(No Model.) 2 Sheets—Sheet 1.

W. E. NICKERSON.

ELECTRICAL SWITCH FOR ELEVATORS.

No. 404,221. Patented May 28, 1889.

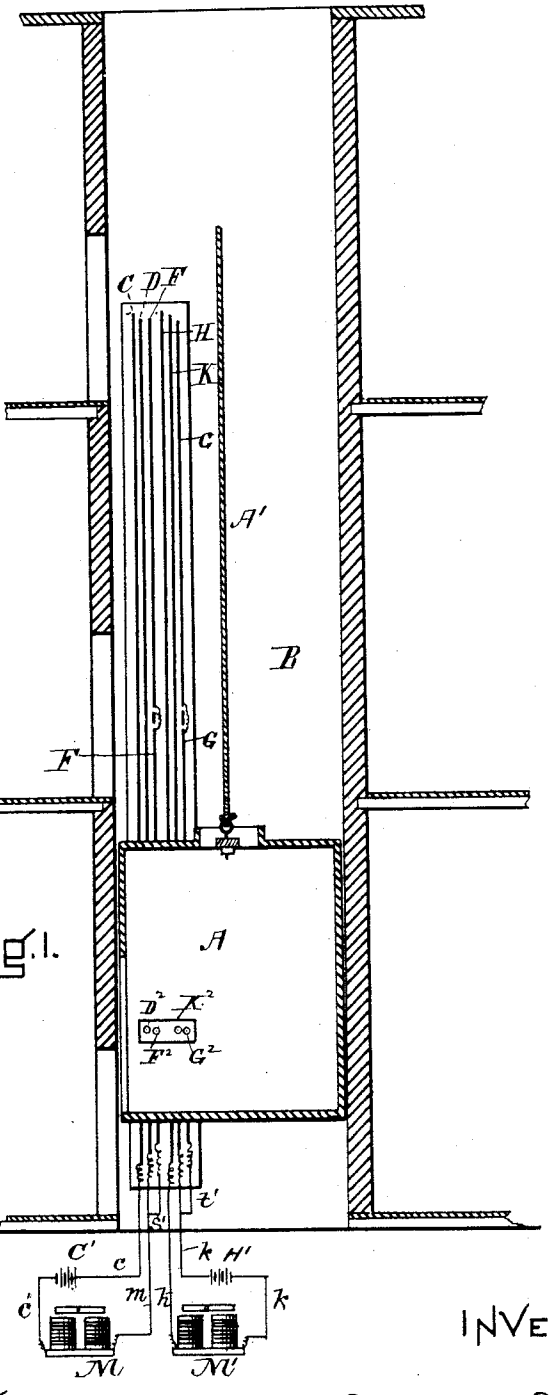

Fig. 1.

WITNESSES.

Frank A. Parker
Matthew M. Blunt.

INVENTOR.

William E. Nickerson

(No Model.) 2 Sheets—Sheet 2.

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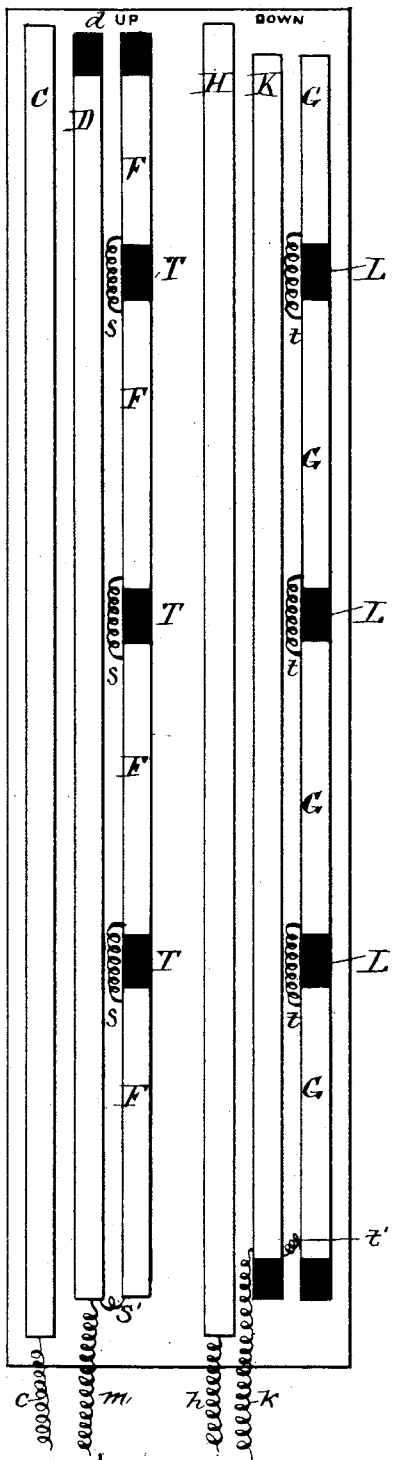

Fig. 2.

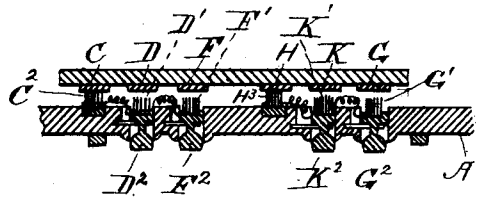

Fig. 3.

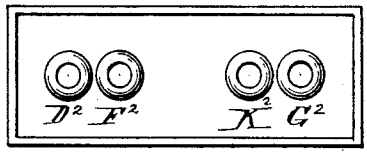

Fig. 4.

WITNESSES.

Fredk. Parker

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INVENTOR

William E. Nickerson

UNITED STATES PATENT OFFICE.

WILLIAM E. NICKERSON, OF CAMBRIDGE, MASSACHUSETTS.

ELECTRICAL SWITCH FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 404,221, dated May 28, 1889.

Application filed February 23, 1889. Serial No. 300,833. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM EMERY NICKERSON, of Cambridge, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Electrical Switches for Elevators, of which the following, taken in connection with the accompanying drawings, is a specification.

The object of my invention is to place in the car and well-room of an elevator an electrical switch device that is simple in construction and sure to act with but slight skill on the part of the attendant.

It consists in placing in the well-room of an elevator vertical metallic strips or wires, some continuous and others severed at each floor, which act as electrodes, and in placing in the elevator-carriage a switch-block and push-buttons adapted to act as switches for connecting the electrodes.

My invention is illustrated in the following drawings, in which—

Figure 1 is an elevation showing such parts of an elevator as are required for illustrating my invention. Fig. 2 illustrates in an elevation the arrangement of the electrodes that are attached to the walls of the elevator-well. Fig. 3 is a cross-section taken through the electrodes, as shown in Fig. 2, and also through the switch-block shown in elevation in Fig. 4. Fig. 4 is an elevation of the switch-block.

In the drawings, Fig. 1, A represents the elevator-carriage, B the well-room, and A′ the hoisting-rope. In the same figure, M and M′ represent the electric devices, of any desired pattern, one, M, of which is intended to actuate the controlling mechanism for causing the elevator-carriage to go up and to stop it at any point during its ascent, and the other, M′, is intended to actuate the controlling mechanism for causing the elevator-carriage to go down and to stop it at any point during its descent.

C′ and H′ are batteries or other electrical generators for actuating the electric devices M M′.

The leading feature of my invention is, that one or more of the electrodes are permanent fixtures, and are therefore not liable to get out of order.

It is obvious that the continuous electrodes may be wires attached to and following the elevator-carriage in the usual manner. It is the interrupted or severed electrodes only that must be fixed in relation to the walls of the elevator well-room, either outside of the carriage or stretched from the top to the bottom of the well-room and passing through the carriage.

C and D, Figs. 1, 2, and 3, represent strips of metal attached to the walls of the elevator-well, extending from near the bottom to near the top. These strips C and D are connected to the poles of a battery, C′, as shown in Fig. 1, and form continuous and fixed electrodes.

F F (see Figs. 1 and 2) represent strips of metal, which are placed vertically one above the other and are separated by blocks of insulations, T T, one for each floor. (See Fig. 2.) The strips F F F are electrically connected by wires S S S and by a wire, S′, to the continuous electrode D. The above-described strips comprise the electrodes for governing the upward movement of the elevator-carriage and its stops during its upward movement. A similar set of electrodes, H K G G, their insulations, L L, and connections *t t* are also shown in Fig. 2, and are used for governing the elevator in its downward passage.

My switch device is shown in Figs. 3 and 4.

C^2, Fig. 3, is a fixed metallic brush attached to the elevator-carriage, and is always in contact with the electrode C, which is electrically connected to the battery C′, Fig. 1, by the wire *c*, and through the battery C′ to the electric device M by the wire *c*′.

H^3, Fig. 3, is a metallic brush attached to the elevator-carriage, and is always in contact with the electrode H, which is electrically connected by the wire *h* to one pole of the electric device M′, and through the motor to the battery H′ by the wire *k*, Fig. 1. The metallic brush D′, Fig. 3, is held by a spring away from the electrode D, but may be pushed onto it by the push-button D^2. It will be observed that the brushes C^2, D′, and F′ are electrically connected together and to the electrode C. (See Fig. 3.) The brush F′ is held by a spring away from the electrodes F F, but may be pushed into contact with them by the push-button F^2. The electrodes D and F F are electrically connected together by the wires S S and S′, (see Figs. 1 and 2,) and also by

the wire *m* to the electric device M, so that if the electrodes C and D are connected by means of the fixed brush C^2 and the movable brush D′, then the circuit is closed and the electric device M will perform its work—that is, of actuating the controlling mechanism of the elevator that is required for causing the elevator-carriage to ascend, the elevator continuing to ascend so long as the brush D′ is held down, or until the brush D′ passes off from the electrode D onto the insulation, *d*, located at the top of the elevator-well. If the attendant pushes the brush F′ onto one of the electrodes F F, (the brush D′ being out of contact,) the circuit will be closed and the elevator-carriage will be moved upward until the brush F′ comes in the ascent of the carriage to one of the insulations, T T—that is, the one for the floor next above the one at which the elevator-carriage was when the attendant moved the push-button.

In the descent of the elevator-carriage the electrodes H K and G G and the brushes H^3, K′, and G′ are used for actuating the electric device M′, the mode of operation being the same as that described for actuating the controlling device when the elevator ascends.

I claim—

In an electrical switch device for elevators, the combination of the fixed continuous electrodes C and D and the fixed electrode F F, composed of sections, said sections all electrically connected together and having insulated spaces between them, said spaces corresponding to the various landings, with a switch mechanism within the elevator-carriage, consisting, first, of an electric brush in permanent contact with the electrodes C; second, a brush adapted to be manually placed in contact with but normally out of contact with the electrode D, and, third, a brush adapted to be manually placed in contact but normally out of contact with the electrode F F, an electric circuit, and an electric device for actuating the controlling mechanism of the hoisting apparatus, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 21st day of February, A. D. 1889.

WILLIAM E. NICKERSON.

Witnesses:
FRANK G. PARKER,
MATTHEW M. BLUNT.