(No Model.)

C. T. SCHULZE.

ELEVATOR HATCH GATE.

No. 322,485. Patented July 21, 1885.

Fig. 2.

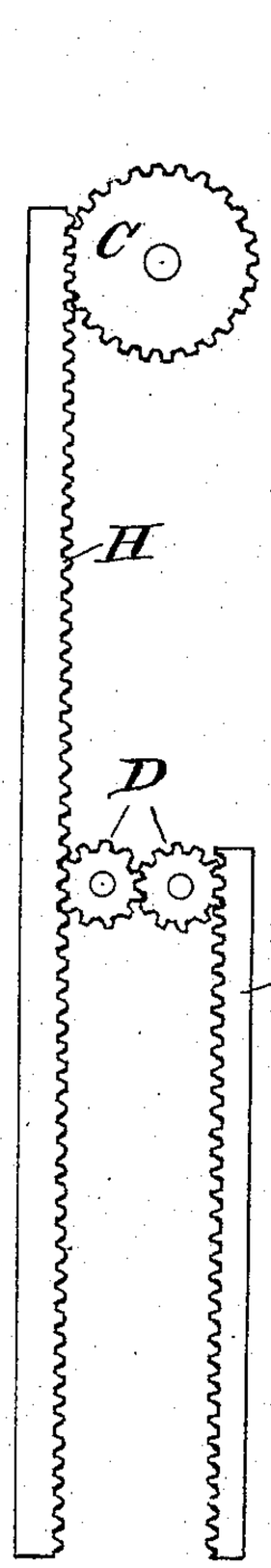


Fig. 3.

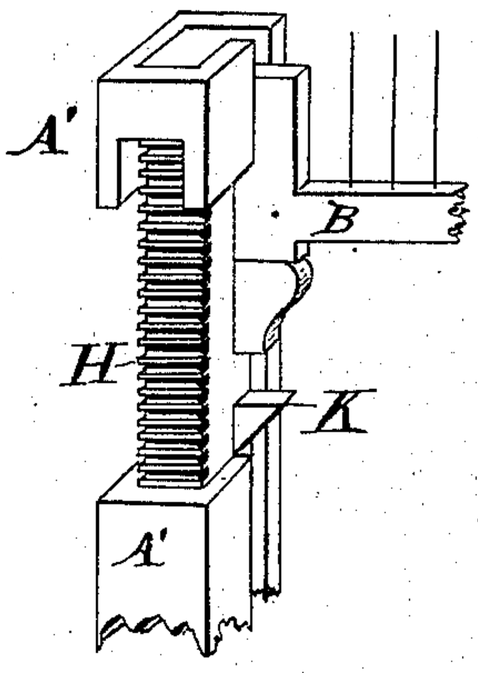


Fig. 4.

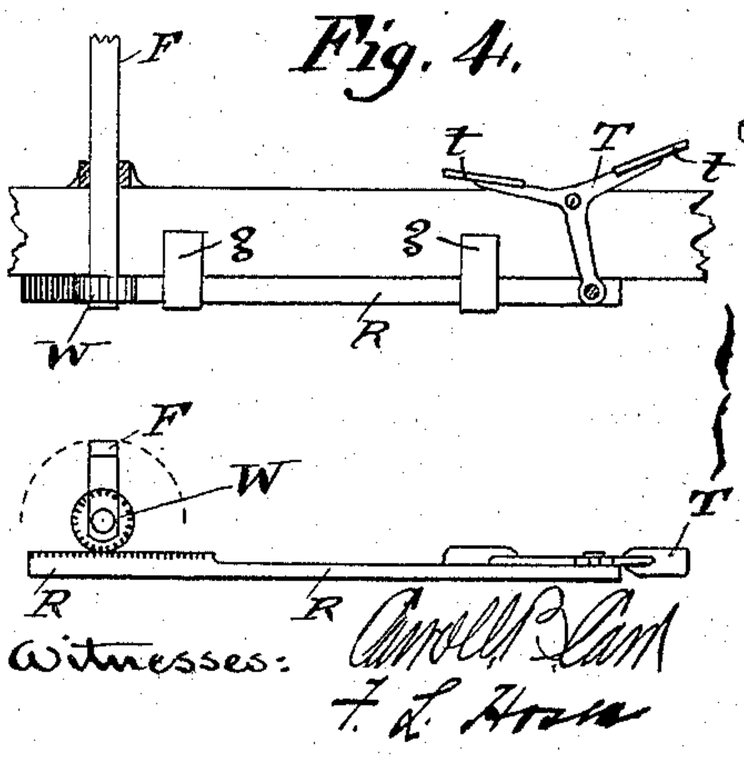
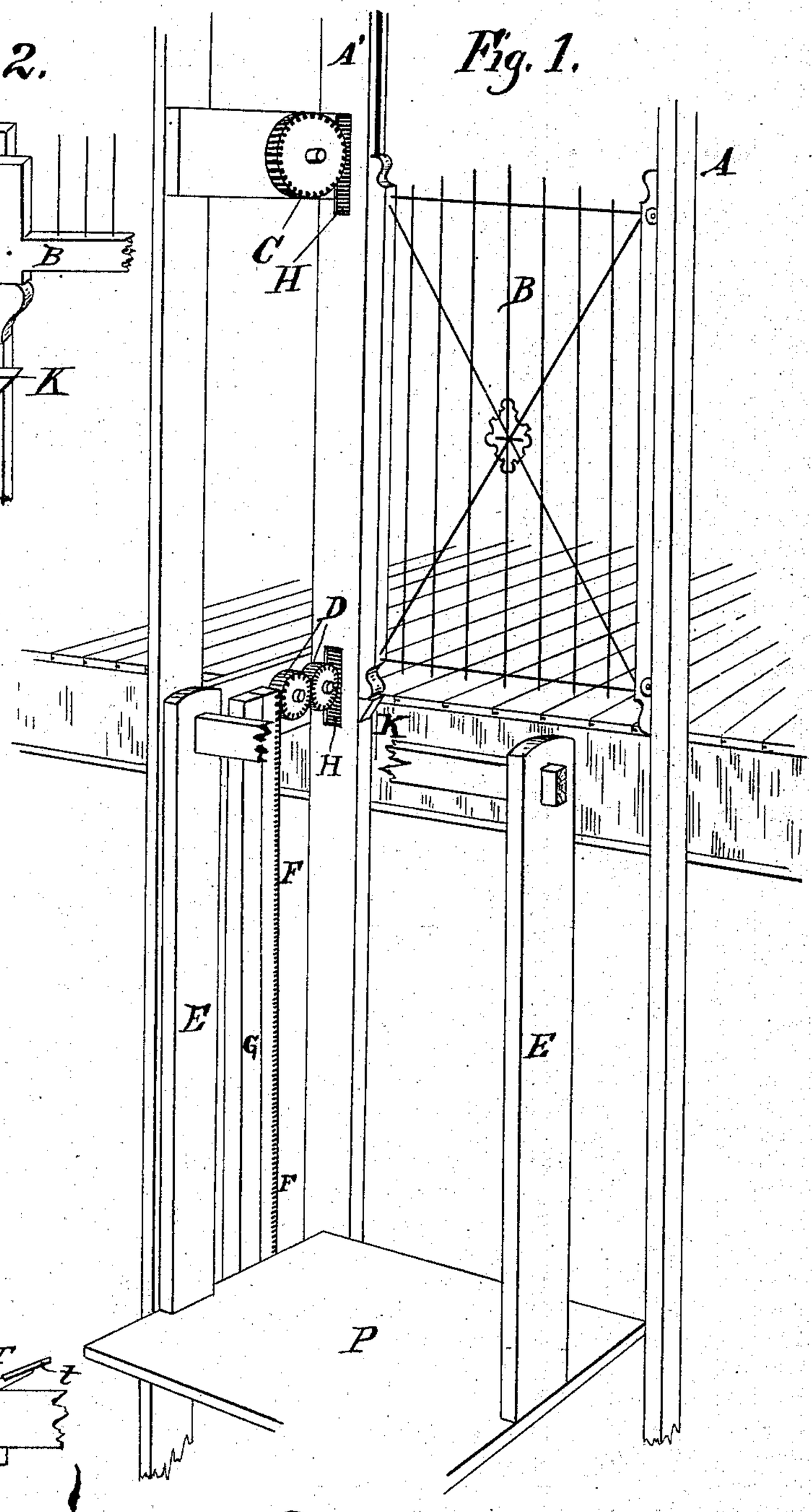


Fig. 1.



Witnesses:
Arnold Sachs
T. L. Hoss

Inventor:
Charles J. Schulze,
by Lee & Hosea,
Attorneys.

UNITED STATES PATENT OFFICE.

CHARLES T. SCHULZE, OF CINCINNATI, OHIO.

ELEVATOR-HATCH GATE.

SPECIFICATION forming part of Letters Patent No. 322,485, dated July 21, 1885.

Application filed January 3, 1885. (No model.)

To all whom it may concern:

Be it known that I, CHARLES T. SCHULZE, a citizen of the United States, residing at Cincinnati, Ohio, have invented new and useful Improvements in Elevator-Hatch Gates, of which the following is a specification.

My invention relates to safety-gates for elevator-hatchways, its object being to provide a closure for such hatchways operated automatically by the elevator mechanism, to prevent accidents from leaving said openings unguarded.

To this end my invention consists in a gate closing the floor opening or doorway of the elevator-hatchway, arranged to move vertically between guides, and provided with an elevating rack-bar combined with actuating idlers and an actuating rack-bar on the elevator-cage, the whole arranged to elevate the gate as the cage rises and depress the same in the further movement of the cage in either direction; and it further consists in a construction of the apparatus enabling the elevator attendant to throw the same into and out of operation at will.

Mechanism embodying my invention is illustrated in the accompanying drawings, in which Figure 1 is a general perspective elevation of the entire apparatus complete; Fig. 2, a detail view of a portion of the gate-rack, its boxing, and a gate, on a somewhat enlarged scale; Fig. 3, an elevation of the racks and idlers detached, showing more clearly their relation; and Fig. 4, an elevation and inverted plan, respectively, of the disconnecting devices for throwing the cage-rack out of its actuating position.

The parts designated herein are indicated by letters of reference on the drawings.

Referring, now, to the drawings, A A′ designate two of the corner-posts of the elevator-hatchway, between which, as guides, the gate B has a vertical movement; C and D D, idler spur-gears pivotally mounted upon studs in the vertical path of a rack-bar, F, attached to the elevator-cage, and placed in engagement with the rack-bar H, attached to the gate B at one side, said rack-bar H moving in a boxing at the side of or within the corner-post A′.

P designates the platform, and E E the side stanchions of the elevator-cage.

The rack F is of a length corresponding with the height it is desired to elevate the gate B, and the idlers C and D D are arranged apart at such distance that the rack F, in leaving the lower idlers, D D, in passing upward will, at the moment of such disengagement, engage the idler C, thus keeping control of the gate until it is again restored to its position of rest, as will more fully appear from the subsequent description of the operation. The rack-bar H is twice the length of the rack-bar F, one-half projecting below the gate and the other extending upward beside the gate, as shown.

A rubber cushion, K, at one or both sides of the gate, is provided to receive the shock of the gate in descending.

In order to bring the engaging apparatus under control of the attendant, the rack-bar F is vertically pivoted to the frame of the cage, its pivot extending below the platform P, and there provided with a spur-pinion, W, engaging with a rack, R, moving horizontally in guides *g g*, and actuated by a foot-lever, T, pivoted in the platform, as shown. The latter, being furnished with two foot-wings, *t t*, the rack R may be moved in either direction at will, thereby throwing the rack-bar F in or out of gear with the idlers C and D.

The operation of the devices is as follows: The elevator-cage being in the position shown in Fig. 1, and rising, the rack-bar F engages first the idler D, whose rotation is transmitted through its mate D to the rack H of the gate B, and the latter thereby elevated. When the elevator-platform is opposite the floor, its rack is about to leave the idler D and engage the idler C. Should the cage still rise, its rack engages the idler C and depresses the gate to its former position. Should it descend from the floor, its reverse action upon the idlers D also depresses the gate to its normal position. Should the gate B be an intermediate one, the rack F may be thrown aside by the foot-lever, and the cage will then pass upward without moving the gate.

I claim as my invention, and desire to secure by Letters Patent of the United States—

1. The combination, in an elevator-hatchway, of the gate B with its rack H, the elevator-cage with its rack F, and the idlers C and D D, substantially as set forth.

2. In an elevator-hatchway, in combination with the gate, its rack, and the actuating idlers, a pivoted rack upon the cage, provided

with means, substantially such as described, for throwing the cage-rack into and out of gear, as set forth.

3. The combination, in an elevator-hatchway, of the vertically-moving gate, its attached rack, the cage-rack, the idlers arranged in the path of the cage-rack, and the foot mechanism for throwing the cage-rack out of gear, substantially as set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

CHARLES T. SCHULZE.

Witnesses:
L. M. HOSEA,
CARROLL B. CARR.