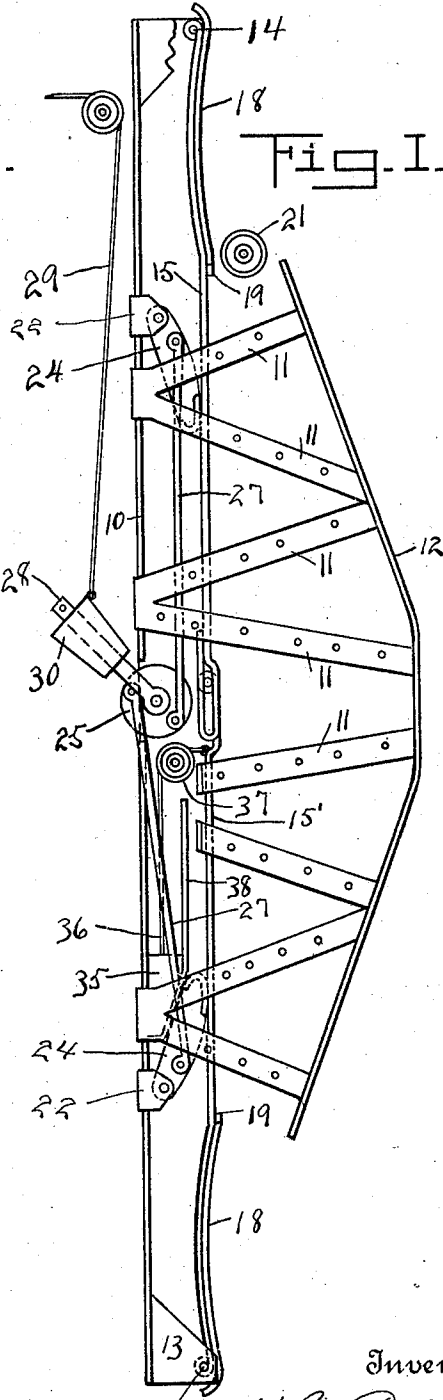
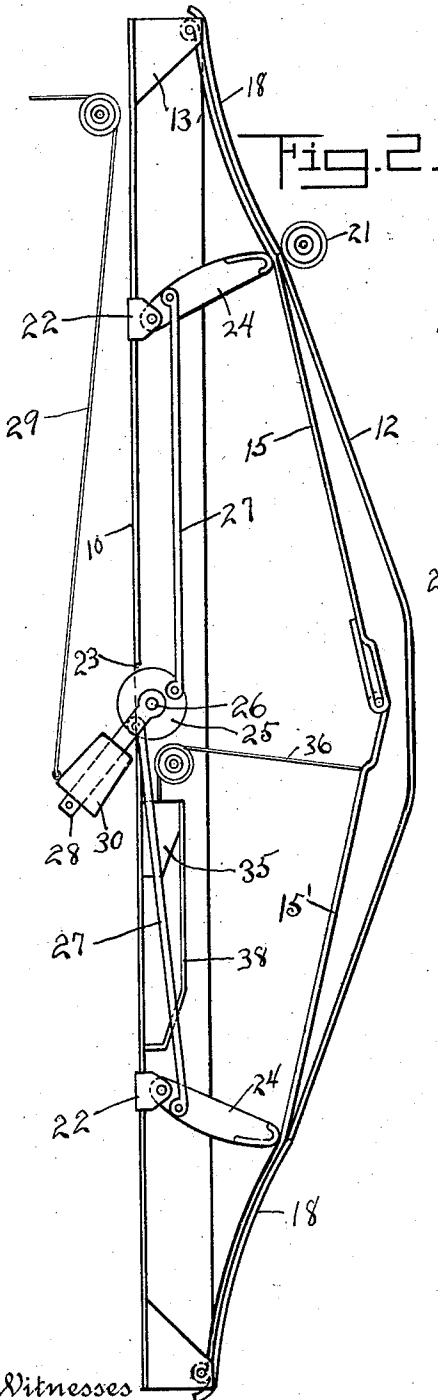


H. G. PEELLE.  
 AUTOMATIC ACTUATOR FOR ELEVATOR DOORS.  
 APPLICATION FILED NOV. 21, 1910.

987,011.

Patented Mar. 14, 1911.

2 SHEETS-SHEET 1.



Witnesses

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987,011.

2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

HENRY G. PEELE, OF HOLYOKE, MASSACHUSETTS.

AUTOMATIC ACTUATOR FOR ELEVATOR-DOORS.

987,011.

Specification of Letters Patent.

Patented Mar. 14, 1911.

Application filed November 21, 1910. Serial No. 593,529.

*To all whom it may concern:*

Be it known that I, HENRY G. PEELE, a citizen of the United States of America, residing at Holyoke, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Automatic Actuators for Elevator-Doors, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to improvements in automatic actuators for elevator doors and although applicable for any manner of elevator on which either vertically or laterally movable doors or gates are desired to be actuated at the will of the operator, still, the same are more especially designed for use upon freight elevators.

The primary object of the invention is the provision of a cam mechanism carried by the vertically moved elevator car and adapted to be brought into or out of operative relation with respect to the door or gate operating mechanism of the respective floors or stories of the building in which the elevator is installed.

A further object is to provide a cam having a fixed and a movable section and adapted to carry out these functions and in which there is included a double or reinforced connecting switch hinged at the extreme striking points and provided in the center with a slip joint, both sections being operable by one or two cam members and the further provision of a frog connection between the movable and fixed sections.

With these objects in view and others that will appear as the nature of the invention is better understood, the same consists in the novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings and pointed out in the appended claims.

In the drawings forming a part of this application and in which like designating numerals refer to corresponding parts throughout the several views, Figure 1 is a side elevation of the improved cam track and its operating elements removed from the elevator and showing a roller upon the elevator door operating mechanism and the

track sections positioned out of contact therewith, Fig. 2 is a side view similar to Fig. 1, but showing the cam track in operative relation with respect to the roller of the door mechanism and omitting the showing of the supporting truss work for the fixed track section, Fig. 3 is a view similar to Fig. 2, but showing the use of return springs instead of the weights heretofore shown, Fig. 4 is a fragmentary view showing in dotted lines the relative positions of the roller and of the door mechanism with the cam track in engageable positions therewith and in full lines showing the same as positioned when at rest, Fig. 5 is a detailed plan view of the slip joint connection between the engaging ends of the two movable cam sections, and Fig. 6 is a detailed plan view of the frog junction between the adjacent ends of the movable and fixed sections.

Referring more in detail to the drawings, it is first to be understood that the side of the elevator car moving adjacent and parallel to the inclosing side wall of the elevator shaft is provided with the complete mechanism as shown in either Fig. 2 or Fig. 3 of the drawings, which mechanism is flatly secured to such elevator car side in any convenient manner as by bolting the angle iron base support 10 to the under sill and an upright of the elevator cab or car and also by securing iron braces to the upper cross head of the elevator, the truss work 11 connecting said base 10 and a fixed track section 12. Upon the opposite ends of said base support are provided the hollow blocks 13 carrying the pivot pins 14 therethrough to which are hinged the movable cam track sections 15, 15', which are centrally connected by the slip joint construction shown in detail in Fig. 5 and in which the inner end of the section 15 is overturned and bifurcated thereby forming a loop and receiving within such bifurcations the tongue 16 of the section 15' and within said loop the cross pin 17 of such tongue, all of which elements are slidably hinged in connection with each other.

Reinforcing track sections 18 are provided overlying the outer ends of the movable track and overlapping the hinge bolts 14

thereof and terminating in a V point 19 upon the movable carrying sections 15 and 15' and which point is adapted to be received within the V notch 20 of the ends of the stationary section 12 when the former is brought into abutting and operative relation therewith. This arrangement of abutting track ends provides a frog construction which holds the respective sections of the track rigidly in alinement when the switch is closed, in which position the movable sections 15 and 15' act as an underlying support for said connections and the adjacent ends of the tracks.

The functions of the fixed and movable track sections being to form either a broken or unbroken cam track upon which may travel the roller 21, which is connected to or carried by the mechanism which is designed to operate the doors or gates of an elevator, the mechanism effecting such change in the continuity of the track necessarily forms an important element of the invention and this will now be described, it being noted that it is desirable to operate such elements from the interior of the moving elevator car. Upon said base member 10 which is preferably of angle iron as plainly shown in the drawings, there is provided pivot straps 22 arranged oppositely and at equal distances from the central opening 23 of the base flange of said angle iron support 10. Pivoted to said straps are cam levers 24 being of such a length and having such an exact pivotal point as to be positionable perpendicularly with respect to the frog junction 19, 20 between the movable and fixed track sections. For operating said cam levers 24 upon the pivot straps 22 and thereby to force outwardly from the base, the hinged movable track sections 15, 15' so that the same will contact with the stationary section 12, there is provided the disk member 25 journaled upon a stub shaft 26 of the side flange of the base angle iron 10.

Connecting rods 27 are employed to link opposite sides of the disk 25 with the cam levers 24 and whereby said levers are manually operable toward or away from each other upon the rotation of said disk. It is to be noted that said cam levers, the movable track sections and the operating disk and connecting rods are positioned between the side trusses 11 of the fixed track section 12 and said disk is so journaled as to partly project from the central cut away portion or opening 23. A lever 28 secured to said disk and connected by the cord 29 to some convenient point within the elevator car is adapted for rotating said disk and thus operating outwardly the connected cam levers 24, and the movable track sections upon an

upward impulse being imparted thereto, which results in the positioning of the elements as shown in Fig. 3. It will be evident that the position of the lever 28 upon said disk may be varied at will and for instance, as shown in Fig. 1, an upwardly pull of the cord 29 results in drawing the cam levers 24 toward each other and thus disconnecting the track sections. In such arrangement of the lever as shown in both the said Fig. 1 and also in Fig. 2 a counterbalancing weight 30 is secured to the lever which results in normally holding said lever downward and consequently the track sections are in closed relations. This forcible actuation of the cam levers 24 and the movable track sections outwardly for connection with the fixed section having been described, it will be seen that for the purpose of returning the movable sections to render the device inoperative, it is only necessary to include an automatic return of the movable hinged track sections to a normal position upon the inward movement of the cam levers 24 and the consequent removal of the perpendicular support to such movable sections. Such return means may be in the form of return coil springs 31, as shown in Figs. 3 and 4 which surround movable rods 32 hinged to the movable sections 15, 15', as at 33 and such springs being seated between the base flange of the angle iron 10 and the washers 34 carried upon the outer ends of said rods and whereby the tendency to return the movable sections to inoperative position will be evident. However, in lieu of such return mechanism a weight 35 as shown in Figs. 1 and 2 may be employed, which is connected by the cord 36 running over the pulley 37 to one or both of the movable track sections 15, 15' at any desired point thereon, said weight preferably moving within a suitable housing 38 provided therefor upon the angle iron 10.

From the present description, the operation of the device is believed to be evident.

Referring more particularly to Fig. 4 in which the elevator car 39 is provided with the described mechanism, while the pulley 21 carried by the mechanism designed to operate the doors or gates of the elevator shaft is represented in dotted lines in its various assumed positions, it will be seen that with the track sections separated from each other, an upward movement of the elevator car and tracks allows said roller 21 to freely pass between said track sections and without contacting in any manner any portion of the actuating means. On the other hand, however, with the track sections connected as also shown by said view by the movable section in dotted lines, such

roller 21 will revolve and travel upon the surface of the track sections 18 and 12 of the cam a horizontal distance equal to the wipe or sweep of the cam and in consequence thereof the door or gate mechanism connected to said roller 21 will be actuated, and thereby opening the door or gate vertically, it being noted that the door or gate having been raised vertically, the roller 21 will be held against the bearing surface of the cam track sections by the weight of the door or gate which is being operated and after passing the point of the greatest wipe or sweep, the roller will follow the lower incline of the cam track to a point of rest as shown in dotted lines of the upper position of said roller in Fig. 4 of the drawings. It will be further noted that in the case of vertically moving gates or doors that they are brought to a closed position by their own weight.

I claim:

1. A device of the class described comprising a stationary cam track section, two movable track sections hingeably positioned in connectible relations thereto, means for connecting said movable and fixed track sections together, automatic means for disconnecting said sections upon a reverse movement of said former means, a slip joint connection between said movable track sections, and a door operating element adaptable for engagement by said track.

2. A device of the class described comprising an angle iron base member, hollow blocks mounted upon the opposite ends thereof, movable track sections hinged at their opposite ends within said blocks, a slip joint connection between the inner ends of said sections, a stationary track section, a door operating member operably positioned with respect to said track sections, and means for joining said movable track sections with said fixed section.

3. A device of the class described comprising an angle iron base member, hollow blocks mounted upon the opposite ends thereof, movable track sections hinged at their opposite ends within said blocks, a slip joint connection between the inner ends of said sections, a stationary track section, a door operating member operably positioned with respect to said track sections, lever cams carried by said angle iron for connecting said movable sections with the fixed section, and rotatable means mounted upon said angle iron midway between said lever cams and adapted upon rotation to operate said lever cams in either direction.

4. A device of the class described comprising an angle iron base member, hollow blocks mounted upon the opposite ends thereof,

movable track sections hinged at their opposite ends within said blocks, a slip joint connection between the inner ends of said sections, a stationary track section, a door actuating means operably positioned with respect to said track sections, lever cams carried by said angle iron for connecting said movable sections with the fixed section, rotatable means mounted upon said angle iron midway between said lever cams and adapted upon rotation to operate said lever cams either outwardly or inwardly, and automatic means for moving said movable track sections in one direction upon an inward movement of said lever cams.

5. A device of the class described comprising a base angle iron, hollow blocks mounted upon the ends thereof, two movable track sections pivoted at their outer ends within said blocks and having a slide hinged connection therebetween, relatively short superposed track sections overlying the outer ends of said sections and said pivotal connections, a substantially arc shaped fixed track, struts positioned between said angle iron and fixed track, means for connecting and disconnecting said movable and fixed track sections, and a door operating roller adapted to contact said track sections only when the same are positioned in their connected relations.

6. A device of the class described comprising a base angle iron, hollow blocks mounted upon the ends thereof, two movable track sections pivoted at their outer ends within said blocks and having a slide hinged connection therebetween, relatively short superposed track sections overlying the outer ends of said sections and said pivotal connections, a substantially arc-shaped fixed track, struts positioned between said angle iron and fixed track, lever cams pivoted to said angle iron, a rotatable member mounted upon said angle iron midway between said cams, connecting rods between said cams and rotatable member and adapted for connecting said track sections together, an automatic return means secured to one of said movable tracks at a point between the pivotal and hinged point thereof, and a door operating roller contactable by said tracks only when connected together.

7. A door operating means for elevators comprising fixed and movable cam track sections, a frog connection between said track sections, a cam lever adapted to throw said sections together at the frog connection therebetween, and a door actuating element adapted to contact said cam sections.

8. A door operating means for elevators comprising the combination with an elevator car, of fixed and movable cam track

sections, a frog connection between said track sections, a cam lever adapted to throw said sections together at the frog connection therebetween, a door actuating element  
5 adapted to contact said cam sections, an angle iron base member to which said cam lever is pivoted, and a rotatable disk and connections between the same and said cam lever and adapted to be moved within the

elevator car to position said cam lever in 10 perpendicular relation to the cam track sections at their point of connection.

In testimony whereof I affix my signature in the presence of two witnesses.

HENRY G. PEELLE.

Witnesses:

HENRY E. PEELLE,  
BENJ. S. DHUY.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."

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