

(No Model.)

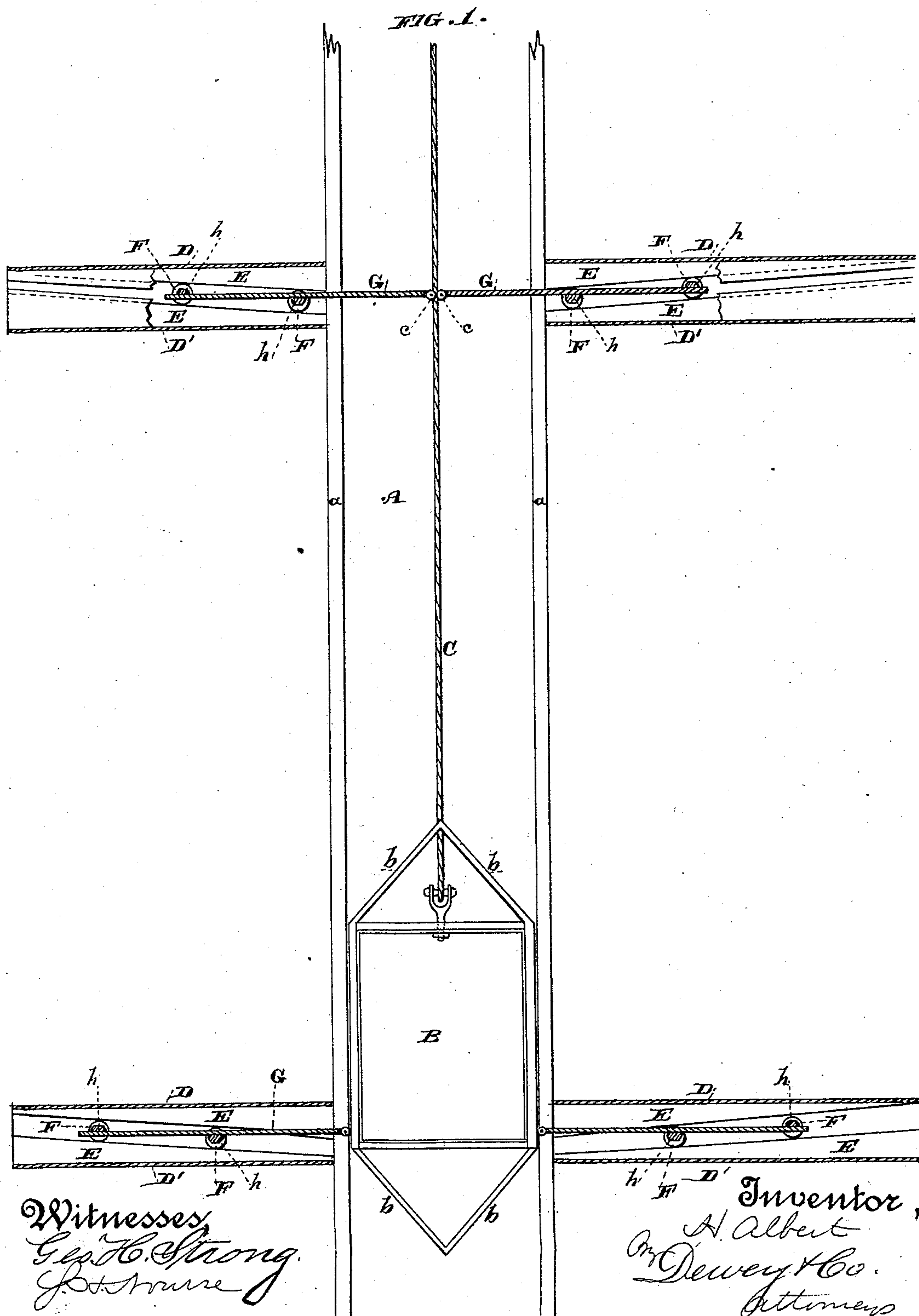
2 Sheets—Sheet 1.

H. ALBERT.

AUTOMATIC SAFETY HATCH FOR ELEVATOR SHAFTS.

No. 285,097.

Patented Sept. 18, 1883.



(No Model.)

2 Sheets—Sheet 2.

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FIG. 2.

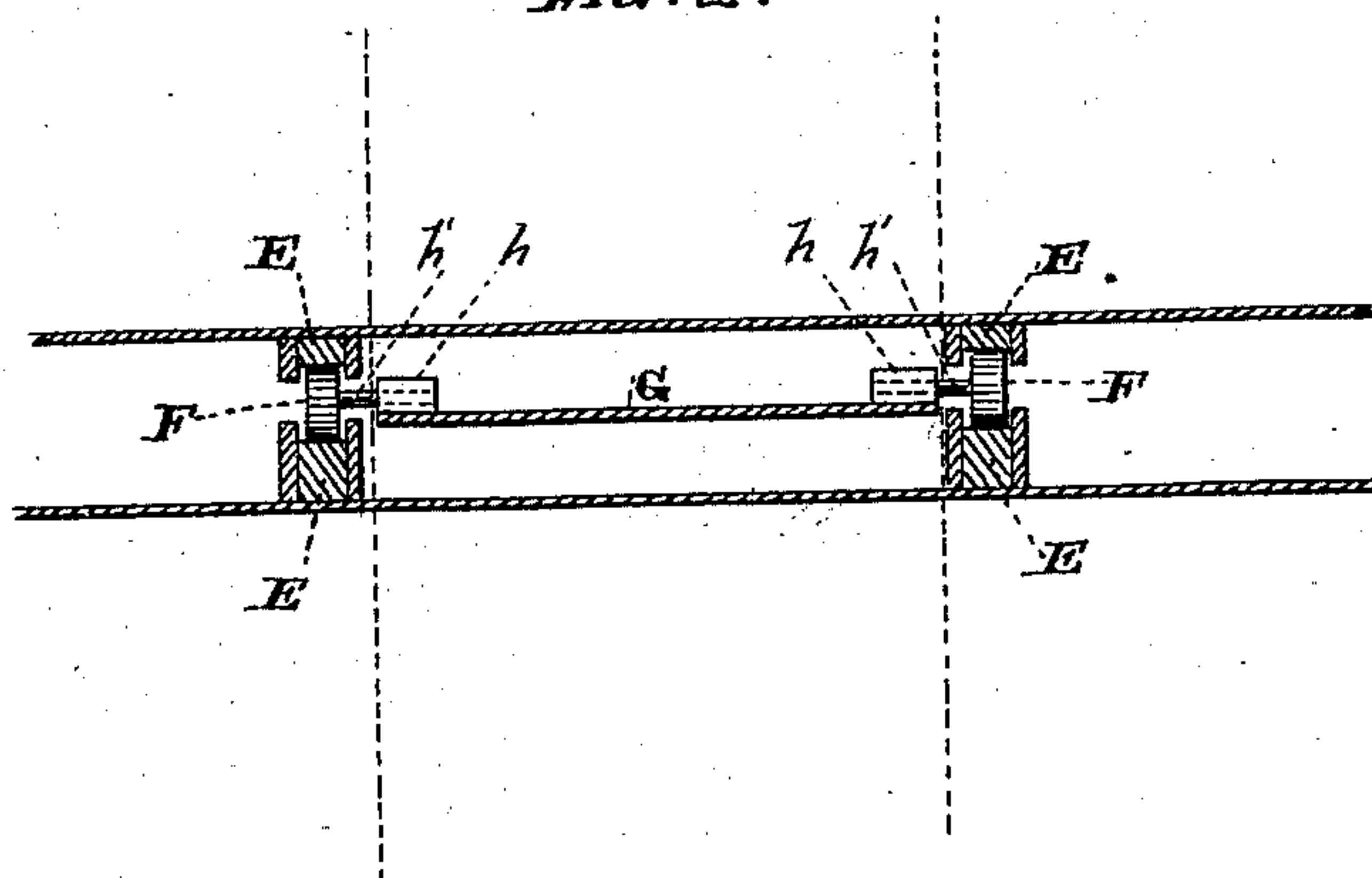
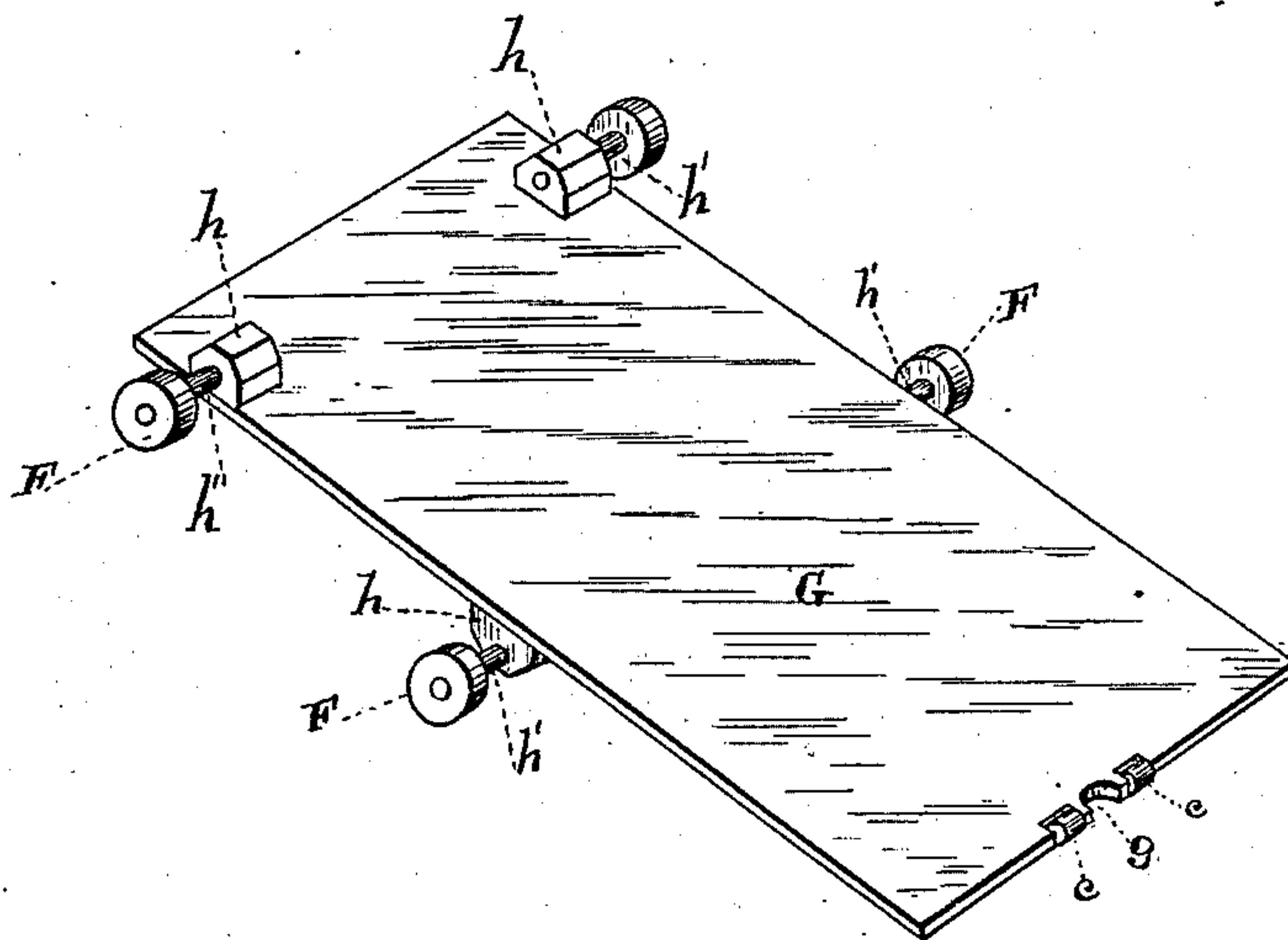


FIG. 3.



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UNITED STATES PATENT OFFICE.

HENRY ALBERT, OF NEWCASTLE, CALIFORNIA.

AUTOMATIC SAFETY-HATCH FOR ELEVATOR-SHAFTS.

SPECIFICATION forming part of Letters Patent No. 285,097, dated September 18, 1883.

Application filed July 20, 1883. (No model.)

To all whom it may concern:

Be it known that I, HENRY ALBERT, of Newcastle, county of Placer, and State of California, have invented an Improvement in Automatic Safety-Hatches for Elevator-Shafts; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to a new and useful automatic safety-hatch for elevator-shafts, and more particularly to improvements in a two-part hatch at each floor, mounted on friction-rollers, and meeting in the center of the shaft when closed. These hatches are separated by V-shaped cams on the traveling cage, and return to position by force of gravitation. They are so constructed that while thus gravitating together they shall always lie in a horizontal plane, as I shall hereinafter fully explain.

The object of my invention is to cut off or separate each floor by automatically-operating hatches, to prevent the spread of fire or the communication of drafts and fumes, and to avoid accidents by persons falling through the elevator-shaft.

Referring to the accompanying drawings, Figure 1, Sheet 1, is a vertical section of the shaft, showing the hatches at one floor opened and those above closed. Fig. 2, Sheet 2, is a transverse section of hatch and guides. Fig. 3 is a perspective detail of one part of the hatch.

A is the elevator-shaft, having the usual vertical guides, *a*, in which the cage or car B is adapted to ascend and descend by means of the cable or rope C and suitable power devices. Upon the top and bottom of the cage B are secured bars *b*, forming V-shaped cams, the one above being inverted. These bars are continued along the sides of the cage to prevent the cage from binding.

D represents the various floors of a building, and D' the ceilings. Between the floor and ceiling are formed tracks or guides E, for the friction rollers or wheels F, which are adapted to travel thereon.

G are the hatches. These lie between each floor and ceiling when forced back, and are adapted to move together from each side, meeting in the center of the shaft and closing it. A notch, *g*, is cut in each, to provide an aperture for the hoisting-cable. The sides of these

hatches are provided with the friction-rollers F, which travel on the guides or tracks E, so that the hatches may readily be moved. The tracks E are set at an inclination downwardly toward the elevator-shaft, so that the hatches, by gravitation alone, move together to meet in the center and close the shaft. This is their normal position, and they return to it when relieved. The tracks E being inclined, the hatches would naturally follow the same inclination; but to prevent this and keep the hatches in a horizontal plane, I arrange the rollers F as follows: Castings *h*, having outwardly-extending spindles *h'*, are bolted to the hatches. Those in front are bolted under and those in the rear are bolted on top of the hatches. The rollers F are journaled on these spindles *h'*, and because of the under position of the forward ones the front of the hatch is raised, while the position of the rear rollers on top depresses the rear of the hatch, thereby throwing the hatch into a horizontal plane, while its rollers travel on an inclined track. The meeting edges of the hatches are provided with small rollers *c*, for the impingement of the cam-bars *b* on the cage.

The operation of these devices is as follows: When the cage ascends, its upper cam, upon reaching the closed hatch, impinges against the small rollers *c* and forces the two parts of the hatch to separate. This separation continues until the hatches are forced back clear of the shaft, and they are held in this position by the side bars, *b*, on the cage, which prevent binding. When the hatches are relieved from these side bars, they begin to gravitate toward the center, gradually traveling together, as the lower cam of the cage allows them, until they close the shaft, lying, when closed, in a horizontal position, as described. In descending, the lower cam performs the operation of opening and the upper of allowing the hatch to close in similar manner.

I am aware that a two-part gravitating hatch at each floor, mounted on friction-rollers, and meeting at the center of the shaft, when closed, is old, and such I do not wish to be understood as claiming, broadly, as of my invention.

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

The elevator-shaft A, the two-part hatch G at each floor, the friction-rollers F, mounted on the sides of said hatch, those in front being secured under the hatch to raise its front, 5 and those behind being secured on top to depress its rear, whereby said hatch may lie in a horizontal plane, and the inclined guides or tracks E, upon which said rollers travel to close the hatch by gravitation, in combination

with the reciprocating cage or car B and means to thereon for forcing the hatch apart to open the shaft, substantially as herein described.

In witness whereof I have hereunto set my hand.

HENRY ALBERT.

Witnesses:

H. C. EWING,

JOHN M. FULWEILER.