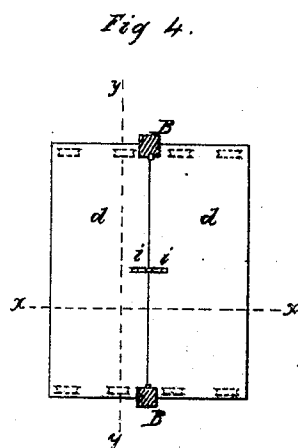
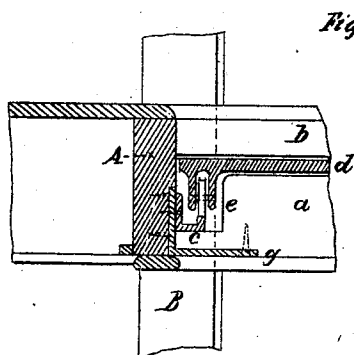
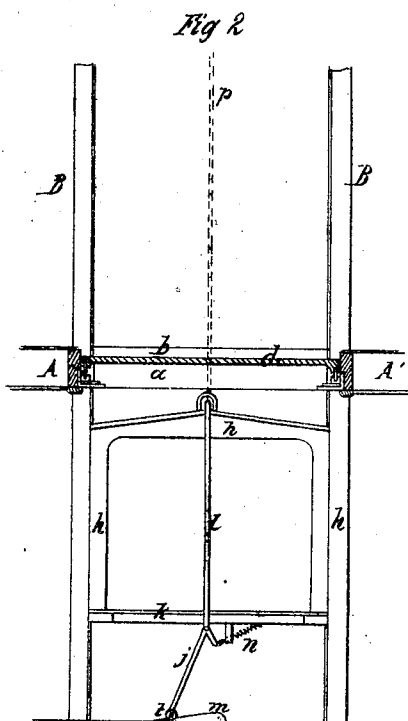
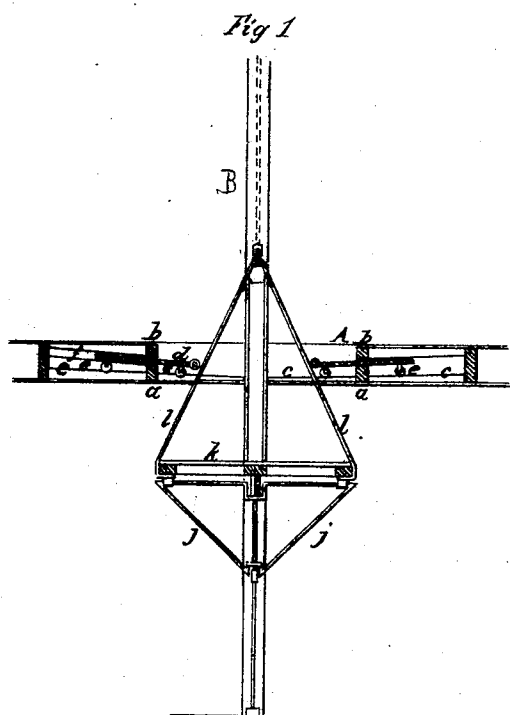


S. I. RUSSELL.
Hatchways.

No. 134,169.

Patented Dec. 24, 1872.



Witnesses.
E. A. Nash
O. W. Bond.

Inventor.

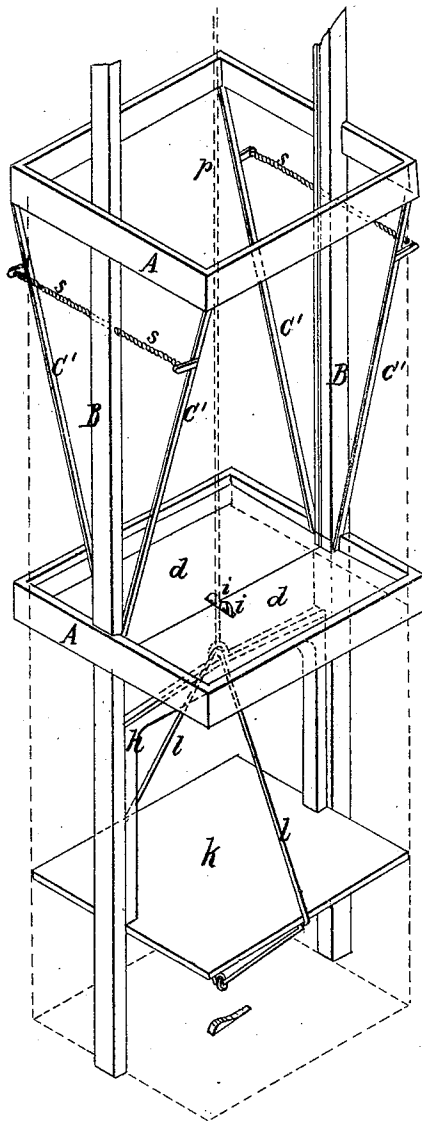
Samuel Russell.

S. I. RUSSELL.
Hatchways.

No. 134,169.

Patented Dec. 24, 1872.

Fig 5.



Witnesses

E. A. West.
O. W. Bond

Inventor.

Samuel L. Russell.

UNITED STATES PATENT OFFICE.

SAMUEL I. RUSSELL, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN HATCHWAYS.

Specification forming part of Letters Patent No. **134,169**, dated December 24, 1872; antedated December 20, 1872.

To all whom it may concern:

Be it known that I, SAMUEL I. RUSSELL, of Chicago, Illinois, have invented certain new and useful Improvements in Hatchways; and the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a vertical section on line *x x* of Fig. 4; Fig. 2, a vertical section on line *y y* of Fig. 4; Fig. 3, an enlarged detail; Fig. 4, a top view of the closed hatch; and Fig. 5, a perspective, showing a second mode of opening the hatch.

The object of my invention is to construct a hatchway having a sliding cover for closing the same, which will be opened automatically as the platform ascends or descends, and will be closed in like manner after the passage of the platform.

In the drawing, *A A* represent the joists or trimmers in a floor each side of a hatchway; *B B*, posts, one each side of the hatchway; *c*, track; *d d*, sliding covers for the opening; *e*, pulleys or wheels properly secured to *d d* and so arranged as to run upon the tracks *c*; *f f*, open spaces or pockets in which the covers *d d* move; *g*, supports for the header *a*; *h*, frame to which the platform *k* is attached; *i i*, sheaves in the edge of the covers *d d*; *j j*, iron rods, hinged at the upper end to the platform, and brought together at their lower ends and there provided with a sheave; *l l*, similar rods having their lower ends secured to the platform and their upper ends to the frame *h*; *m*, an inclined plane on the lower floor, to facilitate the tripping of the rods *j j*; *n*, spring to bring the rods *j j* back to place when the platform ascends; *p*, rope or cable by which the platform is raised. The headers *a a* are cut away at each end to make room for the track and form a passage for the wheels *e e*. These headers are supported by means of strong angle-irons *g*, which are secured to the trimmers and to the headers by means of suitable bolts or screws. Thus, though the headers are cut away at the ends, requisite strength is obtained and the headers are not, in fact, weakened. The sliding covers *d d* pass between the two headers *a b*, which are placed a little distance apart. Suitable short joists pass from *b* to the floor-

timbers to support the floor over the pockets *f f*. The tracks *c* extend to the center of the hatchway, and are so inclined that the covers will run down the tracks and close the hatchway by the action of gravity. When the hatchway is not in use the covers *d d* will be in the position shown in Fig. 4; and when the platform ascends the rods *l l*, passing up between the sheaves *i i*, will force the covers *d d* back into the pockets *f f*, permitting the platform to pass, and, the platform having passed up, the covers *d d* will be returned to the position shown in Fig. 4, covering the hatchway and furnishing security against accident or the passage of fire. Springs or weights may be used, if necessary, to facilitate the return of the covers. When the platform descends the rods *j j* will open the covers *d d*, and as the platform approaches the lower floor the sheave *t* at the lower ends of the rods *j j* will come in contact with the inclined plane *m*, and the rods *j j*, being hinged, will fold up beneath the platform, which will descend until it rests upon the floor, and when the platform again ascends the spring *n* will bring the rods *j j* again into the position shown in Fig. 1, in which the covers *d d* are represented partly open.

The pockets *f* may be lined with metal as a protection against fire.

The passage of the rods *l l* up between the covers *d d* has a tendency to lift them up, and friction-rollers may be placed on the edge or top of each cover to diminish the friction.

The sheaves *i i* are useful to prevent the rope from being rapidly worn away.

Instead of a single set of rods, *l l*, above, and a single set, *j j*, below, two sets above and two below may be used, placed at the corners of the platform, in which case additional sheaves may be placed in the edges of the covers, at those points where they would be in contact with the rods.

The covers may be opened by the descending platform, by means of the levers *C' C'*, (see Fig. 5,) instead of the rods *l l*. These levers are hinged at their upper ends at the sides of the hatchway, while their lower ends are brought to the center posts *B* and pass a little below the edge of the covers. These levers are so arranged relatively to the platform that in its descent it will pass between them, forcing

them apart and opening the covers *d d*. Similar levers can be so arranged that the ascending platform will open the covers, such last-mentioned levers being placed below the hatchway. The levers *C' C'* will be returned to place after the passage of the platform by the springs *s s* or other suitable device, and the levers can be fastened to the platform, when the springs *s s* will return the covers, or aid in doing so.

What I claim as new, and desire to secure by Letters Patent, is as follows:

1. The combination of the recesses *f f* and sliding covers *d d* with the inclined tracks *c c*, arranged to close the covers without the aid of springs or weights, substantially as specified.

2. The header *a*, when cut away at the ends so as to permit the insertion of the track *c*, and sustained by suitable supports *g*, substantially as specified.

3. The hinged rods *j j*, in combination with the platform *k* and sliding covers *d d*, and inclined plane *m*, substantially as specified.

4. The hinged rods *j j*, or other similar suitable device for opening the covers *d d*, in combination with the sliding covers *d d*, substantially as specified.

5. The combination of the hinged rods *j j*, platform *k*, covers *d d*, inclined plane *m*, and spring *n*, substantially as and for the purposes set forth.

6. The sliding covers *d d*, in combination with the platform *k*, levers *C' C'*, and springs *s s* or other suitable device for returning the levers to place, substantially as and for the purposes specified.

SAMUEL I. RUSSELL.

Witnesses:

E. A. WEST,
O. W. BOND.