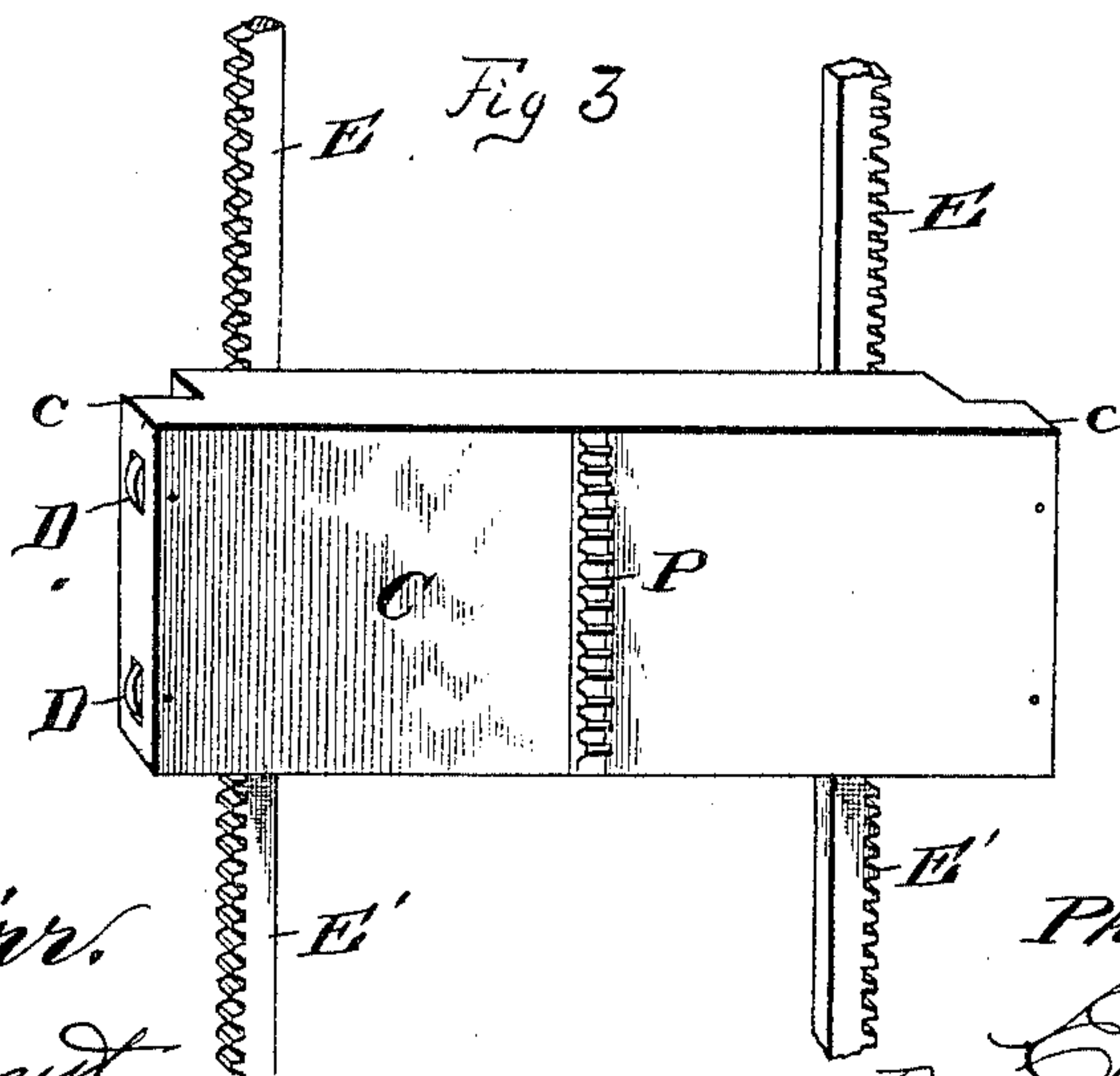
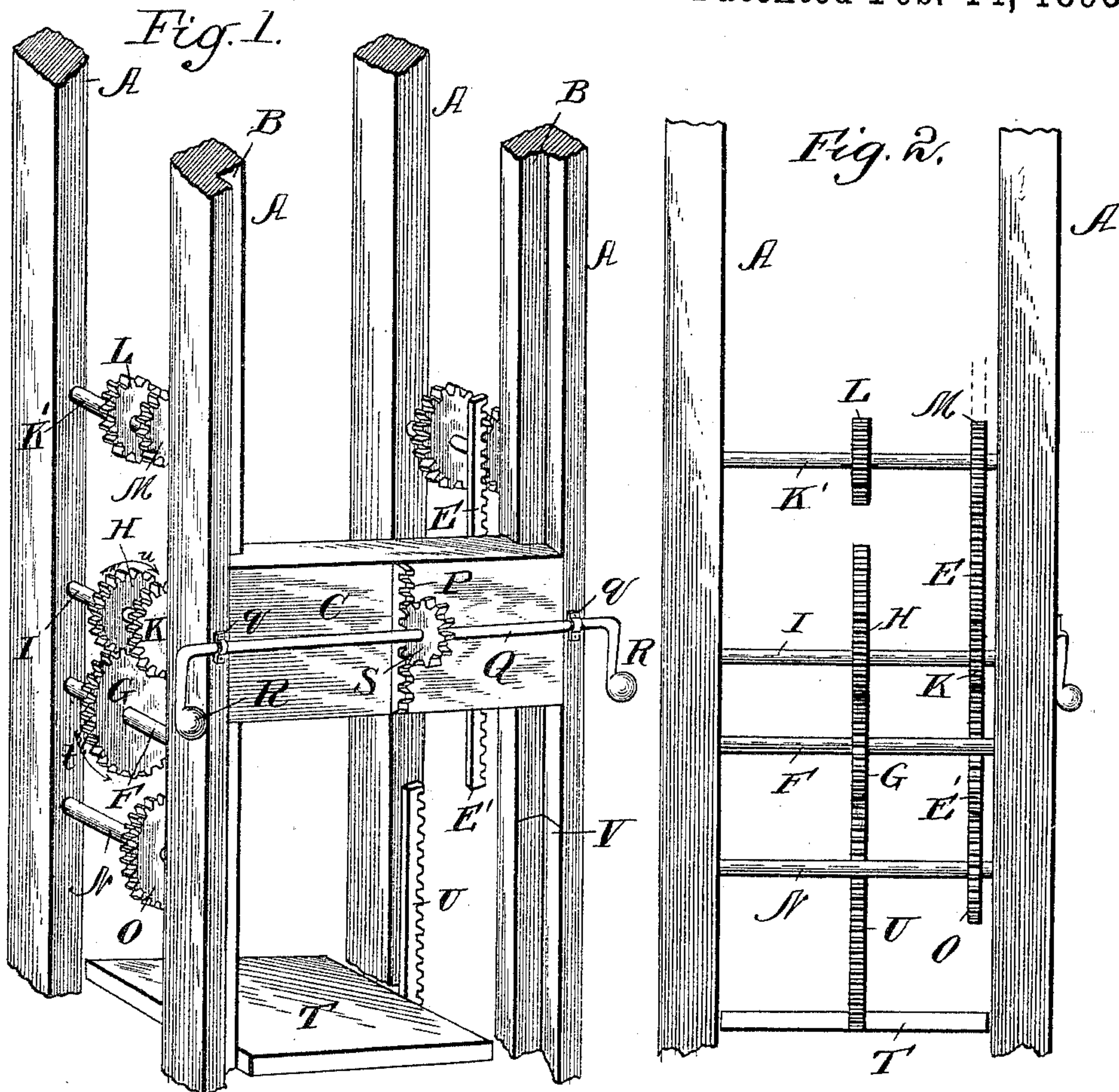


(No Model.)

P. J. SCHREIBER.
AUTOMATIC ELEVATOR GATE.

No. 491,601.

Patented Feb. 14, 1893.



Witnesses:

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UNITED STATES PATENT OFFICE.

PHILIP J. SCHREIBER, OF DAYTON, OHIO.

AUTOMATIC ELEVATOR-GATE.

SPECIFICATION forming part of Letters Patent No. 491,601, dated February 14, 1893.

Application filed January 12, 1891. Serial No. 377,565. (No model.)

To all whom it may concern:

Be it known that I, PHILIP J. SCHREIBER, a citizen of the United States, and a resident of Dayton, in the county of Montgomery, State of Ohio, have invented certain new and useful Improvements in Automatic Elevator-Gates; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in automatic elevator gates; and the object of the invention is to provide simple and effective means for automatically opening and closing the gates at the different floors or landings of an elevator shaft or well as the car passes such doors on its passages up and down the elevator shaft.

With these ends in view, my invention consists in the peculiar construction and arrangement of parts as will be hereinafter fully pointed out and claimed.

In the accompanying drawings—Figure 1 is a perspective view of a section of an elevator shaft showing my improvements applied thereto; Fig. 2 is a side elevation of the same; and Fig. 3 is a detail view of one of the doors or gates.

Like letters of reference denote corresponding parts in the several figures of the drawings, referring to which,

A designates the four guide posts or pillars which form the corners of an ordinary elevator shaft or well. The two front pillars are cut away or recessed on their adjacent faces to form longitudinal ways B for the gates or doors C one of which is situated at each floor or story of the building in which the elevator is placed. The ends of the door C are made of less thickness than the body thereof to provide the projecting portions *c* which extend over the ways B on the front pillars or guide posts A; and to enable said doors C to move more readily over said ways a series of rollers or caster wheels D is journaled in suitable recesses in the outer ends of said doors and these wheels contact with or bear against the pillars or guide posts A.

To the back of the doors C are attached two sets of parallel toothed or rack bars E,

E', the bars E extending above and the bars E' extending below the door as shown in Fig. 3.

In the side pillars or guide posts A on both sides of the elevator shaft or well, slightly below each floor of the building is journaled a transverse shaft F and on this shaft is rigidly secured a gear wheel G the teeth of which mesh with a gear wheel H rigidly secured on a shaft I journaled above and extending parallel to the shaft F. On the shaft I is also secured another gear wheel K, the teeth of which are adapted to mesh with the racks E, E', attached to the door C for a purpose to be hereinafter pointed out. Above the shaft I is arranged another shaft K' on which are secured two gear wheels L, M, which are arranged in the same vertical planes as the gear wheels H, K, respectively, and below the shaft F is journaled another parallel shaft N on which is secured a gear wheel O said wheel O being in the same vertical plane as the wheels K, M, on the shafts I, K'.

On the outer face of the doors C is arranged a vertical rack or toothed bar P and in suitable bearings *q* on the outer faces of the front pillars or guide posts A is journaled a transverse shaft Q provided at its ends with handles R having their outer ends enlarged to add weight thereto. On the shaft Q is secured a pinion S adapted to mesh with the teeth on the vertical rack bar P.

The elevator car or carriage T is fitted in the elevator shaft or well and connected with suitable operating mechanism, not shown in the drawings. The car or carriage T is also provided on opposite sides with upwardly extending parallel rack bars U arranged in the same vertical plane as the gear wheels G, H, L.

To one of the guide posts or pillars A is attached a stop V which serves to limit the downward movement of the door C.

The operation of my invention is as follows:—As the elevator car or carriage is moved upwardly in the elevator shaft or well the toothed bars U thereon mesh with the gear wheels G on opposite sides of the elevator shaft and operate to rotate said wheels and shafts in the direction indicated by the arrow *t*. This movement of the gears G rotates the wheels H on the shafts I in the reverse direction, as indicated by the arrow *u*

and the gears K on said shafts mesh with the racks E attached to the door C and operate to move such doors downwardly so that as the car T reaches the level of a floor the door C closing the opening into the elevator shaft from that floor will be down below the level thereof. As the door moves down, the racks E thereon mesh with the gear wheels O and the door is thus kept in line and held against lateral displacement. The stop V is arranged below the level of the floor so far that when the lower edge of the door rests thereon the upper edge will be below the floor and out of the way. As the car continues on its way up the shaft the racks U thereon mesh with the gears L and said wheels and shafts K' being rotated in the direction indicated by the arrow z the gears M on said shafts mesh with the racks E on the door C and operate to raise the same to its normal closed position. While the door C is being moved up or down the pinion S on the shaft Q meshes with the vertical rack or bar P on the door and when the door has reached its upper closed position the weighted handles R on the shaft Q tend to keep it in such position and prevent it being moved by any slight force. When the car or carriage T descends, the operation above described is reversed, the door being lowered as the car comes opposite the floor and raised after it has passed.

In the drawings I have shown but one section of an elevator shaft, but it will be un-

derstood that the mechanism herein described and illustrated is duplicated at every floor or section of the shaft.

I am aware that changes in the form and proportion of parts and details of construction of the devices herein shown and described as an embodiment of my invention can be made without departing from the spirit or sacrificing the advantages thereof, and I therefore reserve the right to make such changes and alterations as fairly fall within the scope of the same.

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

The combination of an elevator car provided on opposite sides with upwardly extending rack bars, a sliding gate provided on its outer face with a central vertical rack, a transverse shaft journaled in bearings on the guide posts of the elevator shaft and having the weighted handles at its ends, a pinion secured on said shaft and meshing with the vertical rack on the outer face of the door, racks attached to and extending above and below the door, and a train of gears meshing with said racks and with the racks on the elevator car, substantially as described, for the purpose specified.

PHILIP J. SCHREIBER.

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