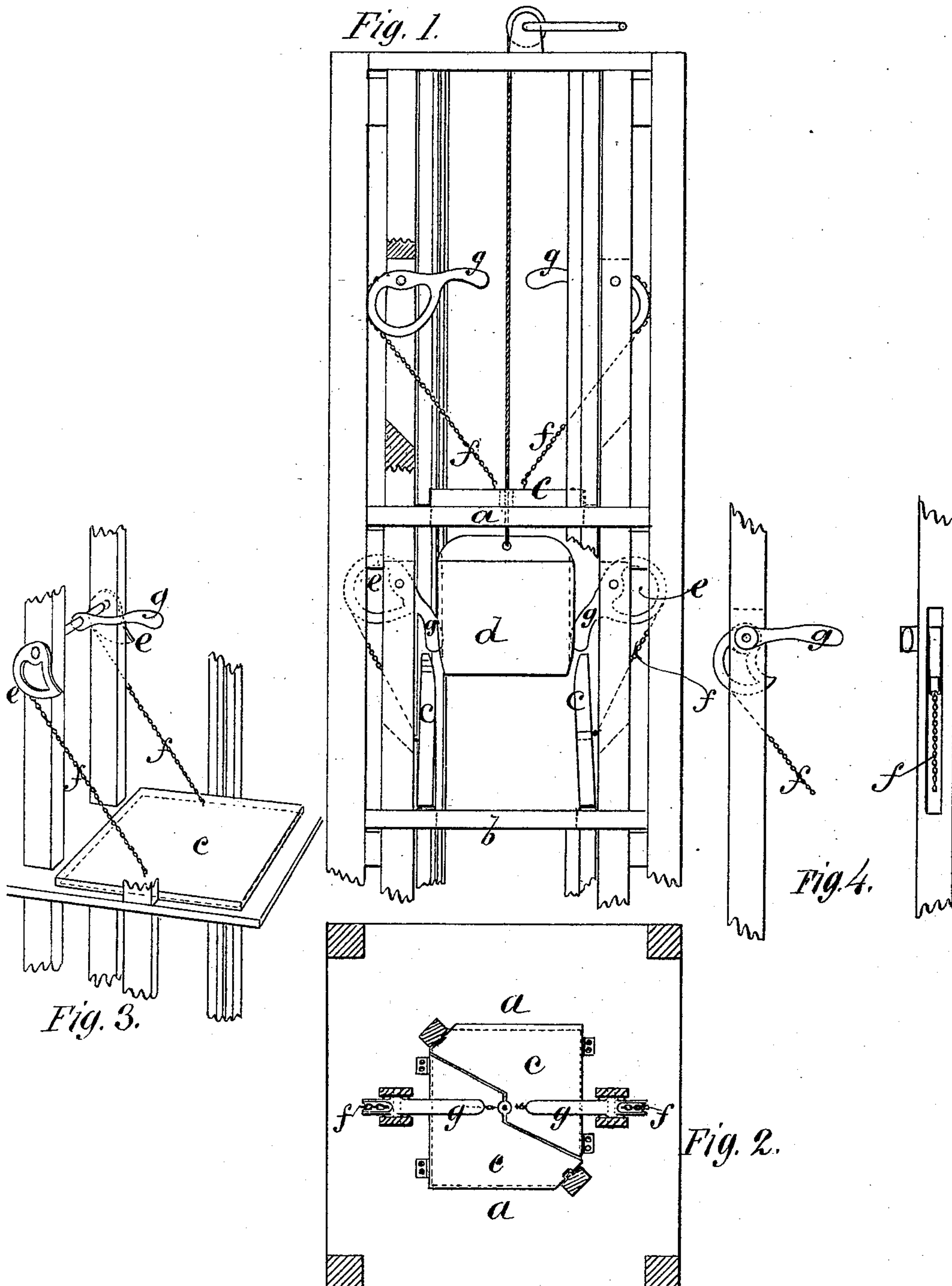


C. F. STAPLES & I. L. HOLMES.

Self-Closing Hatchways.

No. 153,688.

Patented Aug. 4, 1874.



Witnesses
Frank R. Rogers.
D. N. G. Coffin Jr.

Inventors
Charles F. Staples.
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UNITED STATES PATENT OFFICE.

CHARLES F. STAPLES AND IRVING L. HOLMES, OF BOSTON, MASS.

IMPROVEMENT IN SELF-CLOSING HATCHWAYS.

Specification forming part of Letters Patent No. **153,688**, dated August 4, 1874; application filed May 27, 1874.

To all whom it may concern:

Be it known that we, CHARLES F. STAPLES and IRVING L. HOLMES, both of the city of Boston, county of Suffolk and State of Massachusetts, have invented Improvements in Mechanism for Opening and Closing Hatches, of which the following is a specification:

With reference to the accompanying drawings, Figure 1 is an elevation, illustrating the mechanism applied to the hatches in two floors, *a* and *b*. Fig. 2 is a plan. Fig. 3 is a perspective view, illustrating a modification in which the cam and lever operate in different vertical planes adapted to the requirements of different cases. Fig. 4 shows two views of a similar modification.

The hatches are located in the floors *a b*. The covers are marked *c*. The covers when used with corner guide-posts are divided, as in Fig. 2, diagonally to avoid interference with the posts in opening. The covers are hinged so as to close readily by their own weight, partially or wholly overhanging their hinges for that purpose. The elevator-car or hoisting cage or platform is marked *d*, and may be operated in any usual manner. Over the hinges is pivoted or journaled a cam, *e*, constructed with a groove or other suitable surface for winding the flexible connection *f* attached to the cover *c*. This cam is provided

with the counter-balance or lever *g*, which performs the double function of a counter-balance to the weight of the cover *c* and a lever. The lever is acted upon by the descending car, cage, or platform to open the hatch by lifting covers *c* in advance of the car in its downward movement, which operation will be readily understood from the drawing. The car *d* in its downward motion, in Fig. 1, has tilted the levers *g*, taking up the flexible connection *f* upon the cam *e*, and so lifting cover *c*, thereby opening the hatch in advance of the descending car. As soon as the car passes the levers the covers are released ready to fall by their own weight when the car has passed them. Their closing may be aided by a spring, if desired. On the return or upward movement of the car it lifts the covers by contact from beneath.

We claim —

The combination of the lever *g*, eccentrically or cam shaped wheel or head *e*, flexible connection *f*, and cover *c* with the car, cage, or platform *d*, substantially as described.

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