

No. 687,771.

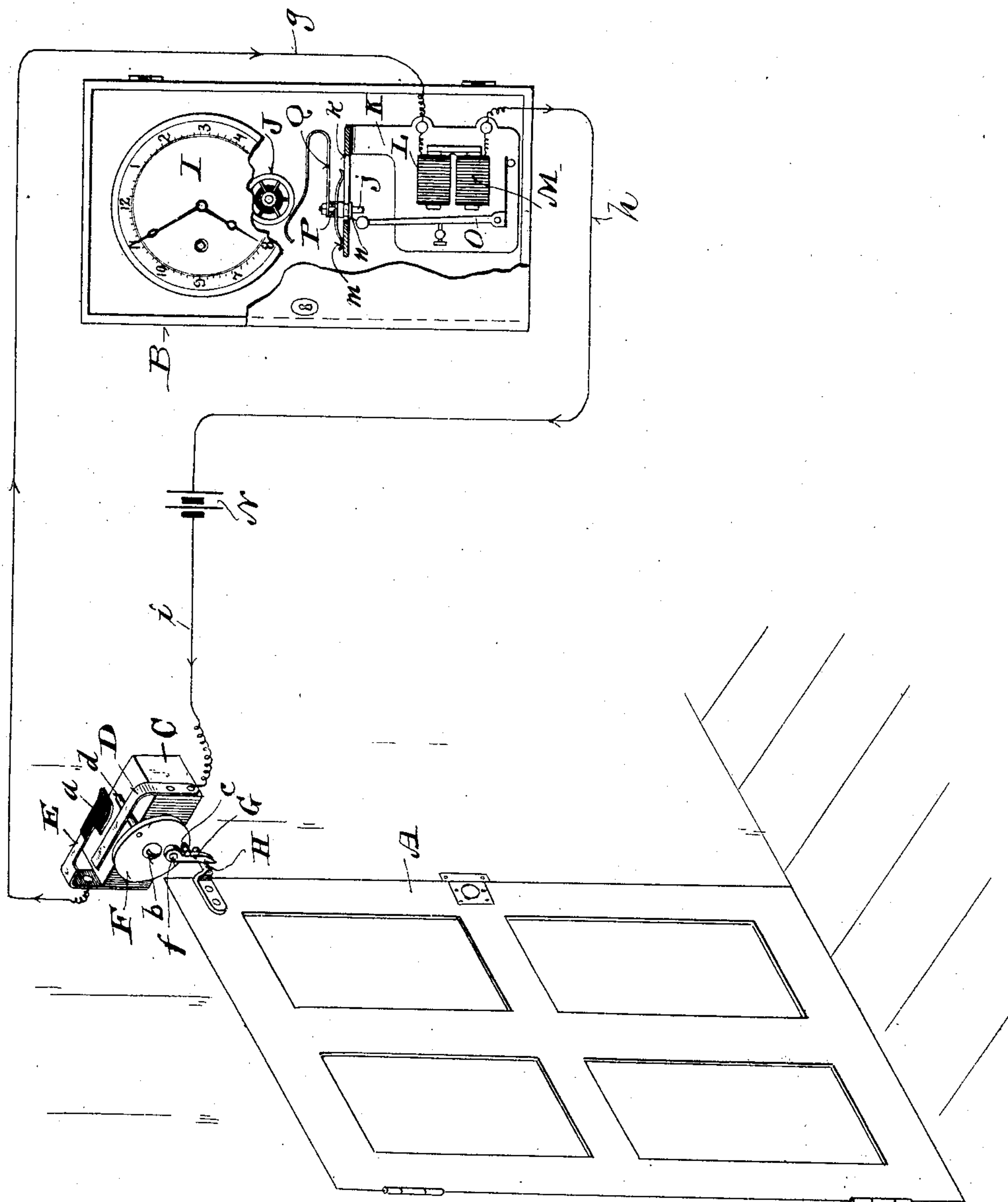
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TIME CHECK.

(Application filed Sept. 15, 1900.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

EDWARD A. NEUBAUER AND HENRY E. SMITH, OF IRON MOUNTAIN,
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TIME-CHECK.

SPECIFICATION forming part of Letters Patent No. 687,771, dated December 3, 1901.

Application filed September 15, 1900. Serial No. 30,118. (No model.)

To all whom it may concern:

Be it known that we, EDWARD A. NEUBAUER and HENRY E. SMITH, citizens of the United States, and residents of Iron Mountain, in the county of Dickinson and State of Michigan, have invented certain new and useful Improvements in Time-Detectors; and we do hereby declare that the following is a full, clear, and exact description thereof.

Our invention relates to time-detectors especially designed for use in offices, stores, warehouses, and like establishments where the doors thereof are usually closed at certain hours at night and are not intended to be opened until certain other hours the following morning; and it consists in certain peculiarities of construction and combination of parts arranged and disposed so that in the event of such a door being opened earlier than the expected hour and after the door has been closed for the night the device will indicate the exact hour and minute of such irregular opening, all as will be more fully set forth hereinafter in connection with the accompanying drawing and subsequently claimed.

The said drawing is a partly-diagrammatic view illustrating our said invention, portions of the mechanism being broken away to better illustrate certain details.

Referring to the drawing, A represents the door to be guarded, which may be an office or store door, and B designates the casing of our time-detector, which latter may be located at any distance therefrom—as, for example, in the residence of the owner of the office or store in another part of the city—said device and said door being electrically connected, as hereinafter described.

C represents a block or support of any suitable insulating material, and D E are two metallic springs secured to opposite ends of the block C and projecting thereover side by side, but always free from contact with each other.

The spring E is of increased width at its free end, which latter is thus nearer the adjacent edge of the spring D than the remainder of said spring E, and the said free end of the latter is provided on its upper surface with insulating material, as shown at *a*.

F is a disk, of hard rubber, fiber, or other insulating material, pivoted to the block C on a bolt *b*, and from opposite faces of said disk there project two pins *c d*, preferably of unequal length, the shorter pin *c* projecting from the outer face of the disk and the other pin *d* projecting from the inner face of said disk and being of a length sufficient to pass beyond the spring D, so as to be in contact at the proper time with the spring E also.

G is a pawl, of metal, (or metal-faced,) suspended from a pivot-pin *f* on said disk, just back of the pin *c*, which latter therefore acts as a stop-pin to limit the movement of the pawl G, and H is a pin or lug secured to and projecting from the door A for engagement with the pawl G.

I represents a clock of ordinary construction supported within the casing B and provided with a balance-wheel J, as shown, and below this clock, within said casing, there is supported a frame K, which carries a pair of magnets L M, the magnet L being connected by wire *g* to the described spring E, and a wire *h* running from the magnet M to one pole of a battery N, from whose other pole a wire *i* runs to the spring D.

O represents an armature pivotally supported by said frame K.

P designates a slide having a depending pin *j*, which projects through a slot *k* in the top of said frame K, on which top the said slide has movement, while secured to the upper part of said slide P is one end of a doubled spring Q, whose free end is bent upward, so as to rise above the lower plane of the balance-wheel J for engagement with said wheel at the proper time. The slide P is preferably provided with another spring *m*, whose ends rest on the upper surface of the top of the said frame K, and with a plate or collar *n* on the pin *j*, which bears against the under side of said frame top to insure a slight frictional hold of the slide on the top.

The operation of our device will be readily understood from the foregoing description of its construction, taken in connection with the accompanying drawing. When the door A is closed for the night, all the parts of the device are in the relative positions indi-

cated by said drawing. Now if the door A is opened this brings the pin or lug H against the pawl G on the disk F, which partly revolves said disk on its pivot *b* as soon as the

5 pawl G comes against the stop-pin *c*, and this causes the contact-pin *d* of the said disk to raise the spring D and move along the under side thereof until it reaches the under side of the other spring E, and thus connects the

10 two springs D E and closes the described electrical circuit, which energizes the magnets L M, and this attracts the armature O, which latter thus comes in contact with the pin *j*, depending from the slide P, and moves the lat-

15 ter along the top of the frame K, carrying the spring Q, fast on said slide, along with it, and bringing the free end of said spring against the balance-wheel J, thus stopping the clock instantly at the very instant the door A is

20 opened, the hands of the clock thereby showing the exact moment when this occurred, and as the clock cannot be again started until the spring Q is released from engagement with said balance-wheel the clock-hands re-

25 main stationary, no matter how often the door A is again opened and closed, and form positive proof of the exact time when the door A was thus surreptitiously or unlawfully opened. The moment the door A is

30 opened the partial revolution of the disk F will serve to carry the disk-pin *d* inwardly beyond the widened part of the free end of the spring E, when said spring, which has been raised by the said pin, will escape there-

35 from, and said spring E will retract to its former level below the plane of the said pin *d* at that moment, and as it is not desired to stop the clock when the mechanism is being reset at night the upper surface of the spring

40 E, over which said pin *d* must pass in such resetting, is provided with the described insulating material *a*, whereby electrical connection of the two springs D E is avoided in such movement of the disk-pin *d*.

45 While we have thus specifically described our preferred construction, the described mechanical construction may be varied as desired in any instance within the scope of our claims without departure from our invention,

50 and while our device is particularly intended to be applied to a door it is obvious that the same could be adapted for use with a window and that instead of the balance-wheel some other moving portion of the clock mechanism

might be selected for engagement with the 55 clock-stopping device.

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

1. In a time-detector, the combination with 60 a swinging door, having a pin or lug projecting from the free edge thereof, of a block or support of insulating material, having two metallic springs secured to opposite ends thereof, and projecting thereoverside by side, 65 but always free from contact with each other, one of said springs being of increased width at its free end, which latter is thus nearer the adjacent edge of the other spring than the remainder of the first-named spring, and said 70 wider end of the said spring being provided with insulating material on its upper surface; a disk of insulating material pivoted to said block or support; a contact-pin projecting from the inner face of said disk, and a stop- 75 pin projecting from the outer face of said disk; a metallic pawl pivotally suspended from said outer face of the disk back of the said stop-pin, and in the path of the pin or lug on said door; a clock situated at a point 80 remote from said door; and clock-stopping mechanism arranged adjacent to said clock, and electrically connected to the said metallic springs on the said block or support.

2. In a time-detector, the combination with 85 a swinging door, having a pin or lug projecting from the free edge thereof, and a circuit-closing device located in the path of said pin or lug, of a clock situated at a point remote from said door; a frame supported adjacent to said 90 clock, and carrying a pair of magnets in electric circuit with said circuit-closing device; an armature pivotally supported by said frame; and a slide carried by said frame, and provided with a projecting pin located in the 95 path of said armature, and having another projection adapted for engagement with a movable part of the clock mechanism.

In testimony that we claim the foregoing we have hereunto set our hands, at Iron Mountain, in the county of Dickinson and State of Michigan, in the presence of two witnesses. 100

EDWARD A. NEUBAUER.
HENRY E. SMITH.

Witnesses:

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