

(No Model.)

F. P. HINDS.
AUTOMATIC ELEVATOR GUARD.

No. 305,000..

Patented Sept. 9, 1884.

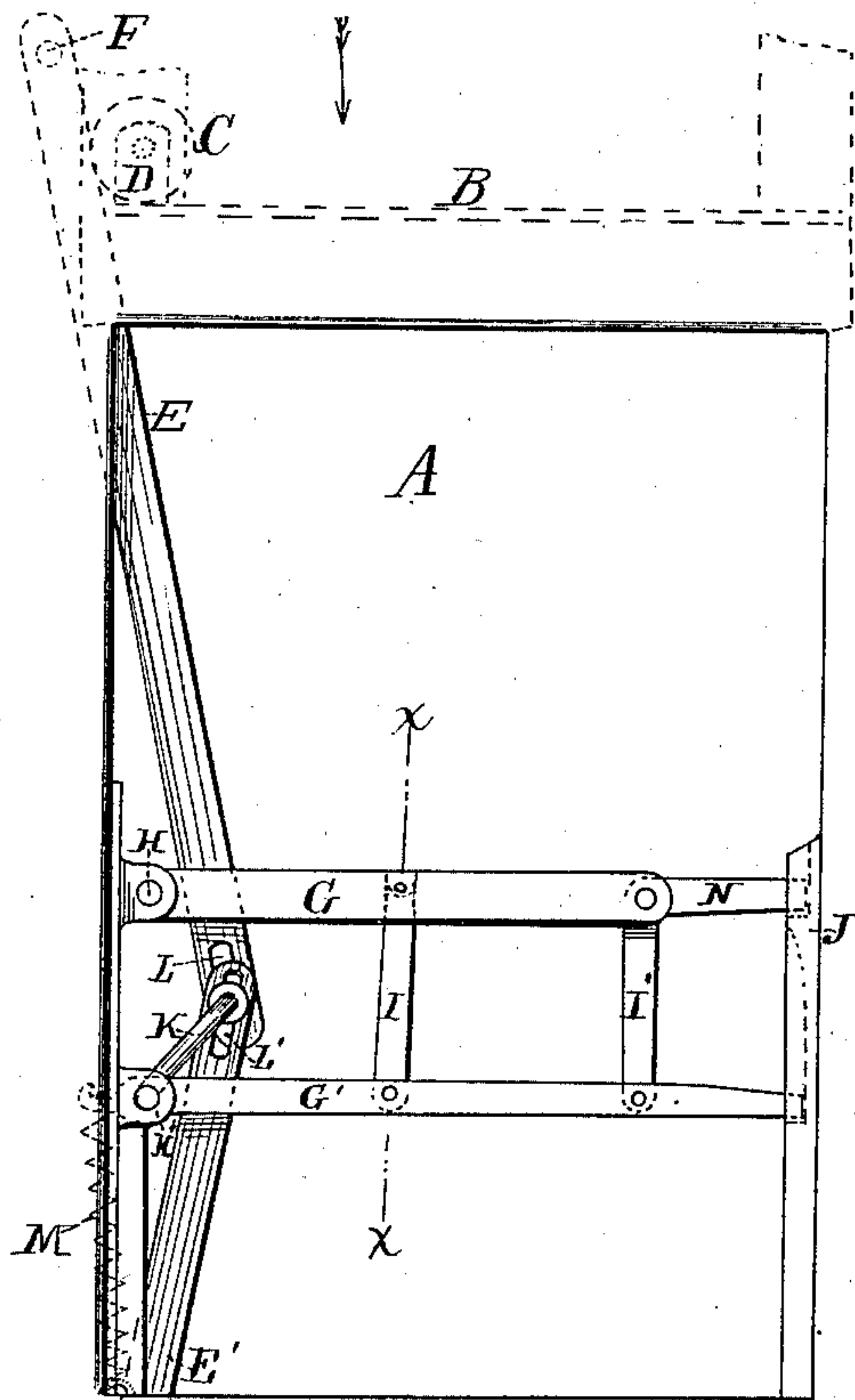


Fig. 1.

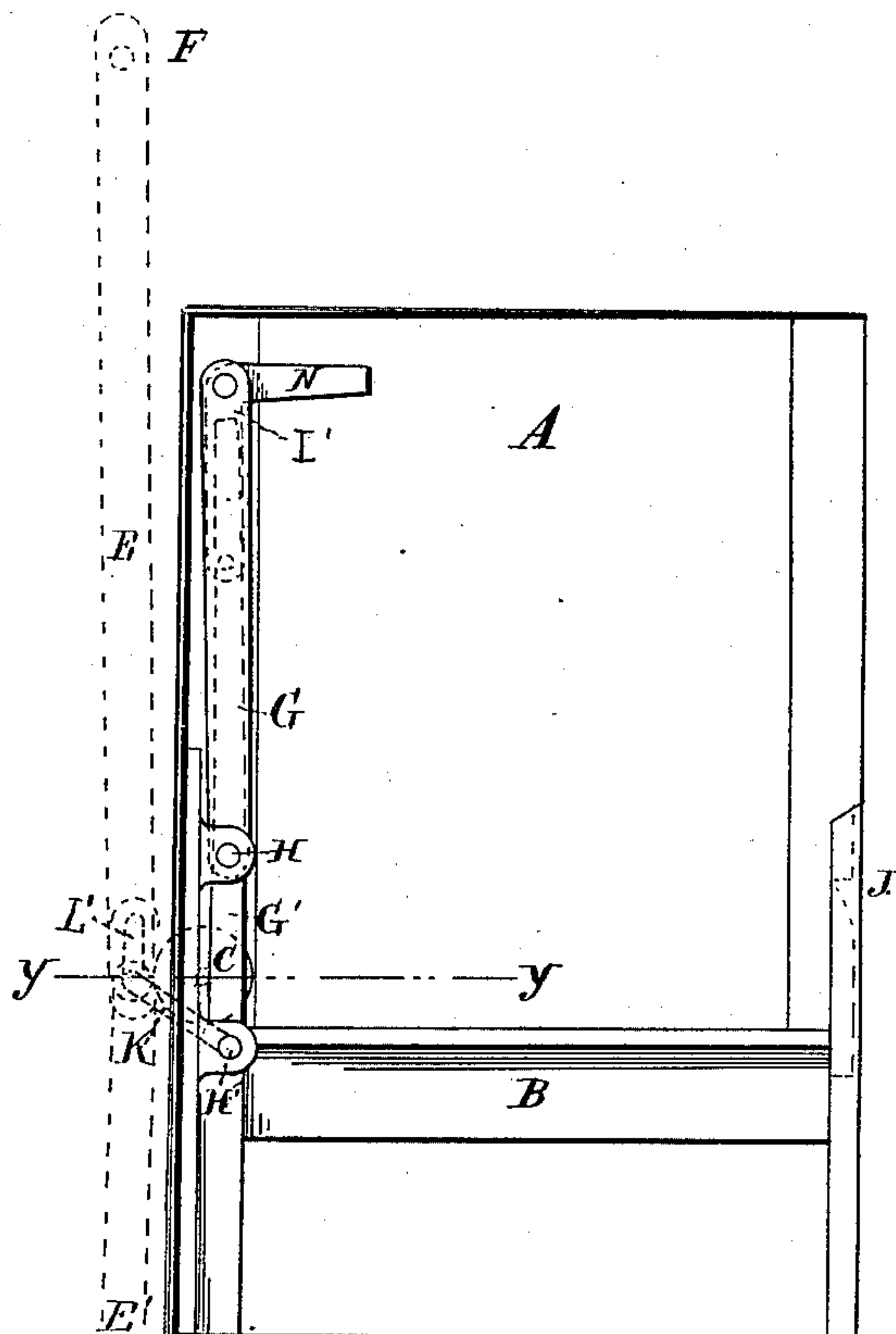


Fig. 2.

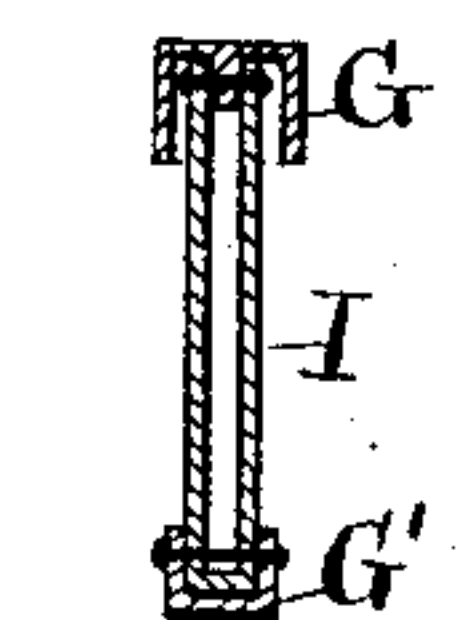


Fig. 3.

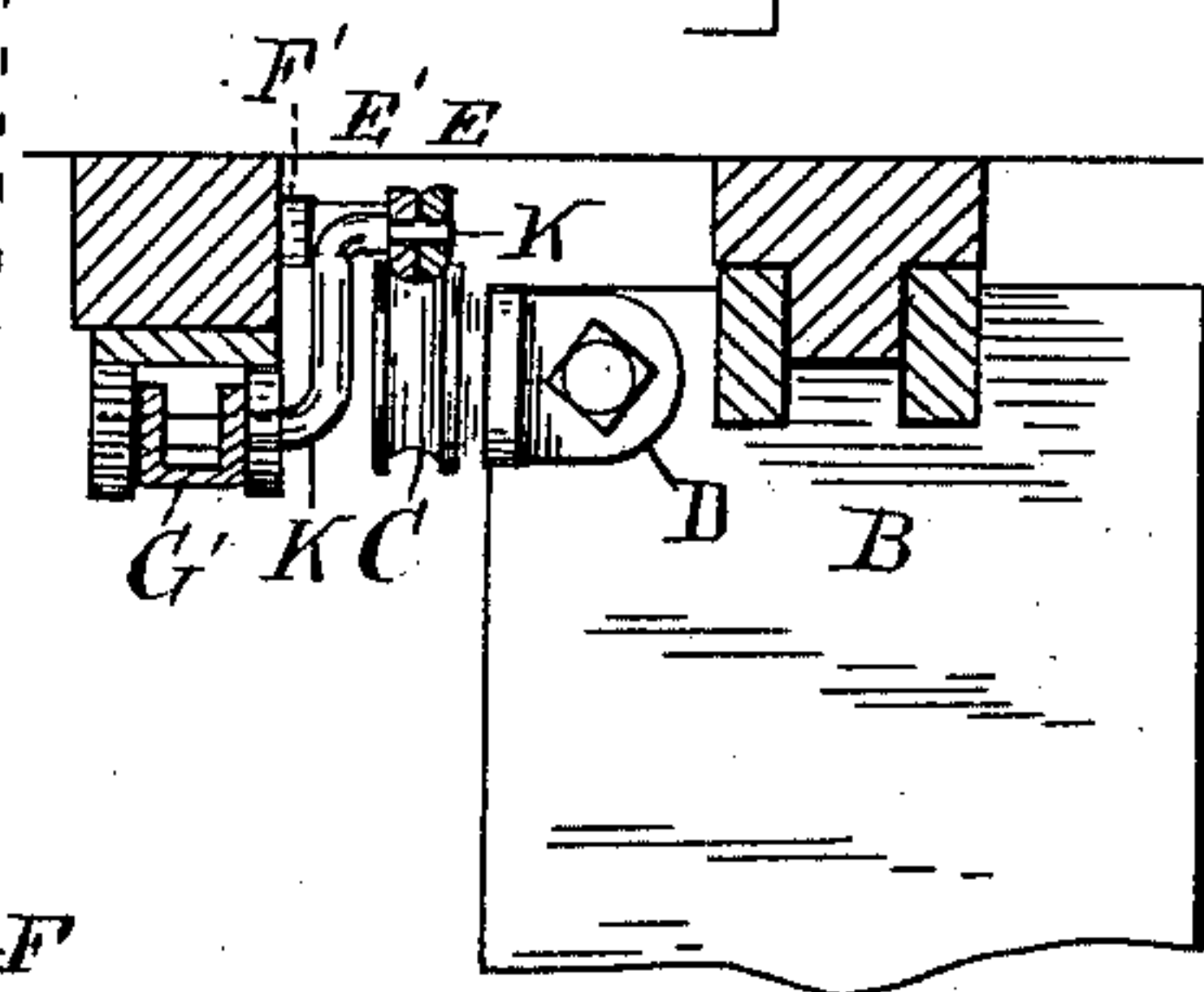


Fig. 4.

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AUTOMATIC ELEVATOR-GUARD.

SPECIFICATION forming part of Letters Patent No. 305,000, dated September 9, 1884.

Application filed May 31, 1884. (No model.)

To all whom it may concern:

Be it known that I, FRANKLIN P. HINDS, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Automatic Elevator-Guards, which will, in connection with the accompanying drawings, be hereinafter fully described, and specifically defined in the appended claims.

This invention relates to guards or gates to elevator-wells, which are placed at the openings or doorways leading into the well, and which are automatically opened and closed at the proper times by the movement of the elevator-car; and it consists in the construction and combination of the divers devices embodied therein, as hereinafter more particularly and fully set forth and claimed.

In the accompanying drawings, Figure 1 is front elevation of my improved guard, shown as closed across the usual doorway or opening leading to the elevator-well and car, the bottom of the car being indicated by dotted lines as descending from above the opening, and with the truck attached thereto just in contact with one of the guard-operating levers, the ends of said levers which are pivoted to the inner face of the wall of the well being also indicated by dotted lines. Fig. 2 is also a front elevation showing the guard raised and folded back against the jamb of the doorway by such contact and action of the descending car against the guard-operating levers, and the car nearly down to its position to receive goods or passengers through the open door. Fig. 3 is a vertical cross-section taken on line *x x*, showing the construction and mode of pivoting the two iron guard-bars together. Fig. 4 is a horizontal section taken on line *y y*, Fig. 2, showing a portion of the platform of the car and one of the usual ways upon which it is supported and guided, the truck secured to the car for operating the guard-bar levers, and the crank to which the lower gate or guard-bar is secured, and which extends through the slotted ends of the vertical levers through which the guard-bars are raised.

A represents a doorway or opening into the well of the elevator; B, the platform of the elevator-car; C, the truck, which is journaled in a stand or bracket, D, bolted to the plat-

form of the car. E is the upper vertical lever; E', the lower vertical lever, said levers being respectively pivoted to the inner face of the wall of the elevator-well at F and F'. G is the upper bar of the guard when made double, and G' the lower bar, said bars being respectively pivoted to the door-jamb at H and H', as shown, and united by one or more pivoted connecting-bars I and I', arranged to fold within the bars when in the position shown in Fig. 2, and when closed across the doorway their outer ends are supported against lateral movement by a grooved catch, J, with which they interlock as they descend into their horizontal position, as shown in Fig. 1. G' is secured to a crank, K, which serves as the pivot of said bar at H', while its upper end is bent to pass through the slots L L' in the levers E E', thus forming a connection with said levers, by which the crank is operated to raise the guard-bars. As the guards G and G' return to their horizontal position by gravitation when released by the elevator-car movement, it is desirable to break the shock of such fall, and I therefore employ for that purpose a counteracting-spring, M, which is secured at its upper end to a projection on bar G', which extends back of its pivot into a space provided for it, and to also accommodate said spring while the lower end of the spring is secured to the floor or in any suitable manner, said spring being constructed and arranged to exert sufficient contractile force to restrain the too violent falling of the guards, but not enough to prevent their readily assuming their said guarding position across the doorway. The bar G' extends entirely across the doorway, while the upper bar, G, is shorter, but lengthened by the arm N of the connecting-bar I', which is so arranged and pivoted to the two bars G and G' that when the bars are raised into their idle position against the door-jamb and infolded one within the other the extension N still retains its horizontal position, as shown in Fig. 2, and thus shortens the vertical height of guard G', thereby adapting it to readily and conveniently pass and rest under the transom of the doorway when lower than the ordinary height.

The practical operation of my said improvement is as follows: When the car B is descend-

ing or ascending, as it approaches the several openings leading to the well, which are provided with my guards, its truck C, provided for that purpose, comes in contact with the edge of the upper or lower lever, E or E', according to the direction in which it is moving. If descending, as indicated in Fig. 1, it strikes against the edge of lever E, which lever is constructed of iron thin enough to play freely between the car and wall, while it is of sufficient width and strength to perform the service required of it with certainty, and is thus by the descent of the car forced backward or outward from the opening A, together with its connected lever E', and as the two levers are thus moved they cause crank K to be thereby turned to the extent of a quarter-revolution, and such movement of the crank raises bar G' and its connected bar G out of the catch J, carrying said bars up into the folded position shown in Fig. 2. Thus the guard or gate to the doorway or opening leading to the well and car is automatically opened by the approaching car, and so held open during the stoppage of the car at that floor, and when the car continues its descent to the floor below, passing by and out of contact with lever E', it gradually releases said levers from lateral pressure, and the weight of the gate-bars, which are arranged to have an inclination to fall by their gravity as soon as they are so released, carries them down under the checking restraint of spring M into their horizontal guarding position across the doorway, as shown in Fig. 1, thus automatically guarding the passage to the well, and making it safe against walking into the same when the car is not present to receive passengers or goods. When the elevator-car ascends the well, the automatic opening and closing of the guards at the doors of the successive stories of the building is accomplished in the same manner as in its descent, just described, by simply a reversal of the order of its contact with levers E and E'. The position of the platform of the car relatively to the landing or floor at the time the doorway is thereby fully unbarred may be adjusted to be level therewith, or as much above as may be desired, for convenience of loading and unloading freight.

In order to secure the requisite strength and lightness of bars G and G', and to have them conveniently capable of being folded one within the other to economize room, when in their idle position, I have constructed them of suitable sheet-iron bent into the hollow form shown in Fig. 3, which renders them sufficiently stiff and strong for the purpose, and light and durable, and by making one slightly smaller than the other it may be infolded in the larger, so as to occupy less room in the doorway when idle, thus possessing advantages over the wooden and iron bars heretofore used for such purpose.

I claim—

1. The levers E and E', respectively pivoted at F and F', and provided with slots L and L', crank K, pivotally supported at H', and acted upon by both said levers through the engagement of its wrist-pin with said slots L L', bar G', attached to and operated by said crank, and truck C, arranged upon car B, so as to engage and operate levers E and E', all substantially as and for the purposes specified.

2. The crank K, supported and operated in the manner and by means substantially as described, bar G', secured to and operated by said crank, and bar G, connected with bar G', and both so constructed and arranged that in their joint operation one folds within the other when they are raised to their vertical position, substantially as specified.

3. Guards G and G', pivoted to the door-jamb and connected by a pivoted angle-bar, I', so arranged that when guards G and G' are raised from a horizontal to a vertical position by means substantially as described the arm N of bar I', which extends guard G when in a horizontal position, will shorten said guard when in a vertical position by assuming a position at right angles thereto, as and for the purposes specified.

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