

(No Model.)

C. ROSS.
ELEVATOR.

No. 474,609.

Patented May 10, 1892.

Fig. 2.

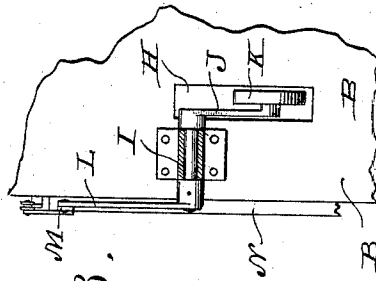
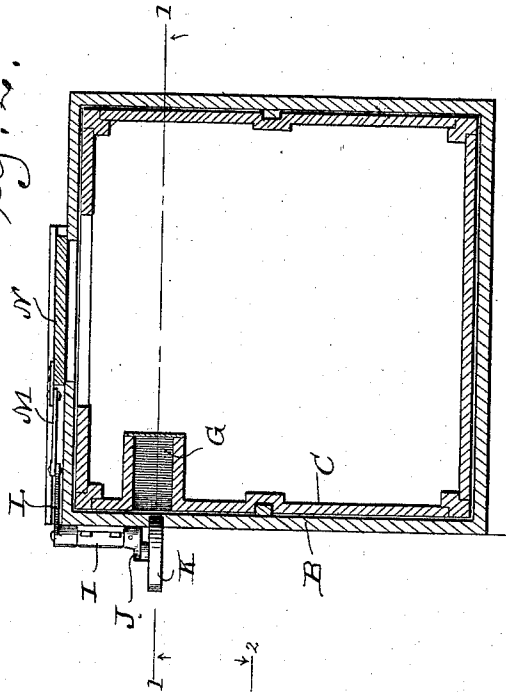
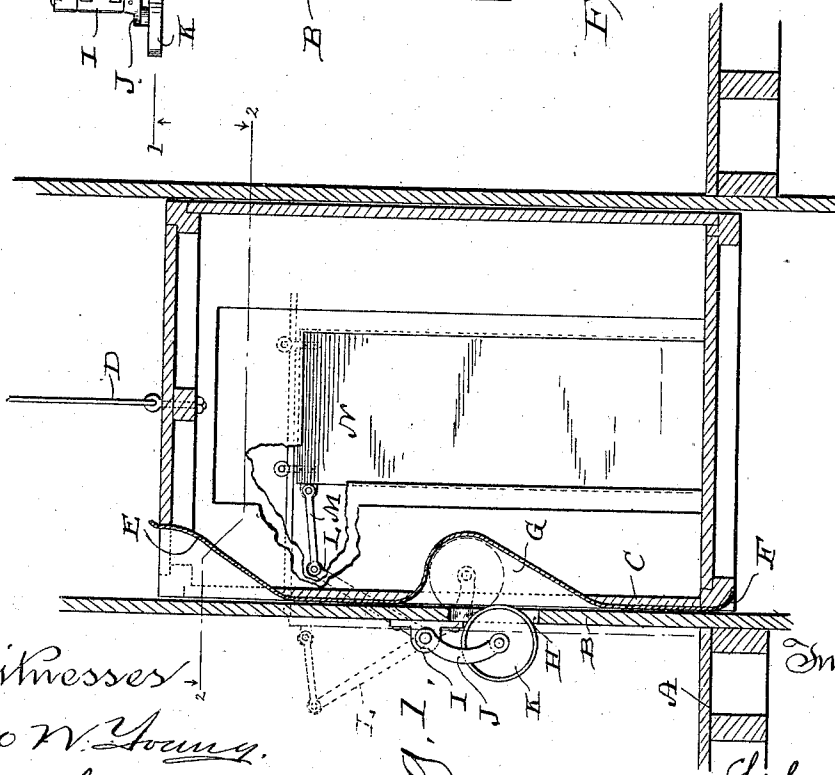


Fig. 3.



Witnesses,
Geo W. Young,
N. E. Oliphant

Fig. 1.

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UNITED STATES PATENT OFFICE.

CHARLES ROSS, OF MILWAUKEE, WISCONSIN.

ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 474,609, dated May 10, 1892.

Application filed May 15, 1891. Serial No. 392,843. (No model.)

To all whom it may concern:

Be it known that I, CHARLES ROSS, a citizen of the United States, and a resident of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Door-Closers for Elevators; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its object to provide a mechanism for the purpose of automatically closing the doors of elevators in case such doors have been inadvertently left open; and the said invention consists in certain peculiarities of construction and combination of parts to be hereinafter described with reference to the accompanying drawings and subsequently claimed.

In the drawings, Figure 1 represents a vertical transverse section of a portion of an elevator provided with my improvements, the section being taken on line 1 1 of the succeeding figure; Fig. 2, a horizontal section on line 2 2 of the preceding figure; and Fig. 3, a detail elevation of the door-actuating mechanism, partly in section.

Referring by letter to the drawings, A represents the floor of a building; B, a casing for the elevator-well; C, an elevator-cage, and D a raising and lowering cable for the cage.

As shown in Fig. 1, one wall of the cage C has its top and bottom shaped in such a manner as to form cam-surfaces E F, and intermediate of these cam-surfaces said wall of the cage is provided with a cam-pocket G, the latter being in register with a slot H in the adjacent wall of the well-casing.

Fast on the well-casing, adjacent to the slot H in one wall thereof, is a bearing I for a bell-crank, one arm J of the latter serving as a hanger for an anti-friction roller K in line with said slot, while the other arm L of the bell-crank has a link connection M with the elevator-door N, the latter being hung in such a manner as to slide back and forth, as is the usual way, although my improvements may be as readily employed in connection with a door hung on hinges.

In Fig. 1 the elevator-cage C is shown as being on a level with the floor A, and if the

door N be opened the link M will actuate the bell-crank to which it is connected, and thus the anti-friction roller K will be swung into the cam-pocket G of said cage. Assuming that the operator neglects to close the door N and the cage C is raised or lowered, the cam-pocket G, acting on the anti-friction roller K, will actuate the bell-crank on which said roller is hung, and this bell-crank, moving on its bearing, will operate the link M, and thus force said door into its normal or closed position.

In case a door above or below the cage has been opened and left in this position the ascent or descent of said cage will bring either one or the other of its cam-surfaces E F against the anti-friction roller relative to said door, and thus the latter will be automatically closed.

While I have described the anti-friction roller K as preferable, it is obvious that the same may be omitted from the bell-crank arm J, as the latter may be made the proper length to swing into the path of the cam-surfaces E F G shown and described or such other cam-surfaces as may be devised for the same purpose.

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

The combination of an elevator-cage having cam-surfaces at the extremities thereof and provided with a pocket intermediate of the cam-surfaces, a well-casing provided with a slot in register with said pocket when the cage is on a level with an adjacent floor, a bell-crank having its bearing on the well-casing and one of its arms positioned to come in and out of engagement with the casing-slot and cage-pocket, a door, and a link connecting this door and other arm of the bell-crank, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

CHARLES ROSS.

Witnesses:

N. E. OLIPHANT,
WM. KLUG.