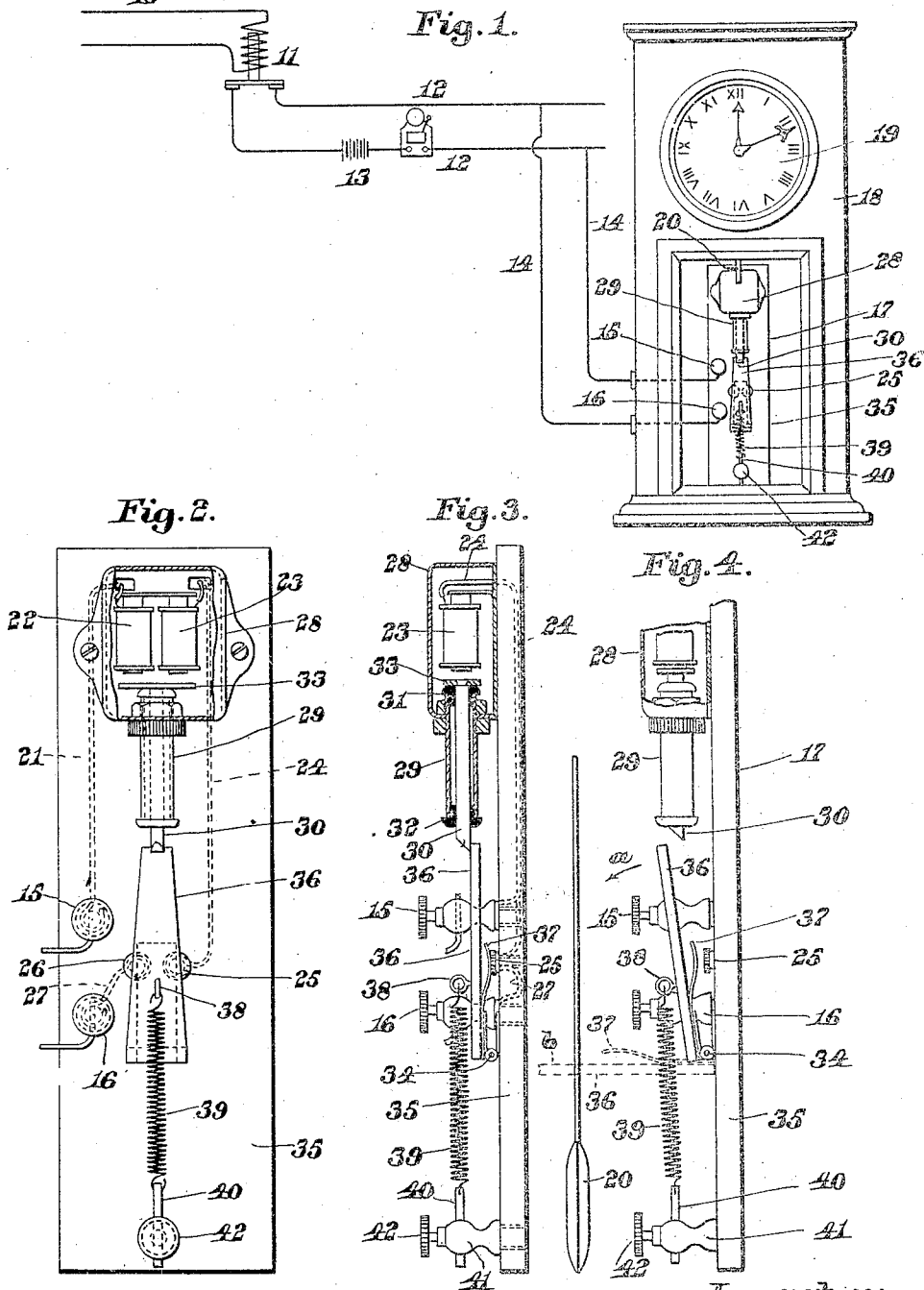


C. R. SWIFT.
STOP MOTION FOR CLOCKS.
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1,289,955.

Patented Dec. 31, 1918.



Inventor:
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UNITED STATES PATENT OFFICE.

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STOP-MOTION FOR CLOCKS.

1,289,955.

Specification of Letters Patent.

Patented Dec. 31, 1918.

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To all whom it may concern:

Be it known that I, CHARLES R. SWIFT, a citizen of the United States of America, and a resident of Fairhaven, in the county of Bristol and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Stop-Motions for Clocks, of which the following is a specification.

This invention relates to fire alarm systems and has for its object the production of means for stopping the clocks in the various stations the instant an alarm is sent in.

The invention consists primarily of a clock provided with a pendulum and having an electrically controlled stopping mechanism including a pivoted lever which is adapted to be positioned normally out of the path of the pendulum and to be thrown into the path of said pendulum whenever the fire alarm system is in operation.

The invention further consists in certain novel features of construction and arrangement of parts which will be fully understood by reference to the description of the drawings and to the claims hereinafter given.

For the purpose of illustrating the invention one preferred form thereof is illustrated in the drawings, this form having been found to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which the invention consists can be variously arranged and organized and that the invention is not limited to the precise arrangement and organization of these instrumentalities as herein shown and described.

Of the drawings:

Figure 1 represents an elevation of a clock embodying the principles of the present invention, and showing in diagram the electric circuits therefor.

Fig. 2 represents a front elevation of the stopping mechanism therefor.

Fig. 3 represents a side elevation of the same showing the magnet casing in section, and

Fig. 4 represents a similar elevation showing the circuit breaking lever released from the electrically controlled stop member.

Similar characters designate like parts throughout the several figures of the drawings.

In the drawings, 10 is the main circuit of a fire alarm system. This circuit is con-

nected by means of a relay 11 with the inside circuit 12 connecting with the usual inside bells and other devices to be operated. The inside circuit 12 is provided with a battery 13. The circuit 12 has electrically connected thereto an auxiliary circuit 14, the wires of which lead to the binding posts 15 and 16 of a stop mechanism 17 inclosed within the casing 18 of a clock 19.

This clock 19 is provided with a pendulum 20 adapted to swing in front of the stop mechanism 17. The binding post 15 is connected by the wire 21 to one coil 22 of an electro-magnet, the other coil 23 thereof being connected by the wire 24 to a contact member 25.

This contact member 25 is separated from an adjacent contact member 26 connected by a wire 27 with the binding post 16. The electro-magnet 22-23 is inclosed within a casing 28 having a tubular member 29 depending from the bottom thereof. Within the tubular member 29 is a stop member 30 having movable vertically in the insulated guide members 31-32 and having secured to its upper end an armature 33 normally resting upon the guide member 31 of said tubular member 29.

Pivoted at 34 to the base 35 of the stopping mechanism 17 is a lever 36 of wood or some similar non-conducting material. This lever 36 has secured to its rear face a spring member 37 normally adapted to bear against the contact members 25 and 26 and electrically connect the same.

The front face of the lever 36 is provided with an eye 38 to which one end of a spring 39 is connected, the opposite end of which is connected to a member 40 adjustably mounted in a post 41 and secured in adjusted position by means of the member 42. This member 40 may be adjusted in the member 41 and secured in adjusted position by means of the member 42 to regulate the tension of the spring 39. The relay 11 is in series with the circuit 10 so that every time the closed circuit 10 is broken the relay operates and closes the circuit 12, which is an open circuit, thereby causing the inside bells to ring and the other devices in the circuit 12 to operate.

The circuit 14 is in parallel with the circuit 12 and when the circuit 12 is closed, the stopping mechanism in the circuit 14 is operated. Inasmuch as the lever 36 in its normal position retains the connector 37 in con-

tact with both of the contact members 25 and 26, when the circuit 14 is closed the current passing through the magnets 22 and 23 will lift the armature 33 and with it the stop member 30 out of the path of said lever 36. The spring 39 will then act to move the lever 36 in the direction of the arrow *a* on Fig. 4 of the drawings until it reaches the position indicated in dotted lines at *b* on said figure. When in this position said lever 36 will be in the path of the pendulum 20 and stop its swinging movement, and thereby instantly stop the clock. By the same movement of the lever 36 the circuit breaker 37 will be removed from contact with the contact members 25 and 26 and the electric current will be shut off from the electro-magnet 22—23.

By means of this circuit breaker the resistance of the magnets is eliminated from the inside bell circuit the instant the clock stopping mechanism operates. Obviously this is of great advantage.

In the operation of the device whenever an alarm is pulled in at any of the boxes located throughout the system the circuit 10 will be broken a number of times corresponding with the box number. The relay 11 is so connected to the inside bell circuit that this circuit will be closed the same number of times that the outside circuit 10 is opened, thereby causing the inside bells to ring.

At the first closing of the open circuit 12 the current passing through the auxiliary circuit 14 will cause the clock stopping mechanism 17 to operate and stop the clock, while at the same time the circuit breaker 37 will prevent any further current from passing through the electro-magnet 22—23. The clock will remain stopped until the attendant at the station has completed his other duties and then he may make a record of the time the alarm has been sent in, after which he again sets the clock and returns the lever 36 to its normal position as indicated in Figs. 2 and 3 of the drawings. The device is then in condition to receive another alarm.

This device may be applied to any usual form of clock, provided with a pendulum and it may be electrically connected with any well-known form of fire alarm system.

It is believed that the operation and many advantages of this invention will be fully understood from the foregoing description.

Having thus described my invention, I claim:

1. The combination of a clock provided with a pendulum; an electric circuit; an electromagnet in said circuit; a casing therefor provided with a downwardly extending tubular member; an armature controlled by

said electromagnet normally supported on said tubular member; a stop member secured to said armature and extending through said tubular member; a pivoted lever normally positioned by said stop member out of the path of said pendulum; a circuit breaker actuated by said lever; and a spring for moving said lever about its pivot into the path of said pendulum when said stop member is disengaged from said lever.

2. The combination of a clock provided with a pendulum; an electric circuit; an electro-magnet in said circuit; a casing therefor provided with a downwardly extending guide member; an armature controlled by said electro-magnet normally supported on said guide member; a stop member secured to said armature and supported by said guide member; a pivoted lever normally positioned by said stop member out of the path of said pendulum; and a spring for moving said lever about its pivot into the path of said pendulum when said stop member is disengaged from said lever.

3. The combination of a clock provided with a pendulum; an electric circuit; an electro-magnet in said circuit; a casing therefor provided with a downwardly extending guide member; an armature controlled by said electro-magnet normally supported on said guide member; a stop member secured to said armature and supported by said guide member; a pivoted lever normally positioned by said stop member out of the path of said pendulum; a circuit breaker actuated by said lever; and a spring for moving said lever about its pivot into the path of said pendulum when said stop member is disengaged from said lever.

4. The combination of a clock provided with a pendulum; a board adapted to be secured to the inner face of the rear wall of said clock; a lever pivoted thereto and adapted to be moved into the path of said pendulum; an electrically controlled stop member mounted on said board and normally retaining said lever out of the path of said pendulum; two binding posts on said board; wires leading therefrom to a fire alarm circuit; a wire leading from one binding post to said stop member controlling device; two separated contacts; a wire from one contact to the other binding post; a wire leading from the other contact to said controlling device; and a spring member on said lever normally adapted to connect said contacts.

Signed by me at New Bedford, Mass., this 16th day of Sept., 1916.

CHARLES R. SWIFT.

Witnesses:

EMMA T. ADAMS,
ALBERT E. RUSSELL.