A, provided
75 with hand-wheel B and pinion C on said shaft, of transverse shaft D, pinion C', mounted on one end thereby and engaging said pinion C, arms D', attached to said shaft D, and connecting-rods E E, attached at one end to arms
80 D' and at the other end articulated to the under side of the sliding door, substantially as set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

REUBEN HALLENSTEIN.

Witnesses.

JONATHAN BEAR,

Bank Place, Melbourne, Patent Agent.

JOSEPH H. BUSH,

67 King Street, Melbourne.