

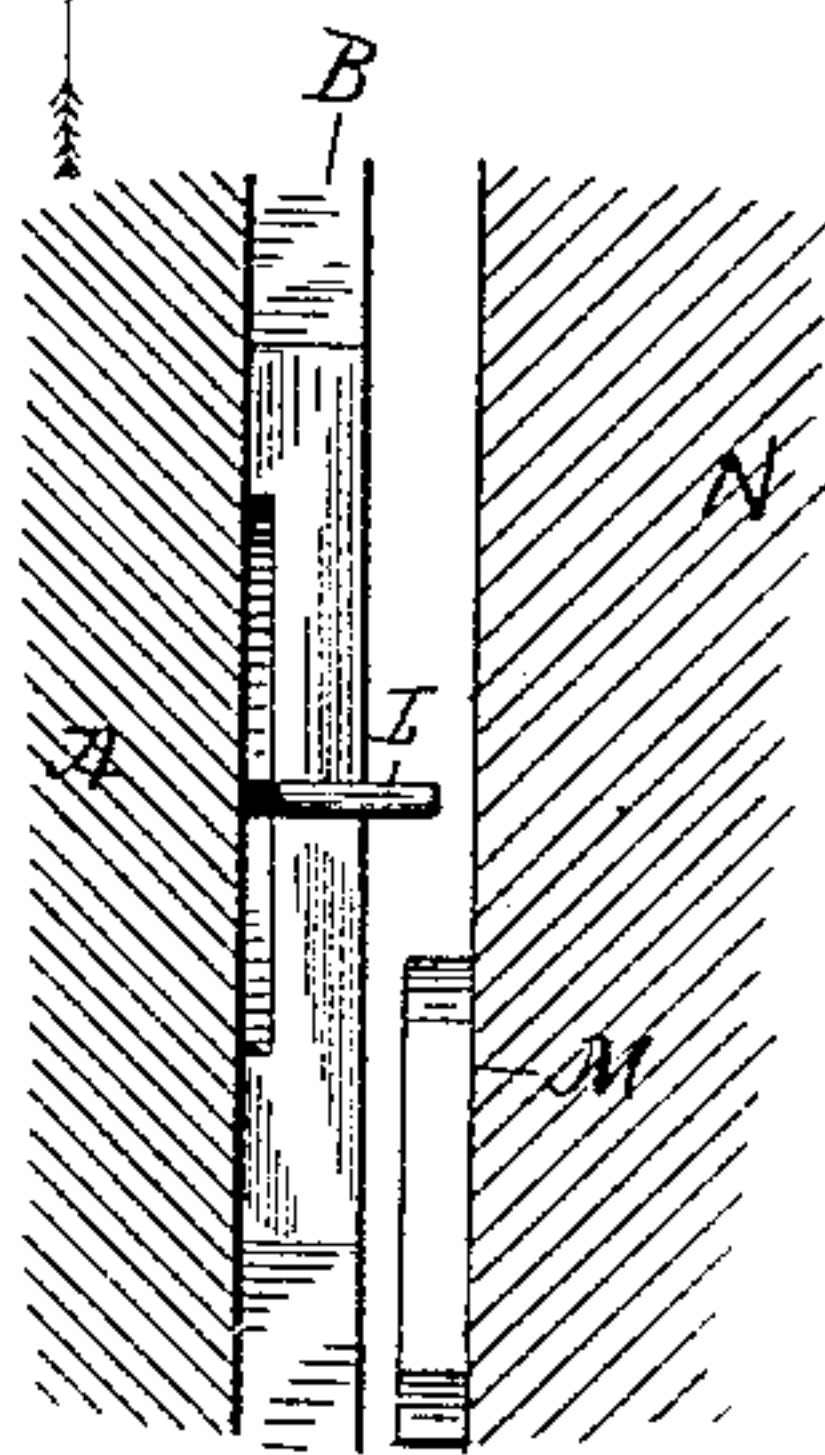
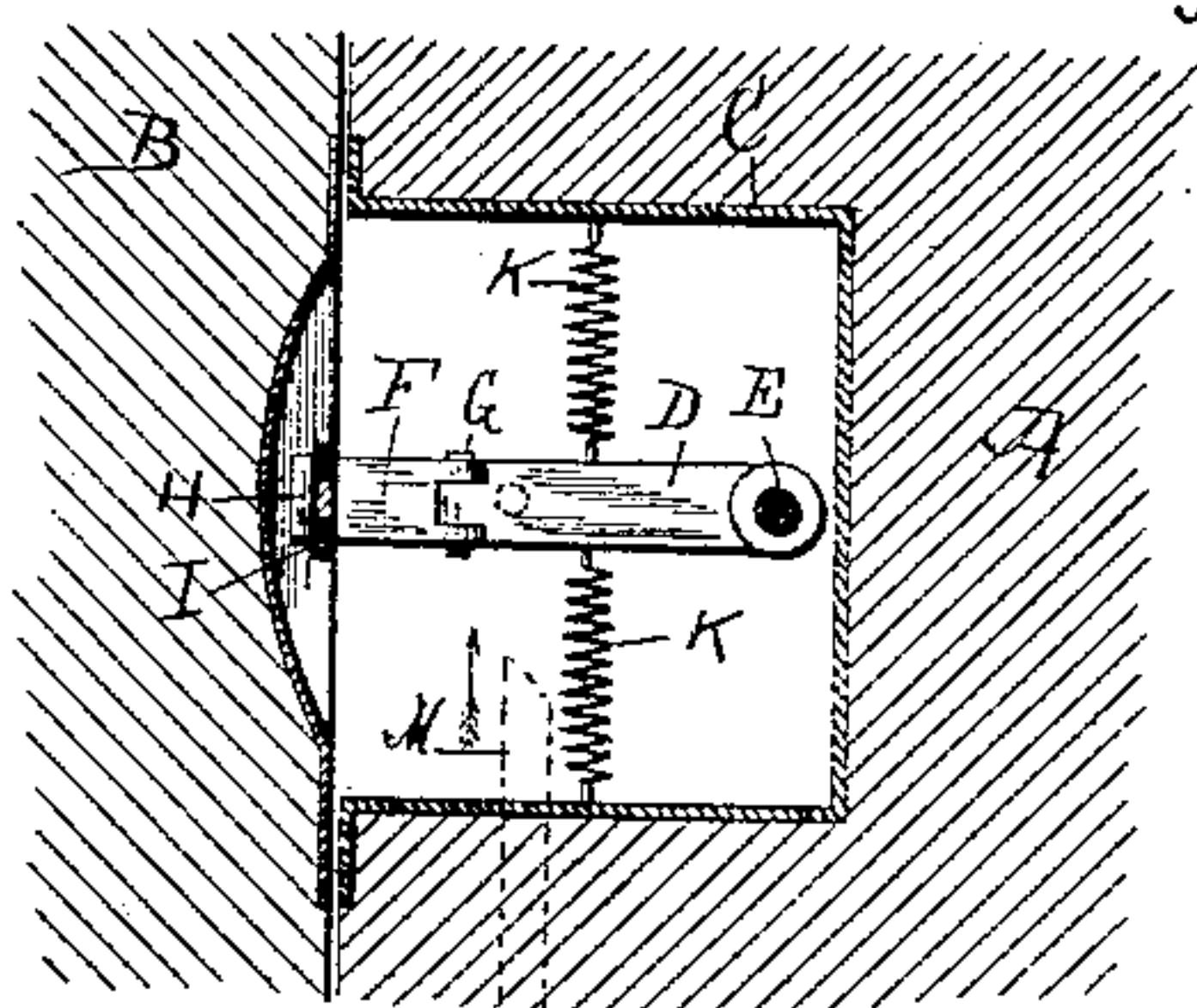
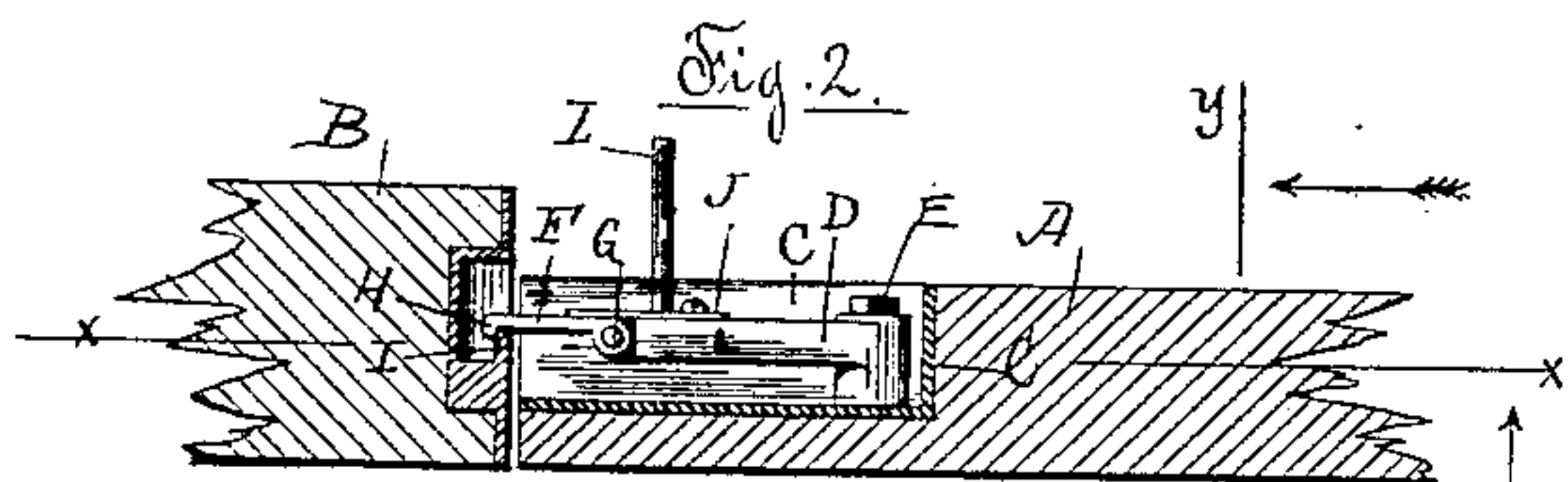
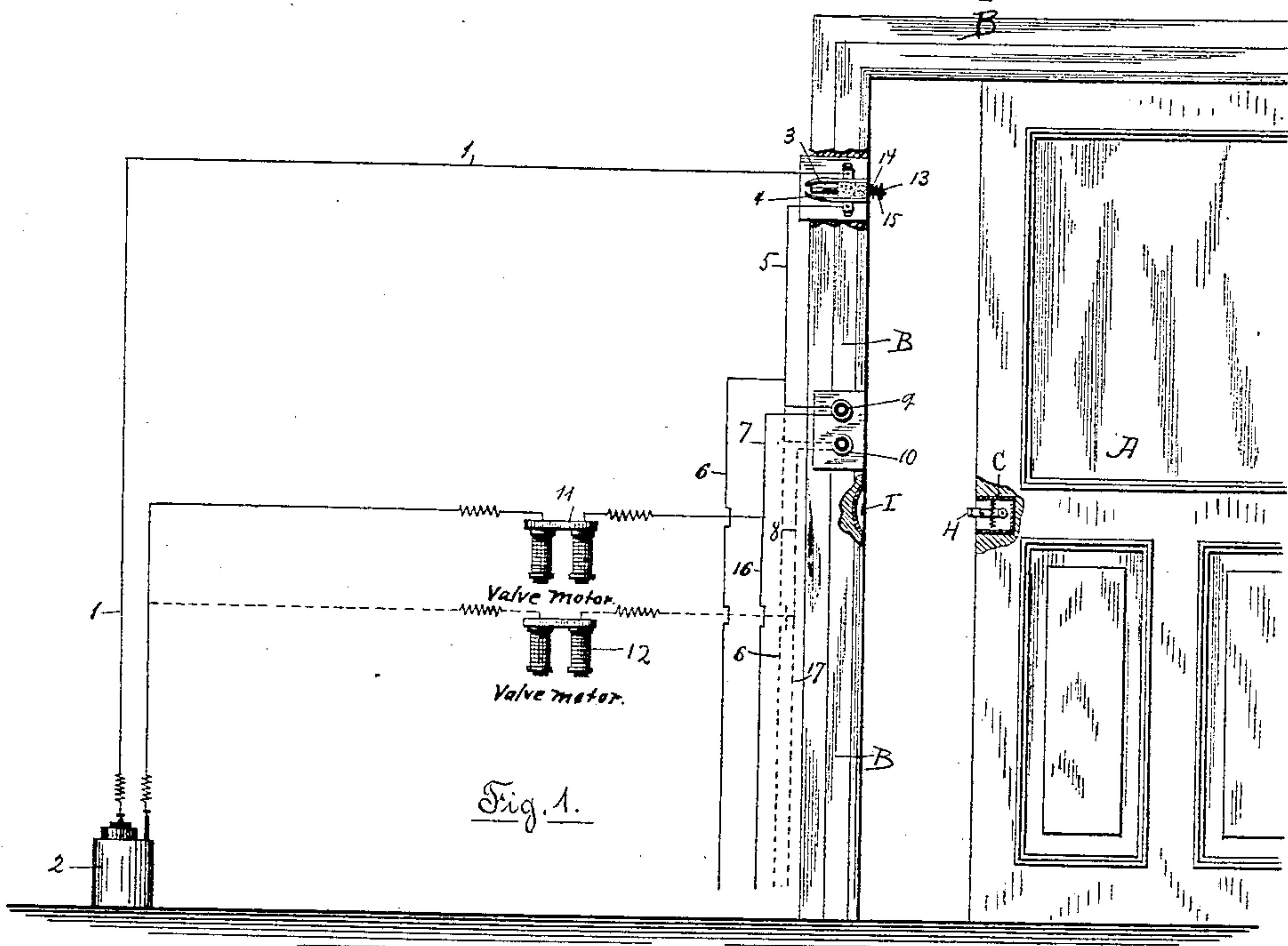
(No Model.)

C. E. ONGLEY.

SAFETY APPARATUS FOR ELEVATORS.

No. 389,853.

Patented Sept. 18, 1888.



Witnesses

George A. Potts  
J. J. Kennedy

Inventor

Charles E. Ongley

By his Attorneys

Philip Phelps & Hovey



# UNITED STATES PATENT OFFICE.

CHARLES E. ONGLEY, OF NEW YORK, N. Y.

## SAFETY APPARATUS FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 389,853, dated September 18, 1888.

Application filed November 21, 1887. Serial No. 255,720. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES E. ONGLEY, a citizen of the United States, residing at New York, county of New York, and State of New York, have invented certain new and useful Improvements in Safety Apparatus for Elevators, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

My invention relates particularly to that class of elevators in which electrical appliances are employed for controlling the movements of the elevator-car; and it has for its object to provide an efficient safeguard against accidents caused by starting the car from a landing before the door of the shaft has been closed.

The invention consists, primarily, in a circuit-breaking device controlled by the door, so that the electric circuit through which the movements of the elevator are controlled is only maintained closed when the door is closed.

In the accompanying drawings, Figure 1 represents a portion of a doorway to an elevator-shaft with the devices embodying my invention; also a connected diagram representing an electric circuit and illustrating the operation of my improved safety appliance. Fig. 2 is a sectional view of a part of the door and casing, showing a top view of the door-latching device by which the door leading to the elevator-shaft is fastened. Fig. 3 is a sectional view on line X X of Fig. 2 of a part of the door and casing, showing a front view of the door-latching device; and Fig. 4 represents in sectional view on line Y Y of Fig. 2 a portion of the door and also a portion of the car, and illustrating the manner of unlatching the door leading to the elevator-shaft by the action of the car.

Referring to said figures, A denotes one of the doors which open into the shaft of an elevator.

B is a portion of the door-casing.

C is a case or shell recessed in the body of the door and within which is pivoted the latch consisting of a bar, D, pivoted upon a stud, E, and turning in a vertical plane parallel with the door A.

Upon the end of the pivoted bar D is a short bar, F, hinged to the bar D at G, and provided

at its outer or free end with a hook, H, arranged to engage a lip, I, on the door-casing. The hinged bar F is held in alignment with the pivoted bar D by means of a blade-spring, J, attached to the bar D and resting against the side of the bar F. The hook H is beveled, so that the bar F will be turned on its hinged joint as the door is closed and allow the bar F to automatically engage the lip I, which is a part of a metallic shell recessed in the edge of the door-casing B. The bar D is held in a central or horizontal position, as shown in Fig. 3, by means of the two equalizing-springs K, and from the sides of the bar D a pin, L, extends laterally toward the elevator-shaft, so as to come in the path of a cam, M, projecting from the car, which in Fig. 4 is represented by the sectional part N. Whenever the door A is closed, the hinged portion F of the latch will automatically engage the lip I on the door-casing and hold the door securely fastened until the car, in either ascending or descending, operates the latch to release the door by means of the cam M, which is brought into contact with the pin L and rocks the bar and connected hooking-latch until the hooked end H is carried past the lip I. As the car passes the door, the pin L will pass out of engagement with the cam M, and the hook H will re-engage with the lip I. The bar D is therefore held in the position shown, with the hooked bar F, engaging the lip I, holding the door latched except during the time that the door-opening is closed by the presence of the car. The door also becomes automatically latched whenever it is closed.

11 and 12 represent electromotors, which operate the valve or other starting and stopping mechanism of the car in any suitable manner—as, for example, in the manner described in my companion application for Letters Patent filed November 22, 1887, Serial No. 255,857—and 2 represents the battery for operating the motors.

The wire 1, leading from the battery, is connected with an insulated elastic blade or brush, 3, which is located in the door-frame and adjacent to a second elastic blade or brush, 4, which is connected by wires 5 with push-buttons or circuit-closers 9 10, located at each landing and connected by wires 7 8 with the respective motors and the battery. The wires



5 and 7 8 are also connected by wires 6 and 16 17 with similar push-buttons or circuit-closers located upon the car. Between the elastic blades 3 4 there is arranged a sliding circuit closer and breaker, 13, having a spring, 14, which acts against a collar, 15, on the circuit-closer, in the usual and well-known manner, to normally hold it in the position shown in Fig. 1 out of contact with the elastic blades 3 4, thus breaking the circuit through the wire 1. The circuit-closer 13 is located in such position that when the door A is closed it is pushed in against the tension of the spring 14 until its end is brought in contact with both of the elastic blades 3 and 4, thereby electrically connecting them and also the wires 1 5, and permitting the circuits, including the electromotors, to be completed, at the will of the operator, through the use of the push-buttons 9 and 10 or the similar buttons on the car. Whenever the door A is open, the spring 14 will cause the circuit-closer 13 to be withdrawn from between the two elastic blades 3 and 4, thereby breaking the circuit and preventing the operator from causing either of the electromotors to actuate the elevator starting and stopping mechanism.

The operation of the apparatus thus organized is as follows: In order to start the car from any position, it is first necessary that all of the doors leading to the shaft should be closed, because so long as any door is open the connection between the wires 1 5 will be broken and it will be impossible to complete the circuit through either of the electromotors 11 12 to start the car. The doors being all closed, so as to complete the connection between the

wires 1 5, the car can be started either up or down from any position by operating the proper push-button either upon the car or at any one of the landings. When the car arrives at the proper landing, it will be stopped by operating the other push-button. As the car arrives in proper position to be stopped, it will operate the bar D and release the door, so that it can be opened, and the door having been opened the car cannot be again started until the door is closed. It will also be observed that by reason of this arrangement it is not only necessary that the door should be closed before the car is started, but that the car should be fully stopped before the door is opened.

Although it will in many cases be desirable that provision should be made for stopping and starting the car from the landings, this is not in all cases necessary, and may of course be omitted without departing from the invention.

What I claim is—

The combination, with an electric circuit, including an electromotor, by which the elevator starting and stopping mechanism is operated, of a circuit closer and breaker located in said circuit and operated by the door of the elevator-shaft to break the circuit by the opening of the door, substantially as described.

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

CHARLES E. ONGLEY.

Witnesses:

T. H. PALMER,  
J. J. KENNEDY.