

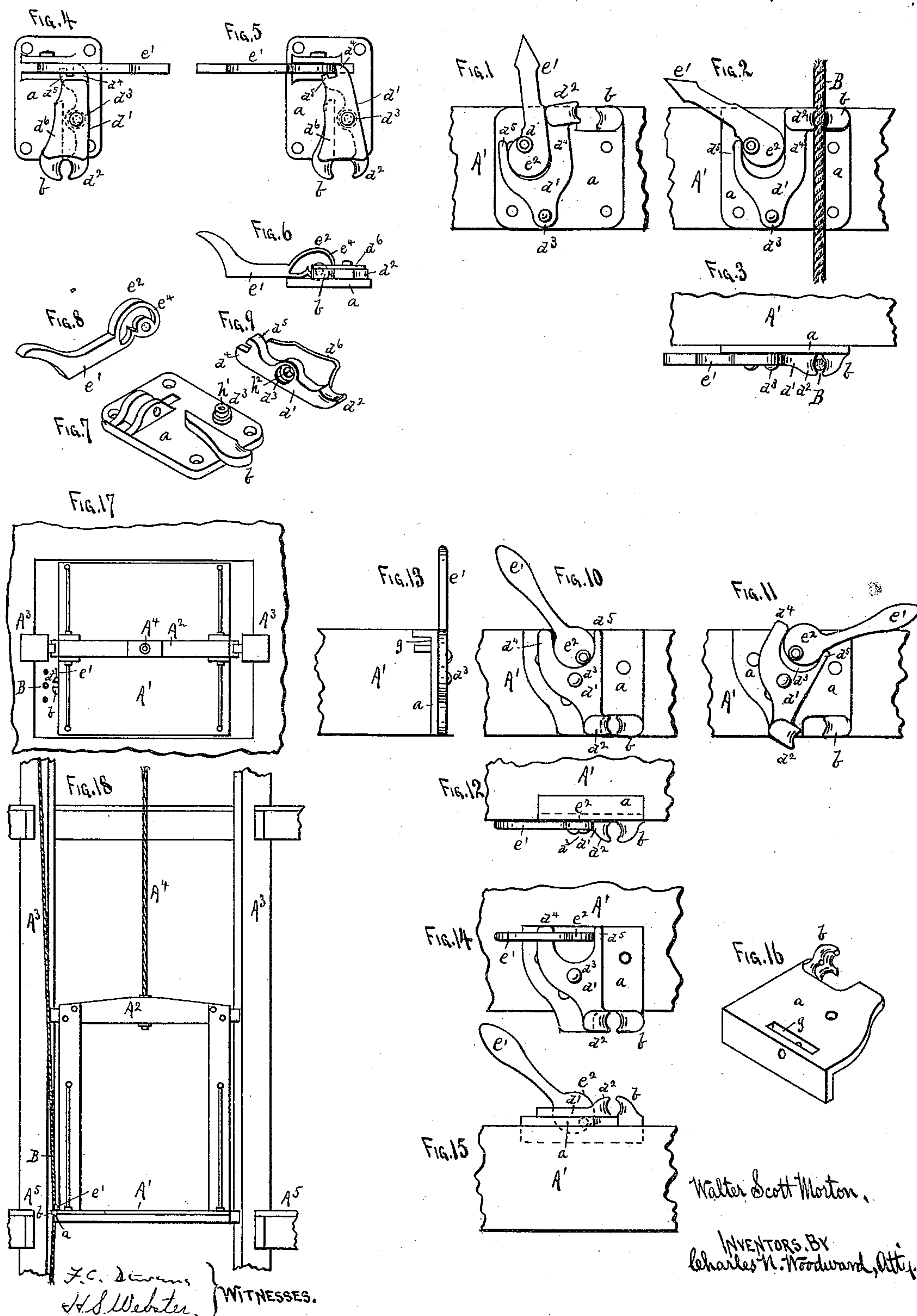
(No Model.)

W. S. MORTON.

LOCK FOR ELEVATOR CABLES.

No. 356,149.

Patented Jan. 18, 1887.



UNITED STATES PATENT OFFICE.

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LOCK FOR ELEVATOR-CABLES.

SPECIFICATION forming part of Letters Patent No. 356,149, dated January 18, 1887.

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To all whom it may concern:

Be it known that I, WALTER SCOTT MORTON, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Elevator Shifting or Stopping Cable Locks, of which the following is a specification.

This invention relates more particularly to that class of elevators used for elevating freight in mercantile and manufacturing buildings, and for similar uses; and it consists in the construction and mode of operation of a device whereby the shifting-cable or the stopping-rope may be locked to hold the elevator-platform at any desired point, as hereinafter shown and described, and specifically pointed out in the claim.

I have shown in the drawings several modifications of my invention, but all operating in substantially the same manner and by the same means, and producing the same effects.

Figure 1 represents a side view with the gripping-jaw open. Fig. 2 represents a side view with the gripping-jaw closed. Fig. 3 represents an edge view with the parts in the same position as in Fig. 2. Figs. 4, 5, and 6 represent a modification in the construction of the device, Figs. 4 and 5 being plan views showing the gripping-jaws in different positions, and Fig. 6 being a side view. Fig. 7 is a perspective view of the base-plate with the stationary gripping-jaw and ears for the cam-pivot. Fig. 8 is a perspective view of the cam-lever for operating the movable jaw, and Fig. 9 is a perspective view of the movable gripping-jaw as shown in Figs. 4, 5, and 6. Fig. 10 is a side view with the gripping-jaw closed. Fig. 11 is a side view with the gripping-jaw open. Fig. 12 is a plan view of Fig. 10, and Fig. 13 is a side view of Fig. 10, these four last figures illustrating another slight modification of the device. Fig. 14 is a plan view, and Fig. 15 is a front view, of the modifications shown in Figs. 10, 11, 12, and 13, illustrating another method of arranging the operating cam-lever. Fig. 16 is a perspective view of the base-frame of the modification shown in Fig. 14. Fig. 17 is a plan view, and Fig. 18 is a sectional side elevation, of a portion of one of the hatchways and elevator-platforms with

my improvement shown attached thereto, on a reduced scale.

This device will be preferably attached to the platform A' of the elevator opposite the shifting-cable B; but one of the devices may be attached at each floor or other part of the building, if required.

In Figs. 17 and 18 I have shown views of one elevator-platform, A', and its supporting-frame A'', and adapted to be run up and down between the guides A''' by the hoisting-cable A'''.

A'' represents one of the floors of the building, and B the cable by which the hoisting machinery is thrown in and out of gear, and technically called the "shifting-rope" or "shifting-cable," and sometimes the "shipping-cable." For clearness and definiteness I have alluded to this rope or cable as the "shifting-cable." This shifting-cable runs from the hoisting machinery up and down through the hatchways, alongside of or near the platform A', so as to be convenient to the hand of the operator.

It frequently happens in using freight-elevators that the operator has a load of miscellaneous goods to take on or off the platform, and requires some time to move them; hence it is very essential that the elevator shall not be moved until he has had time to discharge it or load it; and the object of my invention is to "lock" the shifting-cable, so that the operator can have complete control of the platform as long as he requires it.

My invention consists, principally, of a base-plate, a, with a fixed jaw, b, attached to the platform A' of the elevator, and having a lever, d', pivoted to it, said pivoted lever having a jaw, d'', and adapted to be moved away from and toward the fixed jaw b (by a cam-lever, e', also pivoted to the base-frame a) to grip the shifting-cable between the two jaws.

I have shown several modifications of the construction of the base-lever and cam.

In Figs. 1, 2, and 3 the cam-lever e' is pivoted to the base a between its jaw b and the pivot d''' of the lever d', and in Figs. 10, 11, 12, 13, 14, and 15 the pivot d''' of the lever d' is placed between the cam-lever e' and the jaw b of the lever d', while in Figs. 4, 5, and 6 the relative positions of the parts are the same as in Fig. 10, but the construction of the several

parts is slightly different. The lever d' in all the modifications is substantially the same, having a gripping-jaw, d^2 , and pivotal point d^3 and bifurcations d^4 d^5 , in which the cam-lever e' fits and operates.

In Figs. 1, 2, 3, 10, 12, and 13 the cam part e^2 of the lever e' fits in between the forks or bifurcations d^4 d^5 of the lever d' , so that when the outer point, e^3 , of the lever is thrown from side to side by the foot of the operator the jaws b d^2 will be opened or closed.

The normal position of the device will be with its jaws open, as in Figs. 1, 11, and 5, and when it is to be operated the shifting-cable B is drawn in toward the platform until it is between the jaws b d^2 , and the lever d' is then thrown over and pressed down by the foot of the operator, thus firmly clamping the cable B between the jaws, as in Figs. 2 and 18, and locking the cable, so that it cannot be drawn upward or downward to "ship" the hoisting machinery.

The two parts d^4 d^5 of the bifurcated lever d' are shown of unequal thickness, the larger part, d^4 , being on the side on which the greatest strains occur, while the other part, d^5 , being only used to open the jaws, is subjected to a very slight strain, and is consequently much smaller.

In Figs. 14 and 15 the cam-lever e' is shown set at right angles to the lever d' and base-plate a , so that the base-plate may be attached to the upper surface or floor of the platform, with its jaws b d^2 projecting over the edge of the platform, and in a position to receive the cable B.

It sometimes happens that it is not convenient to attach the base-plate upon the edge of the platform A' , as in Figs. 1 and 10, and by forming the base-plate with a slot, g , (see Fig. 16,) the cam-lever e' may be pivoted therein, between the bifurcations d^4 d^5 , at right angles to the base-plate, the action being precisely the same on the lever as in the other arrangements. By forming the base-plate a with the slot g the lever e' may be set in either one of the positions indicated. The slot g will also be formed in the base-plate a , (shown in Figs. 1, 2, 10, 11,) but does not appear, as it is covered by the cam-lever e' .

In Figs. 1, 2, 3, 10, 11, 12, 14, 15, and 16 each of the jaws b d^2 is shown with two sets of cavities to receive the cable, or so arranged that they will partially inclamp the cable, as in Figs. 2 and 3. They are attached to the platform A' on its edge, as in Figs. 1, 2, 3, 10, 11, 12, and 13, or on its upper surface, as in Figs. 14 and 15. Thus one set of the different parts of the device may be used to do duty for the two modes of attachment to the platform A' .

In Figs. 4, 5, 6, 7, 8, and 9 on the lever d' is shown a plate or hood, d^6 , projecting over and forming a protection to prevent foreign matter getting in between the lever d' and jaw

b , although this hood is not an essential feature of the invention. A stud, h' , is shown in Fig. 7 cast upon the base-plate a at the point where the lever d' is pivoted, and the lever d' is shown with a cavity, h^2 , (see Fig. 9,) adapted to fit over this stud, the pivotal bolt or pin d^3 being tapped or set down into or through the lever and stud. By this means the principal strains of the lever d' are borne by the stud h' , and not by the pivot-pin d^3 . These studs h' may also be used in the modification shown in the other figures of the drawings; but the illustration shown in Figs. 7 and 9 is sufficient to explain this feature of the invention.

The cam-lever e' in Figs. 4, 5, 6, and 8 is shown with a rib, e^4 , adapted to fit between the bifurcations d^4 d^5 of the lever d' , as shown, the main face of the cam e^2 acting on the large part d^4 of the lever to force the jaw d^2 over against the jaw b when the lever is thrown over, as shown in Fig. 4, and the rib e^4 catching upon the smaller part d^5 , and carrying the lever d' over with it and opening the jaws b d^2 , when the cam-lever e' is thrown over in the position shown in Figs. 5 and 6. The movement of the lever d' is thus made positive in both opening and closing, and avoids the necessity for springs or other similar means for opening the jaws.

While the construction, mode of operation, functions, and results produced by the different parts when arranged in the different positions shown are substantially the same, I prefer the form shown in Figs. 1, 2, and 3, as in this arrangement the cam-lever e' and gripping-lever d' can be so constructed that their centers of gravity will cause them to retain the positions shown in Fig. 1, or with the jaws open, so that the jaws will not be liable to be accidentally locked.

I am aware that devices carried by an elevator for the purpose of locking, when desired, the shifting-cable have hitherto been devised, and therefore I make no claim to cover, broadly, such a device.

Having thus described my invention, what I claim as new is—

In a shifting-cable lock for elevators, the combination of a base-frame secured to the elevator, a fixed jaw carried thereby, a bifurcated lever pivoted to the base-frame and carrying a movable jaw which co-operates with said fixed jaw to lock and release the shifting-cable, and a cam-lever pivoted to said base-frame and adapted to operate the movable jaw of the bifurcated lever, substantially as set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WALTER SCOTT MORTON.

Witnesses:

H. S. WEBSTER,
H. CAMPBELL.