

No. 657,195.

Patented Sept. 4, 1900.

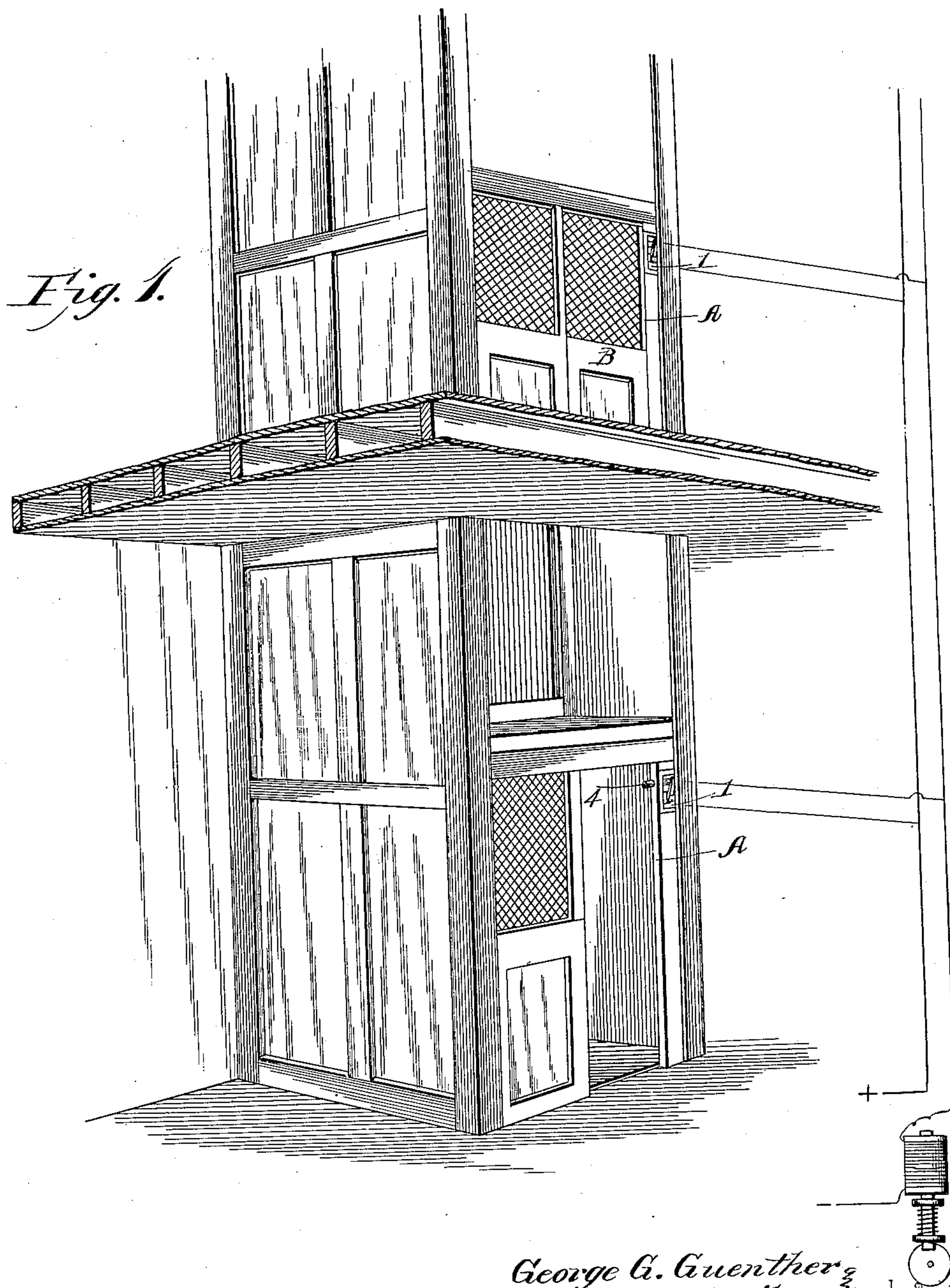
G. G. & A. G. GUENTHER.

AUTOMATIC SAFETY CUT-OFF FOR ELEVATORS.

(Application filed Feb. 26, 1900.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses

L. H. Walker.

Joe Garner

George G. Guenther &
Arthur G. Guenther &

Inventors

By *their* Attorneys,

Cañon Viejo.

No. 657,195.

Patented Sept. 4, 1900.

G. G. & A. G. GUENTHER.

AUTOMATIC SAFETY CUT-OFF FOR ELEVATORS.

(Application filed Feb. 26, 1900.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 2.

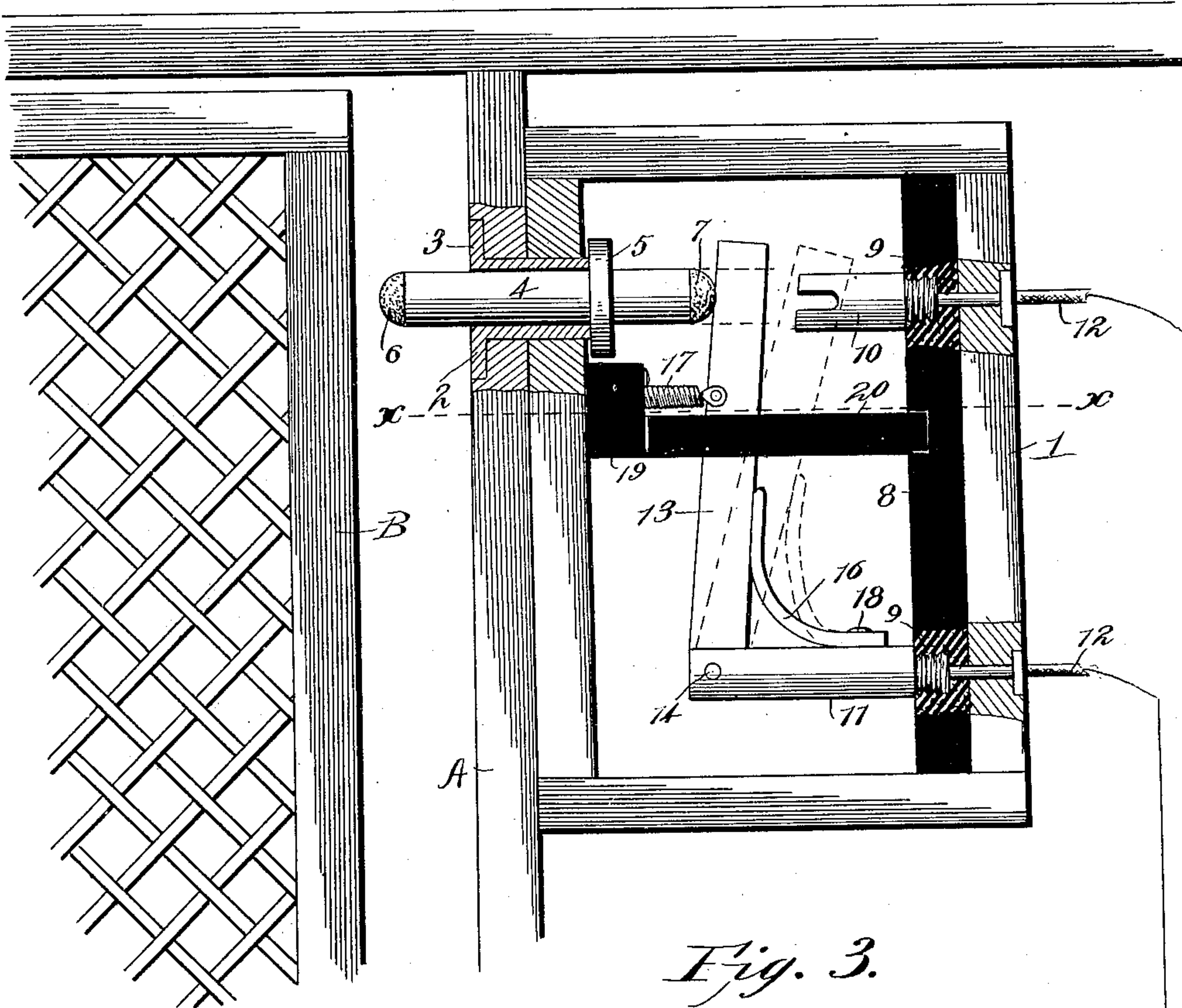


Fig. 3.

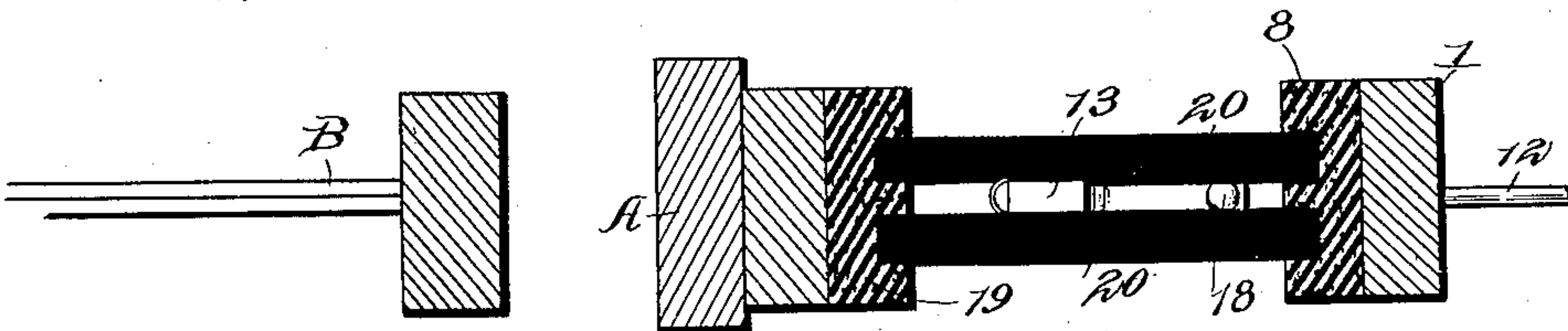


Fig. 4.

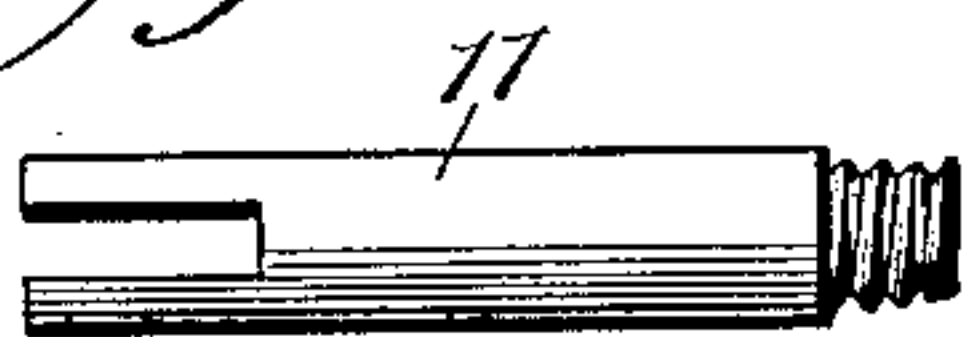
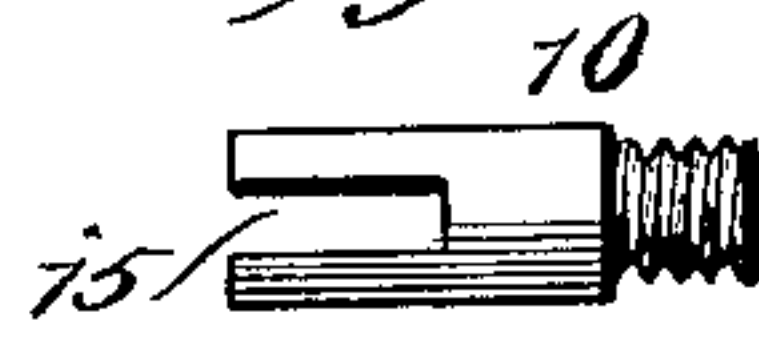


Fig. 5.



Witnesses
L. M. Walker.

J. W. Garner

*George G. Guenther &
Arthur G. Guenther &* Inventors

By Their Attorneys,

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

GEORGE G. GUENTHER AND ARTHUR G. GUENTHER, OF ORANGE,
CALIFORNIA.

AUTOMATIC SAFETY CUT-OFF FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 657,195, dated September 4, 1900.

Application filed February 26, 1900. Serial No. 6,577. (No model.)

To all whom it may concern:

Be it known that we, GEORGE G. GUENTHER and ARTHUR G. GUENTHER, citizens of the United States, residing at Orange, in the county of Orange and State of California, have invented a new and useful Automatic Safety Cut-Off for Elevators, of which the following is a specification.

Our invention is an improved automatic safety cut-off for elevators, the object of our invention being to provide an improved device for breaking an electric circuit when an elevator-door is open, and thereby rendering the elevator-controlling apparatus inoperative, hence making it impossible to start the elevator-car while the door is open.

Our improved automatic safety cut-off is designed for use either in connection with an electrically-operated elevator or in connection with other forms of elevator-operating mechanism, in which is included a valve or other controlling device that is electrically locked.

Our invention consists in the peculiar construction and combination of devices hereinafter fully set forth, and pointed out in the claim.

In the accompanying drawings, Figure 1 is a perspective view of a section of an elevator provided with automatic safety cut-off devices embodying our improvements. Fig. 2 is a detail elevation, partly in section, of our improved automatic safety cut-off, showing the same in operative position with relation to the door of an elevator-shaft. Figure 3 is a detail sectional view of the same taken on the line *xx* of Fig. 2. Figs. 4 and 5 are detail views of the posts forming the electrodes.

In the embodiment of our invention we employ a switch box or casing 1, which is adapted to be secured to the casing of an elevator-shaft at a landing and near the upper side of a doorway, preferably on the inner side of the door-jamb A, as shown in Figs. 1 and 2. An annular socket 2 is provided, which is inserted in an opening made transversely through the door-jamb, said socket having an enlarged head 3 at its outer side to receive screws for securing it to the door-jamb and the inner end of said socket extending through an opening in the side of the switch box or casing 1, which is secured

against the inner side of the jamb. In the said socket 2 is an endwise-movable pin 4, which is preferably made of metal, but may be made of any suitable material. Said pin is provided at a suitable distance from its inner end with a shoulder 5, which is adapted to limit the outward endwise movement thereof, and said pin is further provided at its outer end, which is adapted to project into the doorway, with a buffer 6, of rubber or other suitable material, and at the inner end of said pin is an insulating-head 7.

It will be observed by reference to Figs. 1 and 2 of the drawings, that when the door is open the outer end of the pin 4 projects beyond the door-jamb and into the doorway in a position to be engaged by the door when the latter is closed, so that said pin will be forced inward by the closing of the door.

In the side of the switch box or casing 1, opposite the pin 4, is a base 8, which is preferably of marble or other suitable insulating material, which base is provided near its upper and lower ends with screw-threaded sockets, as at 9, to receive similarly-threaded projections on the posts 10 11. Said posts are made of brass or other suitable electrical conducting material, are adapted for the attachment thereto of the ends of conducting-wires 12, which for the purpose of illustration are here shown as forming a part of an electric circuit in which is included an electromagnet, the armature of said magnet forming a lock adapted to engage a notched disk in the shaft of a switch, valve, or other controller, so that when the magnet is deenergized the switch, valve, or other controller will be locked. The said posts 10 11 form the electrodes, and to the outer end of the post 11 is pivoted one end of a conducting-bar 13, as at 14, said conducting-bar being disposed in the path of the pin 4 and adapted to engage and disengage the post 10, and thereby make and break the electric circuit. Said post 10 is slotted at its outer end, as at 15, to receive the free end of the conducting-bar 13 and effectually close the circuit therethrough, and said conducting-bar is kept at all times in engagement with the inner end of the pin 4 by means of springs 16 17, which operate on opposite sides of said bar. The spring 16 is of the simplest

form, is secured on the post 11, as at 18, and bears against the inner side of the conducting-bar 13. The spring 17 is a coiled retractile spring and connects the conducting-bar 5 13 with an insulating-block 19. It will be understood that said springs 16 17 are the equivalents of each other and that either may be employed to the exclusion of the other; but we have here shown and prefer to use 10 both of said springs to render doubly sure the efficient operation of the device. The conducting-bar 13 operates between a pair of parallel guide-bars 20, which span the space between the insulating-block 19 and the in- 15 sulating-base, and said guide-bars are preferably made of marble or other suitable insulating material.

When the door B is closed against the jamb A, it moves the pin 4 inward, thereby causing 20 the conducting-bar 13 to contact with the post 10 and establish an electric circuit, energizing the electromagnet and unlocking the switch, valve, or other controller, so that the elevator-car may be started; but when the 25 door is opened the springs instantly move the conducting-bar 13 out of contact with the post or electrode 10, thereby breaking the electric circuit and rendering it impossible to start the elevator-car while the door is open.

Having thus described our invention, we 30 claim—

In an automatic cut-off for elevators, a switch-box adapted to be attached to the casing of an elevator-shaft, a tubular socket sunk in the door-jamb and projecting through one 35 side of the casing, an endwise-movable operating-pin, guided in said tubular socket and having the stop 5 to engage the inner end of said socket, an insulating-base in the side of the switch-box opposite said socket, a pair of 40 parallel insulating guide-bars extending across the casing from said base, a pair of electrodes secured to said base, and a spring-pressed switch-bar pivoted to one of said electrodes, adapted to contact with the other, 45 guided between the parallel guide-bars and bearing against the inner end of the operating-pin, substantially as described.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures 50 in the presence of two witnesses.

GEORGE G. GUENTHER.
ARTHUR G. GUENTHER.

Witnesses:

C. O. FIELD,
MELLIE B. TOWNE.