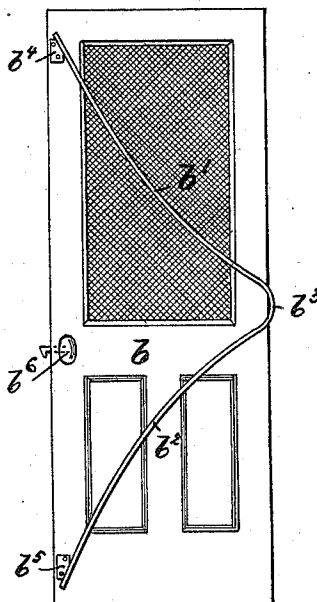
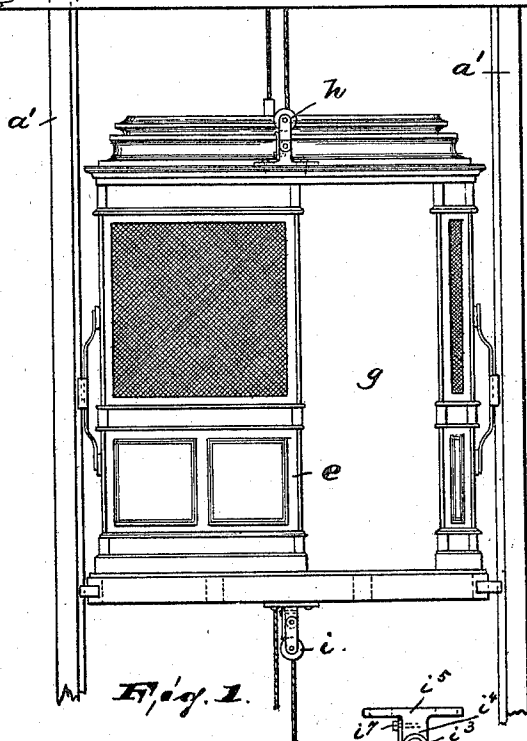
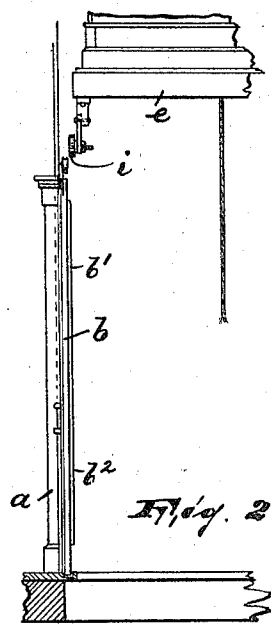
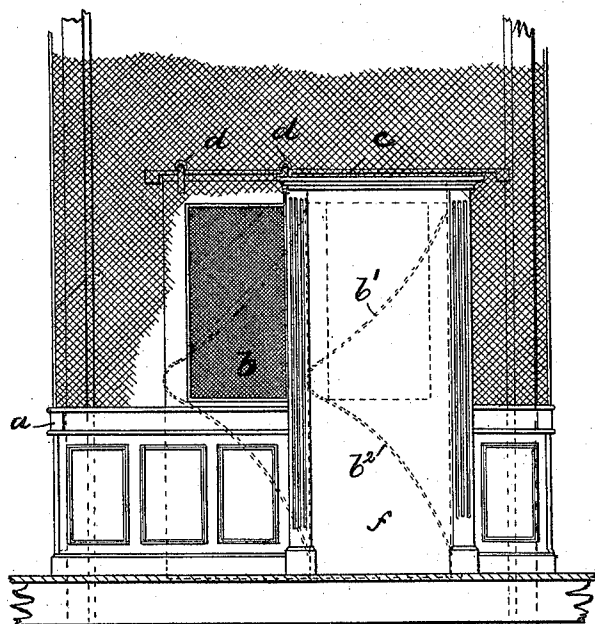


(No Model.)

W. J. KNIGHT.
ELEVATOR DOOR CLOSING MECHANISM.

No. 579,153.

Patented Mar. 23, 1897.



WITNESSES:

Wm. D. Bell.
A. D. Krumpholtz

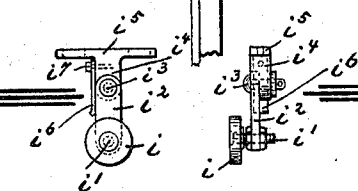


Fig. 4. Fig. 5.

INVENTOR :

Walter J. Knight

BY Partner & Co ATTY'S.

UNITED STATES PATENT OFFICE.

WALTER J. KNIGHT, OF NEWARK, NEW JERSEY.

ELEVATOR-DOOR-CLOSING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 579,153, dated March 23, 1897.

Application filed December 3, 1896. Serial No. 614,280. (No model.)

To all whom it may concern:

Be it known that I, WALTER J. KNIGHT, a citizen of the United States, residing in Newark, county of Essex, and State of New Jersey, have invented certain new and useful Improvements in Elevator-Door-Closing Mechanism; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to provide elevators with means for automatically closing the doors leading to the said elevators, and which doors, by oversight or mistake, have been left open, thus avoiding accidents; being simple, strong, and durable in construction and reliable in operation.

The invention consists in the improved automatic closing means for the elevator-doors and in the combination and arrangement of the various parts thereof, substantially as will be hereinafter more fully described, and finally embodied in the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several views, Figure 1 is a front elevation of a portion of an elevator shaft and car provided with my improvements; Fig. 2, a detail side elevation of a portion of the elevator-shaft and of a portion of the car, the latter being illustrated in a position different from that in Fig. 1; Fig. 3, an enlarged detail inside view of the elevator-door; and Figs. 4 and 5, enlarged front and side elevations, respectively, of the antifiction-roller and its support used in connection with the same.

In said drawings, *a* represents a portion of an elevator-shaft having the rails *a* for guiding the car *e* in its upward and downward movements. The car *e* is provided with the entrance *g*, corresponding with the entrance *f* of the elevator-shaft, which latter is adapted to be closed by the door *b*, slidingly arranged by means of the rollers *d d* on the rail

or track *c*, all of the usual and well-known construction.

On the inside of the door *b* is secured, by means of the brackets *b⁴* and *b⁵* or in any desired manner, a flat metal strip *b³*, forming the inclined planes *b¹* and *b²*, connecting at about the center of the door and opposite the locking mechanism *b⁶* of the same. To the top and bottom of the car *e* and in alinement with the said flat strip *b³* are secured the antifiction-rollers *h* and *i* in a manner hereinafter described. It must be understood that said rollers are placed in such position on the car that they will engage the end portions of the inclined planes *b¹* and *b²* of the strip *b³* when the door is fully opened and will just clear the connecting curve of said inclined planes when the door is closed. The antifiction-roller *i* is mounted on the pin or axle *i¹*, having its bearings in the arm *i²*, fulcrumed, as at *i³*, to the projecting portion *i⁴* of the bracket *i⁵*, which latter is secured to the car in any desired manner. On one side of said projecting portion *i⁴* is secured, by means of a screw or bolt *i⁷*, a flat spring *i⁶*, bearing against the arm *i²* and adapted to allow a certain amount of flexibility or motion in the said arm *i²*, and thus in the antifiction-roller *i* when the latter is striking against the inclined plane *b¹* in the descent of the car. The antifiction-roller *h* is similarly supported on the car and is adapted to engage the inclined plane *b²* of the strip *b³* while the car is ascending.

Should the door *b* have been left open, the antifiction-roller *i* or *h* in the ascent or descent of the car will strike the inclined planes *b¹* or *b²*, and thus, by pressing against said inclines, force the door over until the curved connection or culminating point of the flat strip *b³* is passed, which position corresponds to that in which the door is locked.

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

The combination with the sliding door of an elevator-shaft and with the elevator-car, of a flat strip secured to the door and forming inclined planes diverging from the center of the door, antifiction-rollers in alinement

with the ends of said inclines when the door
is fully open, spring-controlled pivoted arms
supporting said antifriction-rollers, and a
bracket for each of said pivoted arms and se-
cured to the car, all said parts, substantially
as and for the purposes described.

In testimony that I claim the foregoing I

have hereunto set my hand this 12th day of
November, 1896.

WALTER J. KNIGHT.

Witnesses:

ALFRED GARTNER,
S. D. RUMSEY.