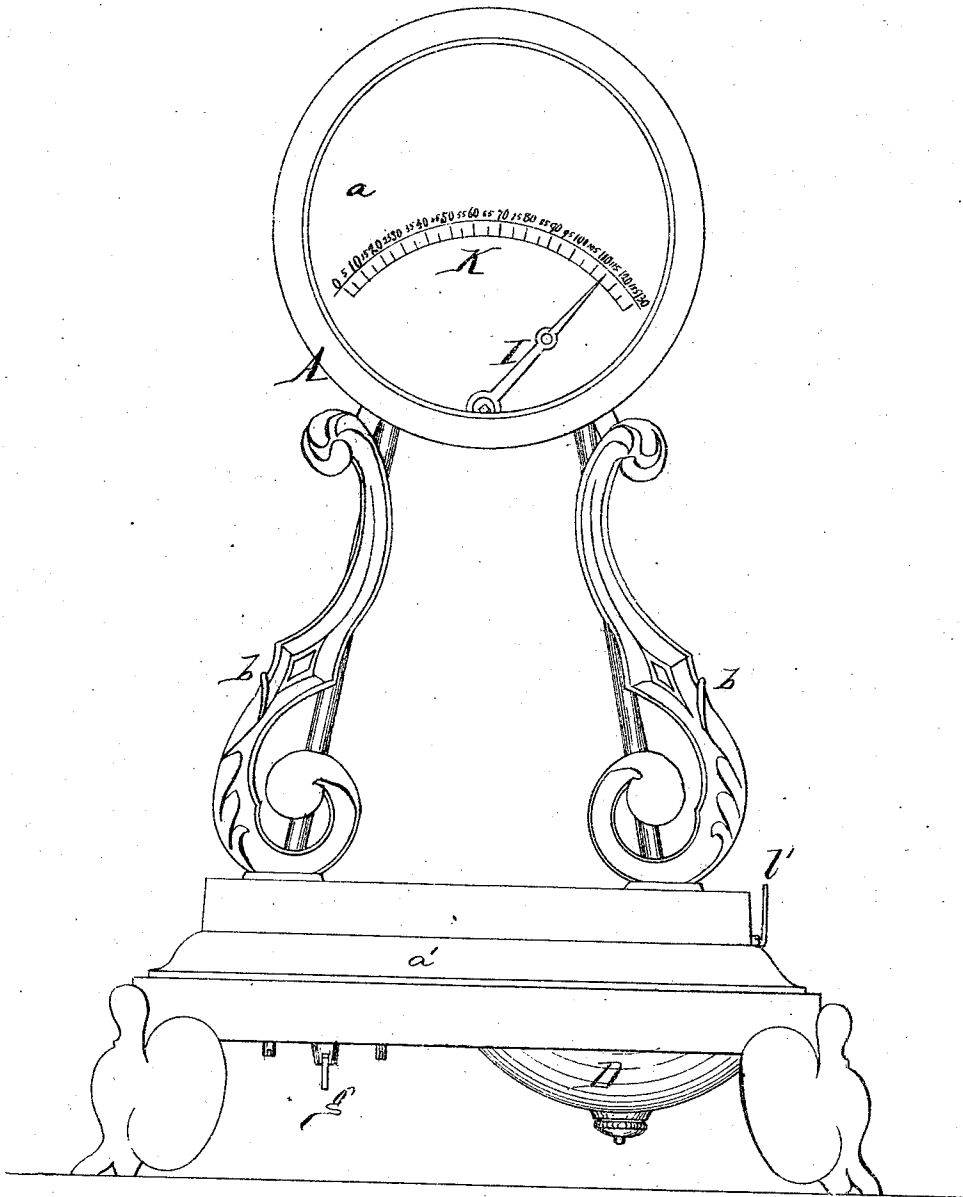


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Fire & Burglar Alarm

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Fig. 1.

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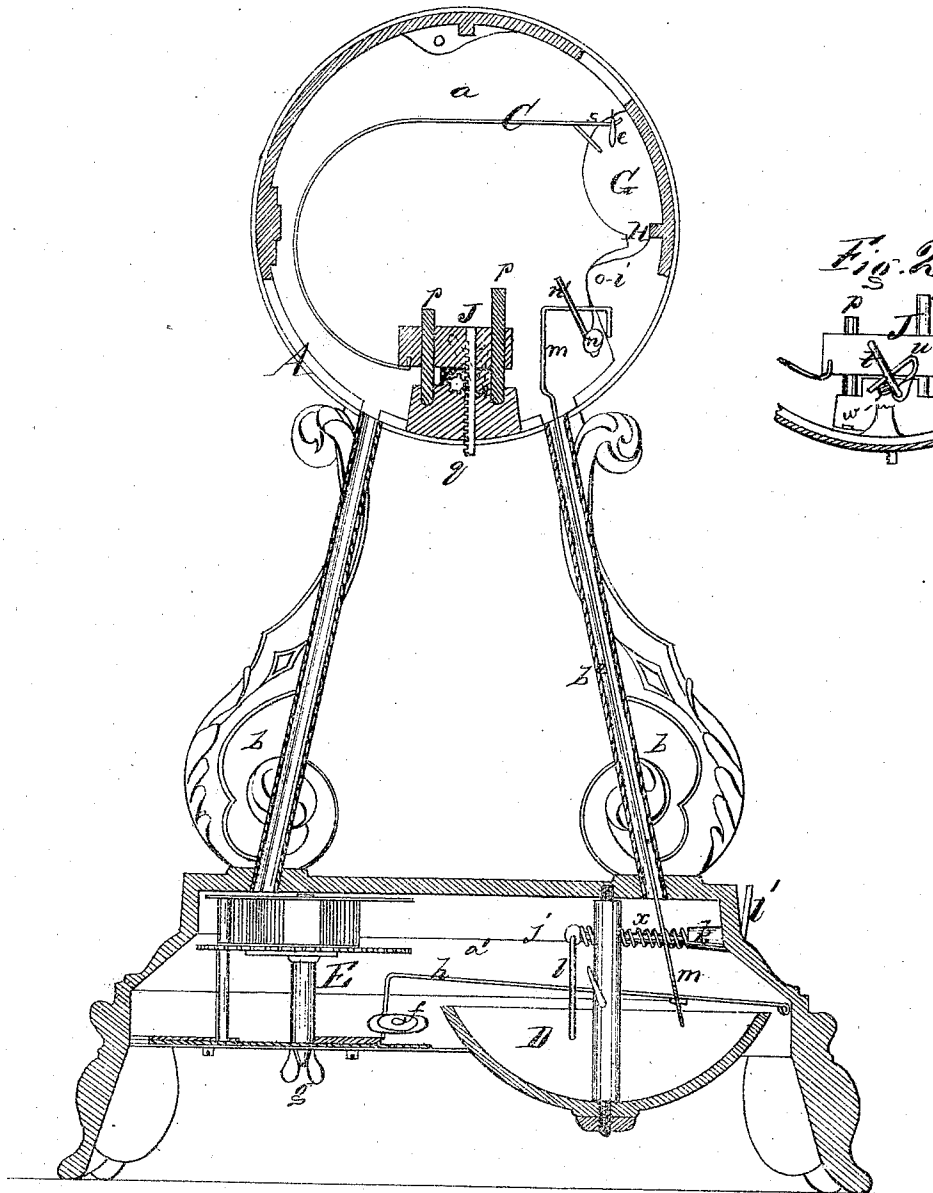
Witnesses
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Fig. 2.



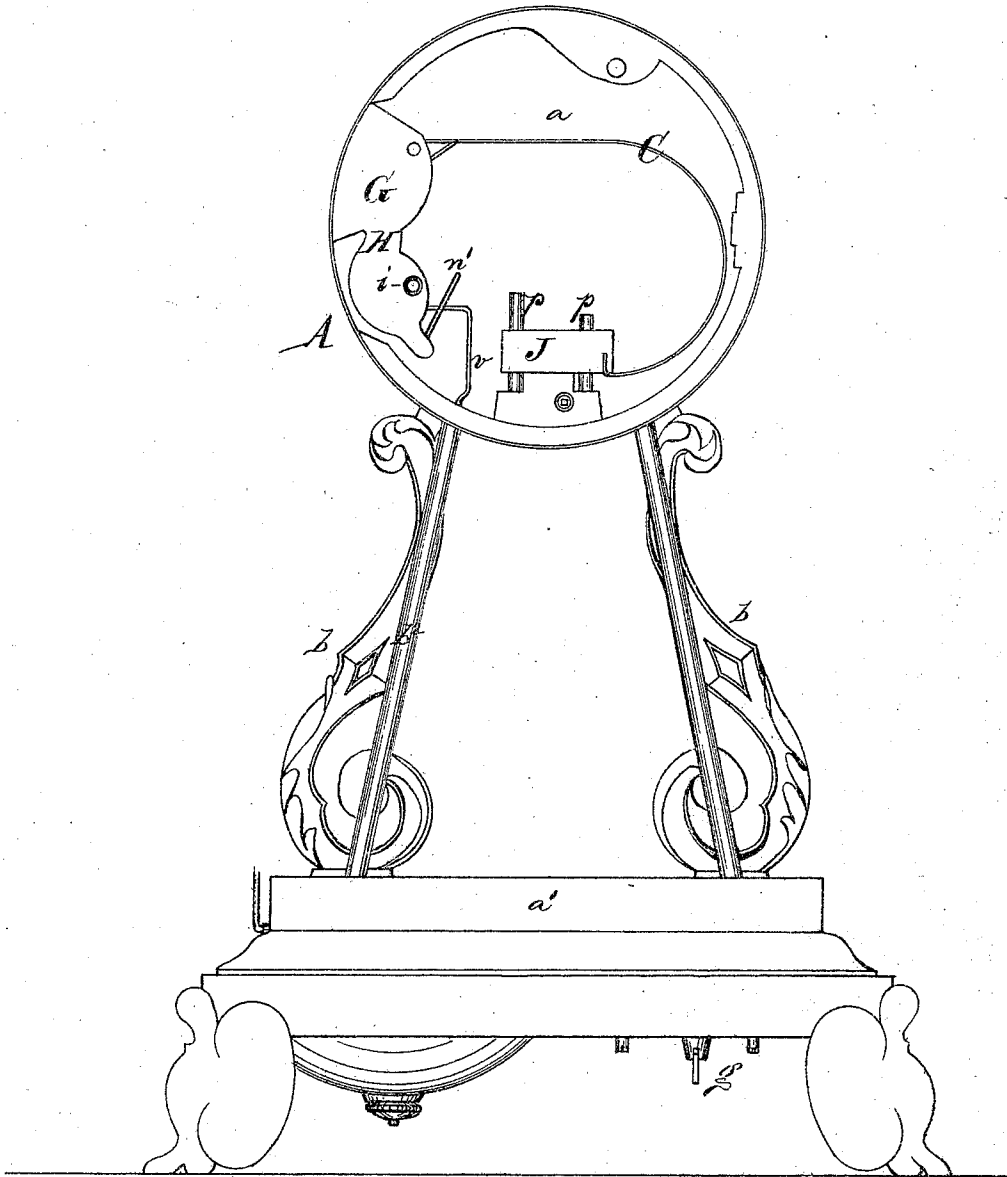
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Fig. 3.



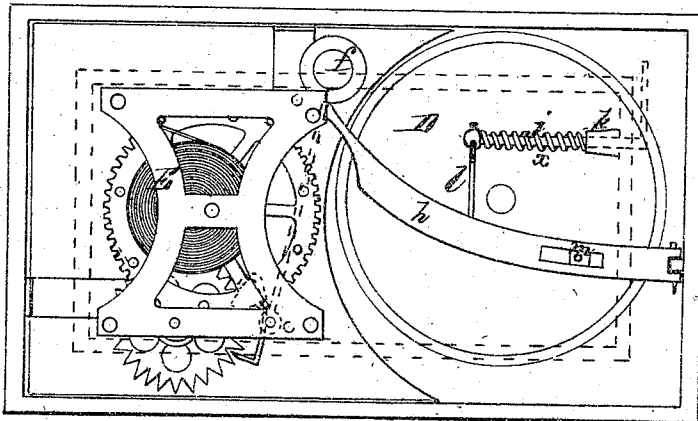
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Fig. 4.



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UNITED STATES PATENT OFFICE.

HENRY LEWIS BROWER, OF NEW YORK, N. Y., ASSIGNOR TO CHARLES D. FREDERICKS, OF SUMMIT, NEW JERSEY.

IMPROVEMENT IN COMBINED FIRE AND BURGLAR-ALARMS.

Specification forming part of Letters Patent No. 118,191, dated August 22, 1871.

To all whom it may concern:

Be it known that I, HENRY LEWIS BROWER, of the city, county, and State of New York, have made an invention of a new and useful Combined Fire and Burglar-Alarm; and that the following is a full, clear, and exact description and specification of the same.

The object of this invention is to combine a fire and burglar-alarm in one portable instrument, which can be placed in any part of a room, which does not require wires or other fixed attachments, and which can be set up and moved about by the purchaser without requiring the services of an expert mechanic. To this end my invention consists of the combination of the following devices, viz.: First, an alarm, having a bell or other sound-generator and the requisite mechanism for striking it or putting it in action. Second, a detent for the striking or actuating mechanism, upon which detent a thread or its equivalent can be arranged to operate so that the detent is moved and the actuating mechanism of the sound-generator is liberated when the thread is strained by the entrance of a burglar through an aperture across which the thread is extended. Third, a thermometric indicator of temperature, connected with the detent of the striking mechanism in such manner that when the temperature rises to a predetermined degree of the thermometer the movement of the indicator effects the liberation of the actuating mechanism of the sound-generator, and an alarm is sounded.

In order that my invention may be fully understood, I have represented in the accompanying drawing, and will proceed to describe, an instrument embodying my invention in the best form which I have thus far produced.

In said drawing, Figure 1 represents a front view of the instrument. Fig. 2 represents a vertical section of the same. Fig. 3 represents a view of the rear of the same. Fig. 4 represents a view of the mechanism in the base of the instrument, with the casing removed.

The case A of the instrument, in this example, is composed mainly of two parts, viz., the head *a* and the base *a'*, which are separated by legs *b*, so that the whole resembles a clock-case. The thermometric indicator is placed in the head *a* of the case, and consists of a bent band, C, of two metals of different expansive powers—as,

for example, copper and iron—so that the said indicator changes its form when the temperature varies. The alarm mechanism is contained in the base *a'* of the instrument, and consists in this example of a bell, D, and the striking mechanism E thereof, the latter being actuated by a spring, and operating upon the bell through a hammer, *f*, in substantially the same manner as the striking mechanism of a common alarm-clock. As the peculiarities of the actuating mechanism are not a portion of the invention and the mechanism may be greatly varied, it is not necessary to describe it more particularly. When the actuating mechanism is wound up, by applying the hand to the handle *g* the hammer is prevented from operating upon the bell by means of a detent, *h*, whose hook-formed end imprisons the stem of the hammer. In order that the thread may be conveniently made to operate upon this detent a small rock-shaft, *j*, is constructed to rock in a tubular bearing, *k*, secured to the casing. The inner end of this rock-shaft is fitted with an arm, *l*, which, when the shaft is rocked on its axis, raises the detent *h* and liberates the bell-hammer. The outer end of the rock-shaft is fitted with an arm, *l'*, which is perforated at its end to enable a thread to be secured to it, so that when said thread is pulled the shaft is rocked and the detent is liberated. In order that the instrument may operate as a fire-alarm the indicator of temperature is combined with the detent *h* by means of a rod, *m*, and a weight, G, which is liberated by the movement of the indicator. The weight G is constructed upon the arm of a lever, H, which is fitted to turn upon a pivot, *i*. The weight also has a pin, *e*, projected from its face within the range of motion of the end *s* of the indicator C, which is slotted transversely to embrace said pin, so that the indicator may hold the weight from turning the lever until the indicator has moved a certain distance. The other arm of the lever H has a stud, *n*, projected from it to engage with the hook-formed end of the rod *m*, which extends downward, through a tube, *b²*, into the base *a'*, and through a slot in the detent. The lower end of this rod is fitted with a nut which, when the rod is drawn upward, bears upon the under side of the detent and raises it. The indicator of temperature is made fast to a base-block, J, which is constructed to slide up and down upon two guides, *p p*, with sufficient

friction to prevent it from moving accidentally. It is also fitted with a rack, *q*, whose teeth engage with those of a pinion, *r*, mounted upon an arbor, and the rear end of the arbor is squared to receive a key by which the pinion may be turned. The base-block *J* of the indicator is connected by a link, *t*, Fig. 2^a, with an arm, *u*, projecting from an arbor, *w*, to which a hand, *I*, is secured that traverses a dial, *K*, upon which the degrees of the thermometric scale are marked, so that the hand is caused to point to a different degree according as the base-block is raised or depressed; and the thermometric indicator is so adjusted that, when it is set by raising or lowering it, (by moving the pinion,) it will change its form sufficiently to disengage from the pin *e* of the weight when the temperature is that indicated by the position of the hand *I* upon the dial *K*.

The operation of this part of the apparatus is as follows: The thermometric indicator is set to operate at the predetermined degree of temperature by turning the pinion-shaft, thereby raising or lowering the base-block and indicator and moving the hand *I* until it points to that degree upon the dial, after which the spring of the actuating mechanism is wound up. Whenever, then, the temperature reaches that thermometric degree the slotted end of the indicator disengages from the pin *e* of the weight, which, being released, turns the lever *H* by gravitation. When the lever turns the stud *n* is brought into contact with the hook-formed end of the rod *m*, and, raising that rod, pulls up the detent *h* and liberates the hammer *f*, which immediately strikes the bell, and continues to strike it until the spring runs down.

The instrument may be set upon any article of furniture or upon the floor. A thread, by preference of black silk, is tied into the eye of the lever *l'*, and is carried across every opening which is to be guarded, the thread being easily sustained in its position by sticking a common pin slant-

wise into the casing at each side of said opening and its end being made fast to the last pin. If a person should attempt to pass through an opening so guarded, the thread will be strained, the arm *l'* of the rock-shaft and the rock-shaft will be turned, the detent *h* will be raised, and the alarm will immediately be sounded in the same way as if by a rise in temperature.

In order to prevent the rock-shaft *j* from being accidentally turned by the weight of its arms a friction-spring, *x*, is applied to it. A guard, *n'*, is also fitted to the stud *n* of the lever *H* to prevent the accidental displacement of the end of the rod *m*.

In the instrument thus described the thread is described as connected directly with the detent through the intervention of the rock-shaft and its arms; but the detent may be so constructed that the thread may be connected directly with it, in which case the rock-shaft will not be required.

In place of using a bell for the sound-generator, some other suitable sound-generator may be used.

I do not claim the peculiarities of construction of the thermometric indicator as my invention; but

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination, in one portable instrument, of the sound-generator with its actuating mechanism, the detent constructed to be actuated by a thread, and the thermometric indicator, substantially as before set forth, the whole constituting a compound fire and burglar-alarm.

Witness my hand this 19th day of November, A. D. 1870.

H. L. BROWER.

Witnesses:

R. S. WEEKS,
L. D. FREDRICKS.