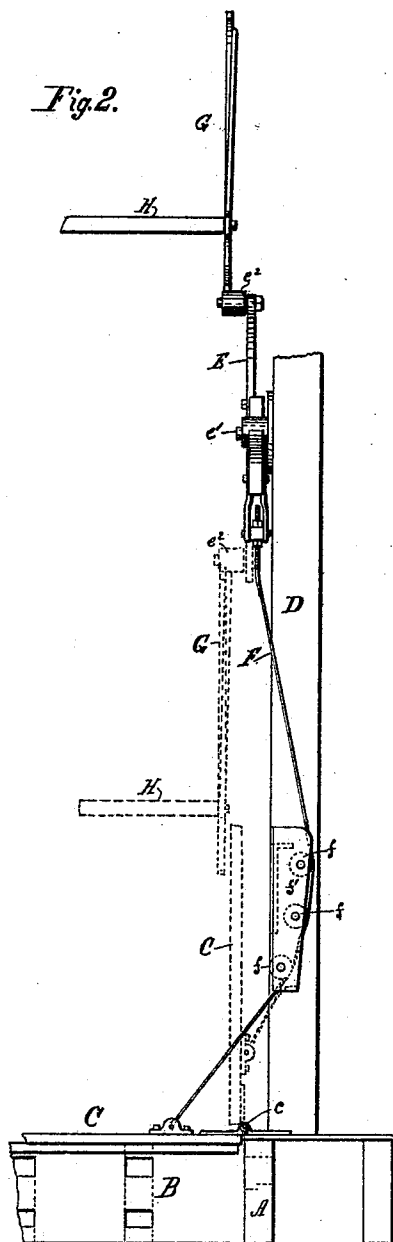
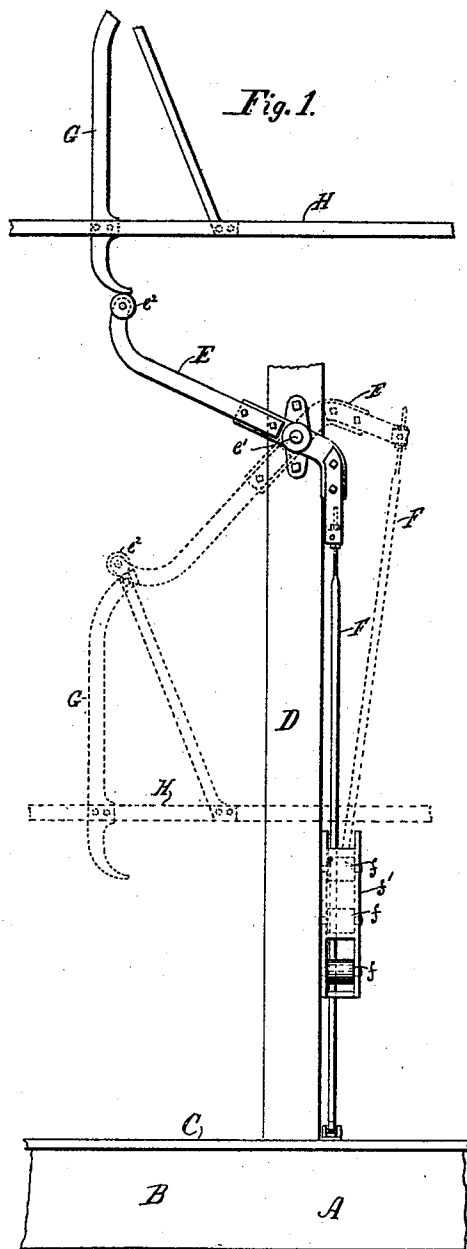


(No Model.)

D. FRASER.
HATCHWAY DOOR OPERATING DEVICE.

No. 464,721.

Patented Dec. 8, 1891.



WITNESSES:
Chas. Ferguson
Wm. Mc Cluff

INVENTOR
Daniel Fraser
BY *Edwin H. Brown*
HIS ATTORNEY

UNITED STATES PATENT OFFICE.

DANIEL FRASER, OF NEW YORK, N. Y., ASSIGNOR TO THE EXCELSIOR
ELEVATOR GUARD AND HATCH COVER COMPANY, OF SAME PLACE.

HATCHWAY-DOOR-OPERATING DEVICE.

SPECIFICATION forming part of Letters Patent No. 464,721, dated December 8, 1891.

Application filed March 4, 1891. Serial No. 383,781. (No model.)

To all whom it may concern:

Be it known that I, DANIEL FRASER, of New York, in the county and State of New York, have invented a certain new and useful Improvement in Mechanism for Operating Hatch-Covers, of which the following is a specification.

This improvement relates to devices for operating hatch-doors employed in connection with elevator shafts or wells wherein elevator-cars are raised and lowered; and the object of the improvement is to provide a simple, cheap, and efficient mechanism whereby the hatch-doors may be opened and closed gently by the passage of the elevator-car.

I will describe a mechanism for operating hatch covers or doors, and then point out the novel features in a claim.

In the accompanying drawings, Figure 1 is a front elevation of a portion of an elevator-well, a portion of a floor adjacent to the well, a portion of an elevator-car, and mechanism embodying my improvement. Fig. 2 is a side elevation of the same parts.

Similar letters of reference designate corresponding parts in both figures.

A designates a joist forming part of a floor in a building.

B is a well formed in the building. I have not represented its boundaries, because it may be of any suitable construction.

C designates a hatch cover or door connected at one edge by hinges *c* with the floor, of which the joist A forms part. This door may be lowered into a horizontal position to close the hatchway or well or raised into a vertical position, as illustrated by dotted lines in Fig. 2, to open the well or hatchway. D designates a post erected upon the said floor adjacent to the hatchway and serving as a support to which a lever E is fulcrumed through the agency of a stud *e'*, fastened to the post. The lever is shown as having a straight body and its ends bent in reverse directions therefrom. One end of this lever is connected by a flexible connection with the hatch-door. In the present instance this flexible connection consists of a steel strap F, adjustably connected at one end with the lever

by means of a screw and nut and connected at the other end to the hatch-cover a short distance from the hinge. This strap passes around a series of guide-pulleys *f*, arranged in line and journaled to a frame *f'*, fastened to the post D. Obviously, if the other end of the lever E is lowered the hatch-cover will be raised, and if the position of the lever is controlled the position of the hatch-cover will also be controlled. By releasing the lever E gently it is obvious that the hatch-door may be prevented from closing violently. To attain this result, that end of the lever which is not connected with the strap F is preferably provided with an anti-friction roller *e²* and is made to coact with a rod G, carried by the elevator-car H. This rod occupies an upright position and has both its ends turned toward the central line of the elevator-car and toward the vertical plane of the fulcrum-point of the lever E. Its upper end is turned inward far enough to contact with the roller *e²* of the lever E when the car ascends. After the roller *e²* has come in contact with the straight portion of the rod G it will be held against vibration, and consequently the hatch-door will be held in a raised position until the rounded lower end of the rod is by the ascent of the elevator-car brought opposite the roller *e²* of the lever E, whereupon the lever will be allowed to move slowly under the weight of the hatch-cover and lower the same gently until the hatch-door is closed. The closing of the hatch-door will not occur until just as the rod G releases the lever E. In the descent of the elevator-car the rounded end of the rod G co-acting with the lever E allows the hatch-cover to descend gently at the proper time.

It will be seen that the lever E operates parallel with the pin of the hinge *c* or parallel with the hinged edge of the hatch-cover C, so that the lever does not project over or cross the hatchway or extend beneath the floor of the car. The rod G is fastened to one side of the car, so that the lever may engage with it.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination, with a hatchway, a hinged cover therefor, and a car, of a lever E, ful-

crumed to a post adjacent to the hatchway,
an upright bar carried by the car and coact-
ing with the lever E, a flexible steel strap con-
nected at one end to said lever and at the
5 other end to the cover, and a series of rollers
arranged substantially in line on said post,
over which the said flexible steel band passes,
substantially as specified.

In testimony whereof I have signed my
name to this specification in the presence of 10
two subscribing witnesses.

DANIEL FRASER.

Witnesses:

S. O. EDMONDS,
WM. A. POLLOCK.