

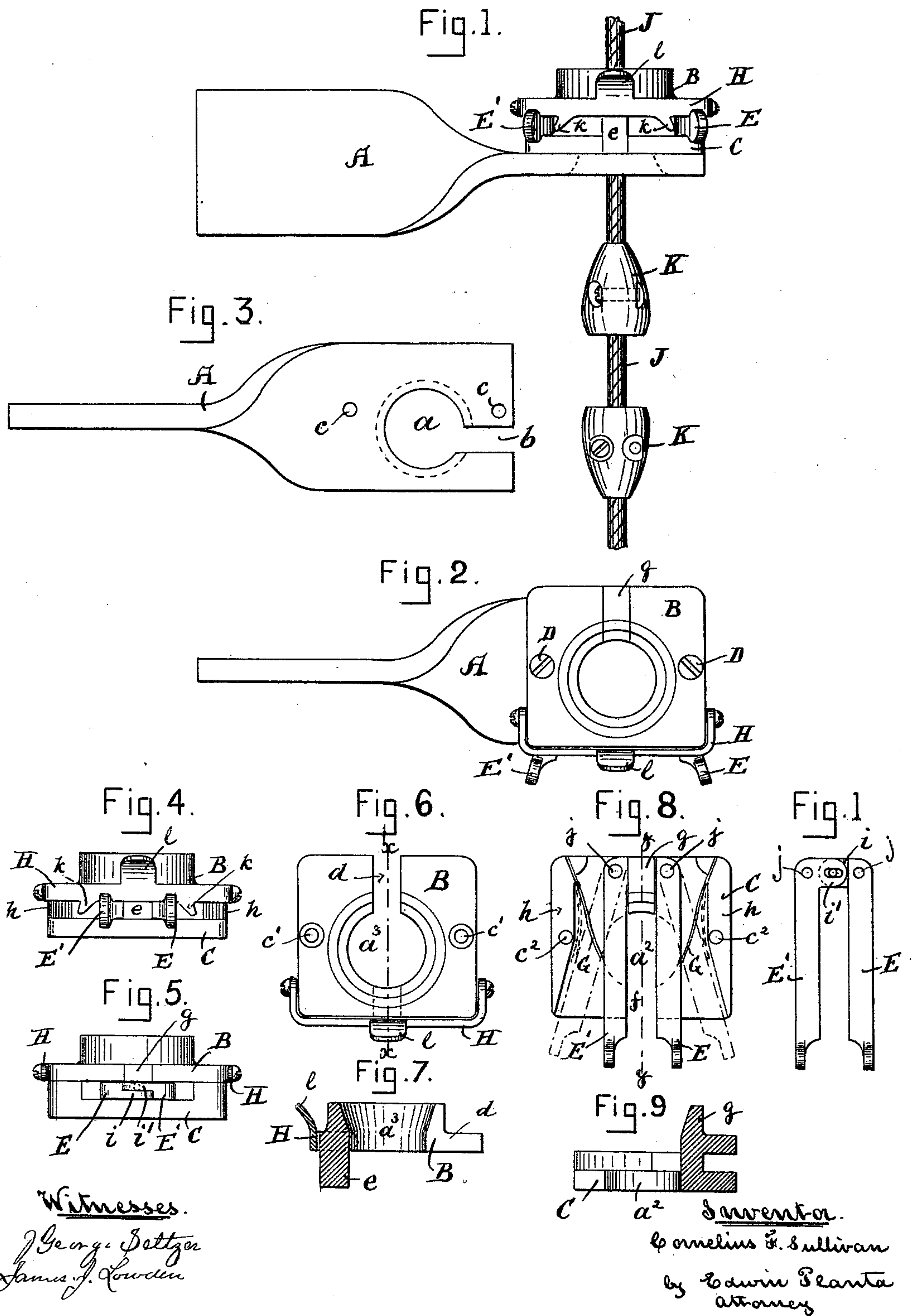
(No Model.)

C. F. SULLIVAN.

LOCKING DEVICE FOR ELEVATORS.

No. 414,128.

Patented Oct. 29, 1889.



UNITED STATES PATENT OFFICE.

CORNELIUS F. SULLIVAN, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO FRANK W. LOWE, OF SAME PLACE.

LOCKING DEVICE FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 414,128, dated October 29, 1889.

Application filed February 15, 1889. Serial No. 299,993. (No model.)

To all whom it may concern:

Be it known that I, CORNELIUS F. SULLIVAN, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Locking Devices for Elevators, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to improvements in locking devices for elevators; and the invention consists of certain details of construction, all as hereinafter fully described, and pointed out in the claims.

Referring to the accompanying drawings, Figure 1 represents a front elevation of a locking device for elevators and brackets embodying my invention, showing it open for the rope to run free. Fig. 2 is a plan or top view of the same. Fig. 3 is a plan or top view of the bracket. Fig. 4 is a front elevation of the locking device, showing it in the closed or locked position. Fig. 5 is a rear elevation of the same. Fig. 6 is a plan or top view of the upper plate detached. Fig. 7 is a vertical section taken on the line xx of Fig. 6. Fig. 8 is a plan or top view of the lower plate and locking-jaws. Fig. 9 is a vertical section of the lower plate, taken on line yy of Fig. 8, without the locking-jaws. Fig. 10 is a plan or top view of the locking-jaws detached.

A represents a bracket for supporting the locking device, and which is attached to the elevator-car in any convenient manner. This bracket consists of a flat piece of metal bent or twisted near its outer end, so that its two ends stand at right angles to each other, the end that is to support the locking device being provided with a round hole a , through which the shifting-rope runs, and a slot b , cut from the hole a to the outer edge of the plate, so that it can be readily slipped into position without detaching the rope. It is also provided with two screw-threaded holes $c c$ for the screws that hold the locking device thereon.

To the bracket A is secured the locking device, the frame of which consists of two plates—an upper one B and lower one C—both of which are provided with a round hole, through which the shifting-rope passes, and

a slot extending from the hole to the outer edge for the introduction of the rope without its being detached; also a lug, the lug on one plate fitting into the corresponding slot in the other plate. In the upper plate the slot d extends from the hole a^3 to the back of the plate and the lug e is on the under side at the front of the plate, while the slot f in the bottom plate extends from the hole a^2 to the front of the plate and the lug g is on the upper side at the rear of the plate. This plate is also provided with side walls or flanges h , so that when the two plates are put together the bottom of the top plate rests upon the side walls h , and the lug e fits into the slot f , and the lug g fits into the slot d . The plates B C and bracket A are all held together by two screws D D, that pass down through holes $c' c^2$ in the plates and screw into the threaded holes c in the bracket A.

E E' are locking-jaws, each provided at its rear end with a lug $i i'$ half the thickness of the jaw itself. One of the lugs is provided with a slot and the other with a pin that fits the slot, but free to play therein. The locking-jaws are secured to the bottom plate by pivots $j j'$, and by being connected together in the manner described, when one of the jaws is moved, the other jaw has a corresponding movement imparted thereto, but in the opposite direction. A portion of the lug g is cut away, as shown in Fig. 9, to admit the lugs on the rear of the locking-jaws.

G G are flat springs secured at one end in the walls h , their free end pressing upon the jaws E to keep them in a closed position.

H is a drop-latch pivoted to the top plate and provided with ears $k k$, by means of which the locking-jaws E are held in the open position, as best seen in Fig. 1. It is also provided with a finger-piece l , by which it is raised to release the locking-jaws.

J is the shifting-rope, which is at every floor provided with stops K K.

The operation is as follows: The bracket and locking device having been secured to the elevator-car in the proper position and supposing the elevator-car to be at the lowest floor, it is started by the attendant drawing on the shifting-rope J. It then rises, and if the locking-jaws E are open, as in Fig. 1, the

stops K K at the next floor will be free to pass through and the car continues to ascend, and if the attendant wishes to stop at the next floor he raises the latch H, and the
 5 springs G force the locking-jaws E toward each other, and the first stop will pass between them by reason of its tapered end. The jaws then again close and come into contact with
 10 the rope, thereby stopping the car. To release the car and cause it to again ascend, the attendant draws the end of either one of the locking-jaws until they pass under the ears *k*, when the drop-latch falls and holds them
 15 in place, and the stops K are free to pass through. The plates B C may be employed by themselves as a rope-guide, if desired.

What I claim as my invention is—

1. The combination of the plates B C, locking-jaws E E', springs G, and drop-latch H, having the jaw-holding ears, all constructed and arranged substantially as and for the purposes set forth.

2. The plate B, having a circular hole a^3 , slot d , and lug e , in combination with the
 25 plate C, having a circular hole a^2 , slot f , and lug g , whereby the plates can be readily placed around the rope and then locked together, substantially as set forth.

30 3. The bracket A, consisting of a flat piece

of metal bent or twisted so that its ends stand at right angles with each other, and one end having a circular hole a and slot b , in combination with plates B C, locking-jaws E E', springs G, and drop-latch H, having the holding-ears, substantially as and for the purposes described. 35

4. Two locking-jaws pivoted and held together at their rear end by lugs in one of which is a slot and in the other a pin fitting
 40 in said slot, so that when either jaw is operated the two jaws move simultaneously, but in opposite directions, in combination with plates B C, drop-latch H, having the jaw-holding ears, and springs G, substantially as shown
 45 and described.

5. The combination, with the shifting-rope of an elevator-car provided with stops K, of the locking-jaws, springs G, plates B C, and drop-latch H, having the jaw-holding ears, sub-
 50 stantially as shown and described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 6th day of October, A. D. 1888.

CORNELIUS F. SULLIVAN.

Witnesses:

CHARLES STEERE,
 EDWIN PLANTA.