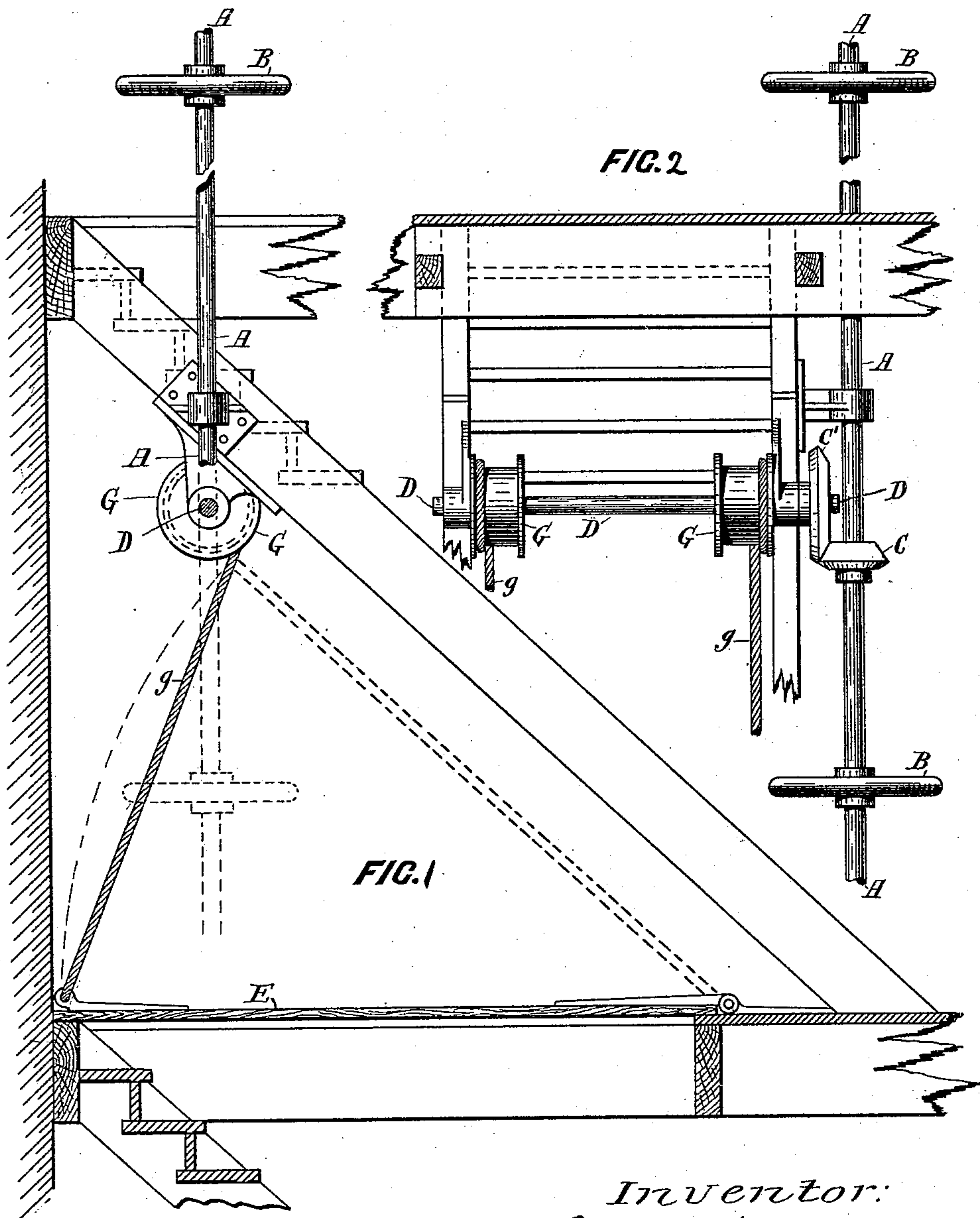


(No Model.)

R. HALLENSTEIN.  
DOOR OPERATING DEVICE.

No. 483,916.

Patented Oct. 4, 1892.



Witnesses:  
E. R. Bolton  
A. B. Sumner.

Inventor:  
Reuben Hallenstein  
By Richard [Signature]  
His Attorneys.

# UNITED STATES PATENT OFFICE.

REUBEN HALLENSTEIN, OF MELBOURNE, VICTORIA.

## DOOR-OPERATING DEVICE.

SPECIFICATION forming part of Letters Patent No. 483,916, dated October 4, 1892.

Application filed May 18, 1891. Serial No. 393,213. (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 4, 1891, No. 666, 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, Australia, have invented certain new and useful Improved Appliances for Operating Doors Closing Lift or Stairway Openings in Floors of Buildings, of which the following is a specification.

This invention has been patented to me 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 4, 1891, No. 666.

This invention is specially adapted for opening and closing simultaneously lift or stairway openings in lofty buildings by means of hinged or folding doors. This is effected by means of a vertical shaft placed parallel to but outside the lift or stairways and running from the top to the bottom of the building. The shaft 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 onto the shaft at each floor, each bevel-pinion gearing with a bevel-wheel on a transverse shaft, from which motion is communicated to the hinged door.

In the accompanying drawings, Figure 1 is a sectional side elevation of a stairway-opening operated indirectly from a transverse shaft by means of winding-gear. Fig. 2 is a partial end elevation of the same.

A is a vertical hand-shaft continued from floor to floor throughout the height of a building.

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

C is a bevel-pinion keyed on the shaft A and gearing with the bevel-wheel C', placed on the end of a transverse shaft D.

The transverse shaft D carries winding-drums G G, provided with ropes *g g*, the opposite ends of which are made fast to the upper side of the doors E. When the vertical shaft A is rotated, motion is imparted through the bevel-gearing C C' to the transverse shaft D and winding-drums G G, and the door will consequently be raised by the ropes *g g* to the position shown by dotted lines in Fig. 1. It will be manifest that when the vertical shaft A is rotated from any floor by any hand-wheel B the whole of the doors connected therewith will be simultaneously opened or closed.

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

In combination, the hatchway-door hinged at one edge, a shaft journaled above the door and extending parallel with the free edge of the same, the two drums, one at each end of the said shaft, the flexible connections from the drums to the free edge of the door near the corners thereof, and the means for operating the horizontal drum-shaft, consisting of the vertical shaft and the gearing between the same and the horizontal shaft, substantially as described.

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

REUBEN HALLENSTEIN.

Witnesses:

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