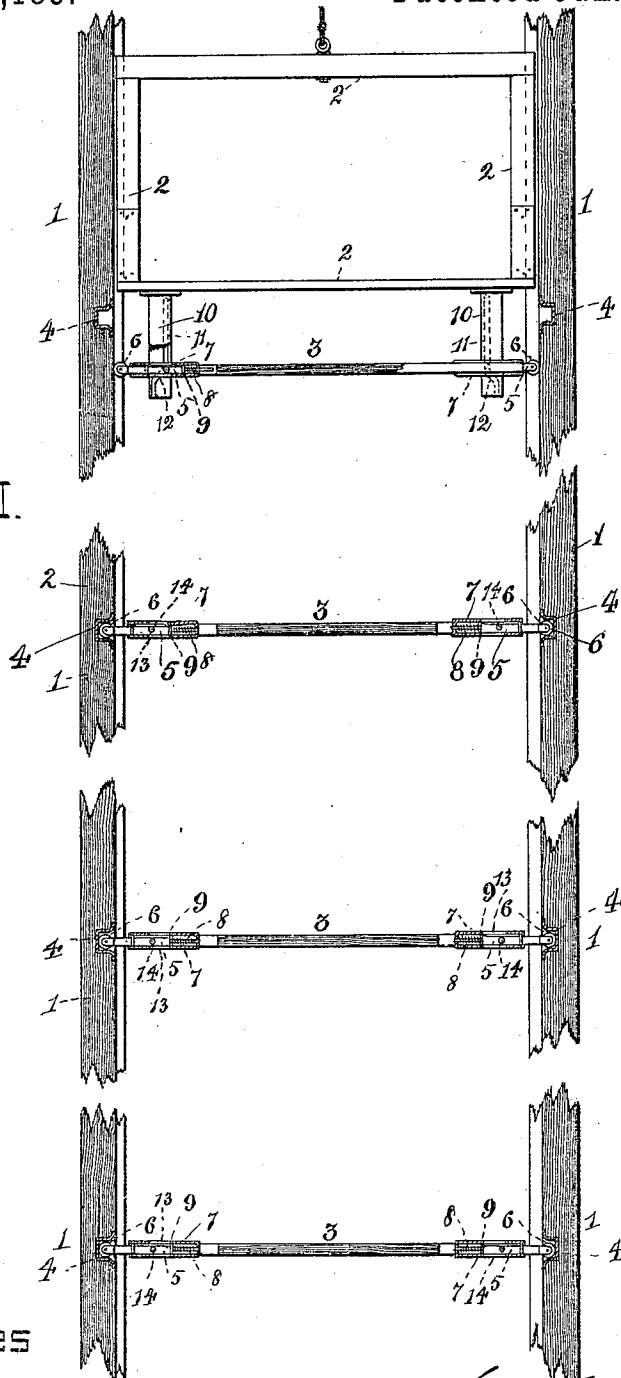


J. J. McBRIDE.
HATCH DOOR.

No. 467,185.

Patented Jan. 19, 1892.

Fig. I.



Witnesses

Frank Guile

Lillie Hamner

Inventor

John James McBride
By *Wright Bros*
Attys

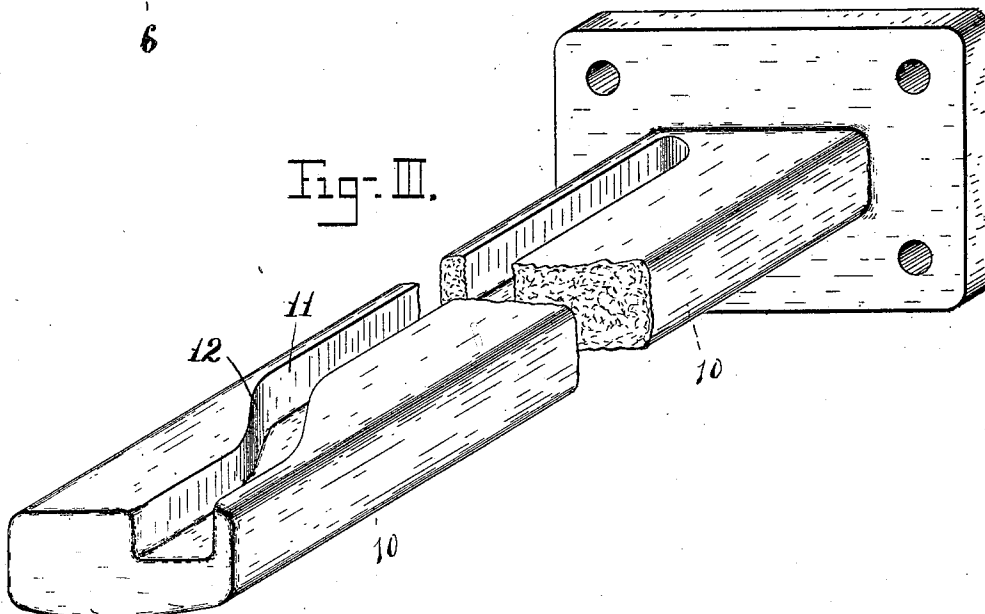
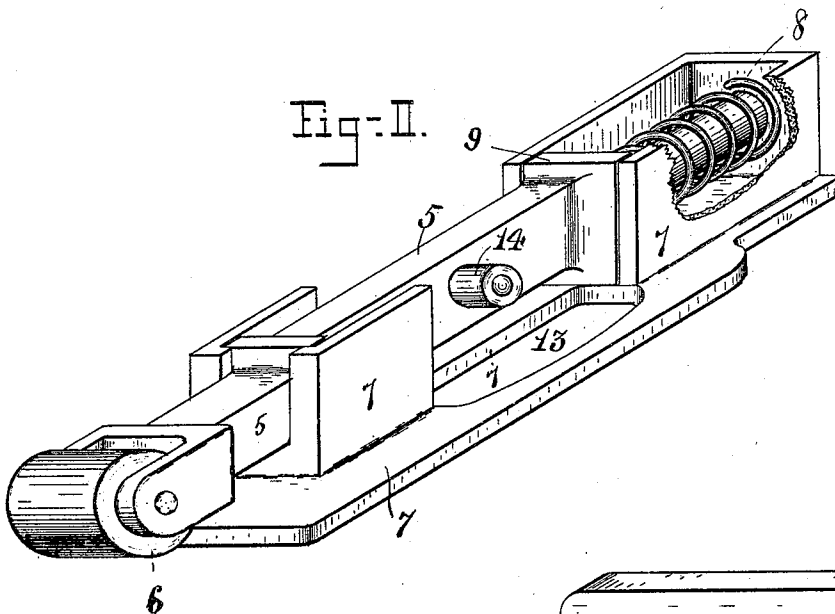
(No Model.)

2 Sheets—Sheet 2.

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HATCH DOOR.

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Witnesses

Frank Guile

Lille Hanna

Inventor

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By *Frederick B. Smith*

Att'y.

UNITED STATES PATENT OFFICE.

JOHN JAMES MCBRIDE, OF RIDGEFIELD PARK, NEW JERSEY, ASSIGNOR TO
HENRY I. COE, OF ST. LOUIS, MISSOURI.

HATCH-DOOR.

SPECIFICATION forming part of Letters Patent No. 467,185, dated January 19, 1892.

Application filed December 9, 1890. Serial No. 374,099. (No model.)

To all whom it may concern:

Be it known that I, JOHN JAMES MCBRIDE, a citizen of the United States, residing at Ridgefield Park, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in Hatch-Doors, of which the following is a specification.

My invention relates to the class of doors for covering hatchways commonly called "carrying-doors."

I will first describe my invention with reference to the accompanying drawings, reserving for the claims a citation of the novel combination.

In said drawings, Figure I is a sectional elevation of an elevator-shaft having my improved doors. Fig. II is a detail perspective view of a door-lock. Fig. III is a similar view, partly broken away, of a key.

1 may represent the side or corner posts of an elevator, and 2 the cab or platform.

3 3 3 3 are doors, in number corresponding to the number of floors of the building and of size to close the hatch-opening.

4 4 are sockets mounted in any fixture at the floor-level. They are preferably four in number, one for each corner of the door.

5 5 are bolts, whose locking ends are preferably provided with anti-friction rollers 6, adapted to lock in the said sockets. The housings 7 for said bolts are arranged on the four corners of the door. Compression-springs 8 within the housings surrounding the bolt, between the housing end and flange 9 on the bolt, keep the bolt normally projected. These springs are not necessarily of great strength. They are only intended to keep the bolt in its socket, the bolts being projected and withdrawn positively.

10 10 are keys, the shape of which is shown in Fig. III. These are four in number and are fixed to the cab or platform so as to project toward the doors. Each key has straight sides and a groove 11, having its outer and inner ends parallel with its sides, but curved intermediately near the lower end of the key, as shown at 12. The keys are adapted to

pass through the holes 13 in the housings 7 and cause the studs 14 on bolts 5 to enter the groove 11.

In the drawings the doors are all shown as beneath the cab, and the keys are on the lower side of the cab only. As the cab descends and approaches the first door 3 its four keys will enter the four holes 13 of the locks, and the bolts will be retracted by the operation of the curved grooves 12 and studs 14, so as to release the door from its support on the sockets 4. As the cab continues to descend, the roller 6 will travel with little friction over the guide-posts, which accordingly coast with the curve of the key-groove and the stud 14 in preventing the fall of the door. The latter hangs on the cab, and when the cab in its descent reaches the next door the first is raised somewhat by the impact. The large portion of the groove 11 is made of length proportionate to the total thickness of the doors to be at any one time hung upon the keys.

The carrying-doors are put in at equal distances apart, so as to even up the distance between floors; but when the floors are at uneven distances apart the manufacturers sometimes have to cornice down, or, in other words, put a cornice around the hatch-opening. Such cornicing leaves pits below the floor-surface. My invention does away with this cornicing, as each door is dropped at its floor, and it makes not any difference how far the different floors are apart.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. The combination of a cab or platform, the key on the cab or platform having straight sides, and a longitudinal groove formed with outer and inner ends parallel with the sides and connected by a curved portion, and a hatch-door having a housing formed with a key-hole, and the bolt having a stud and sliding in the housing, substantially as described.

2. The combination of the guide-posts 1, having sockets 4, the doors 3, housings 7,

spring-bolts 5, having studs 14, and cab 2, having keys 10, grooved at 11 12, substantially as set forth.

3. The combination of the guide-posts, the
5 doors, bolts therein having anti-friction wheels 6 and provided with draw-studs, the housings 7, having the holes 13, and a cab

having unlocking and door-supporting keys provided with curved grooves, substantially as set forth.

JOHN JAMES McBRIDE.

Witnesses:

HARRY E. KNIGHT,
HENRY I. COE.