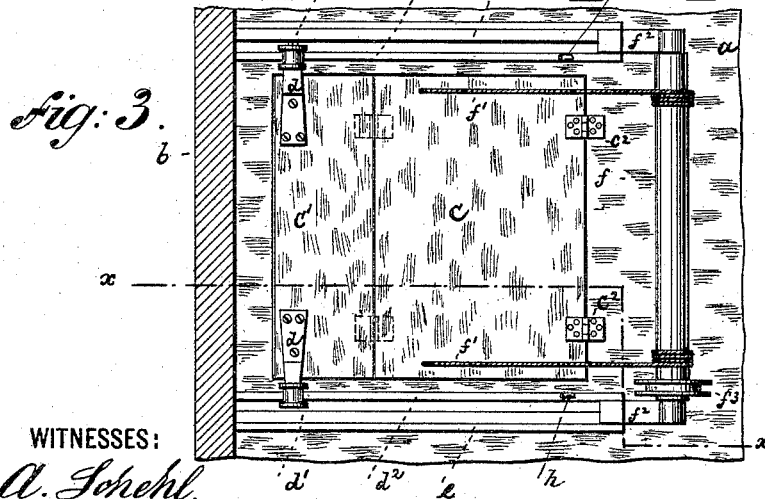
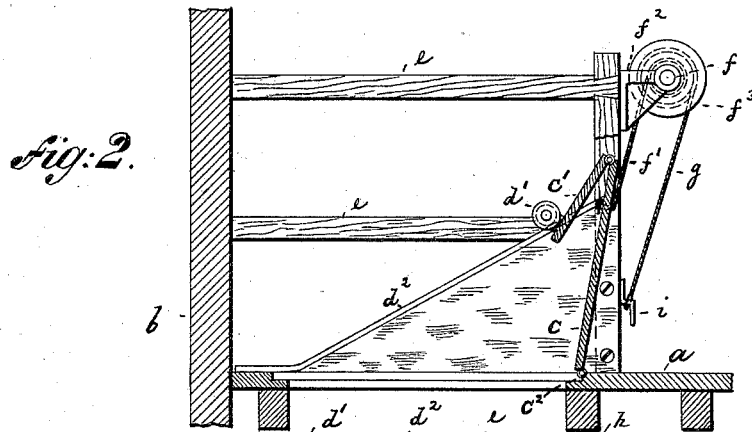
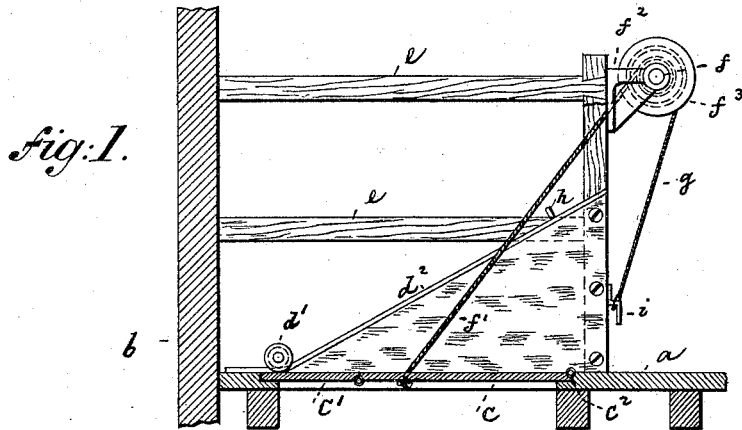


(No Model.)

K. GOLD.
HATCHWAY DOOR.

No. 457,026.

Patented Aug. 4, 1891.



WITNESSES:

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UNITED STATES PATENT OFFICE.

KAUFMAN GOLD, OF NEW YORK, N. Y.

HATCHWAY-DOOR.

SPECIFICATION forming part of Letters Patent No. 457,026, dated August 4, 1891.

Application filed May 2, 1891. Serial No. 391,341. (No model.)

To all whom it may concern:

Be it known that I, KAUFMAN GOLD, of New York city, New York, have invented an Improved Trap-Door for Hoists, of which the following is a specification.

This invention relates to a trap-door for hoists, so constructed that when opened it will be interposed between the operator and the well or opening to prevent accidents.

The invention consists in the various features of construction more fully pointed out in the claims.

In the accompanying drawings, Figure 1 is a section on line *x x*, Fig. 2, showing the door closed; Fig. 2, a similar section with the door opened, and Fig. 3 a top view of the door showing it closed.

The letter *a* represents one of the platforms, landings, or floors of a building through which an elevator or hoist passes. The usual opening within the floor is closed by a trap-door, which of course is opened when the hoist is operated.

Heretofore it has been the practice to hinge the door to the floor at the side nearest the wall *b*, so that the door leaned against the wall and exposed the opening to a dangerous degree. I hinge the door to the floor at the side opposite the wall and from which the operator manipulates the hoist. The door itself is made in two sections *c c'*, of which the section *c* is hinged to the floor at *c²* opposite the wall *b*, while the section *c'* is hinged to the section *c*. From the section *c'* there project laterally the axles *d*, upon which turn the wheels *d'*. These wheels run on the upper edges of inclined guideways or rails *d²*, extending along both sides of the opening. Of course these sides may also be protected by the customary railing *e*.

In order to open the door it is connected by ropes *f'* to a drum *f*, hung in suitable

bearings *f²*. This drum carries at one end a fixed pulley *f³*, encircled by a hand-rope *g*. By pulling the free end of this hand-rope the drum is revolved to wind up the ropes *f'* and to open the trap-door. When entirely open, the section *c* of the door will constitute a guard that incloses the opening sufficiently to prevent accidents. The section *c'* will at the same time be folded down to permit ready access to the hoist. If desired, stops *h* may be provided, against which the door may lean when open.

The door is locked in its open position by securing the free end of the hand-rope *g* to a suitable hook *i*.

To close the door the hand-rope is liberated, and then a slight push will cause the wheels *d'* on section *c'* to travel down the inclined rails until the parts *c c'* are brought into alignment and have resumed their proper horizontal position.

What I claim is—

1. The combination of a trap-door composed of two hinged sections *c c'*, the latter section being provided with the rollers *d'*, with the inclined rails *d²* extending across the opening closed by the door, and on which the rollers *d'* are adapted to run, substantially as described.

2. The combination of a trap-door composed of two hinged sections *c c'*, the latter section being provided with the rollers *d'*, with the inclined rails *d²* extending across the opening closed by the door, and on which the rollers *d'* are adapted to run, and means for operating the door, consisting of the rope *f'*, the drum *f*, and the rope *g*, all substantially as described.

KAUFMAN GOLD.

Witnesses:

F. V. BRIESEN,
W. R. SCHULZ.