

No. 626,318.

Patented June 6, 1899.

R. G. CALLUM.  
FIRE ALARM INSTRUMENT.

(Application filed Feb. 20, 1899.)

(No Model.)

Fig. 1.

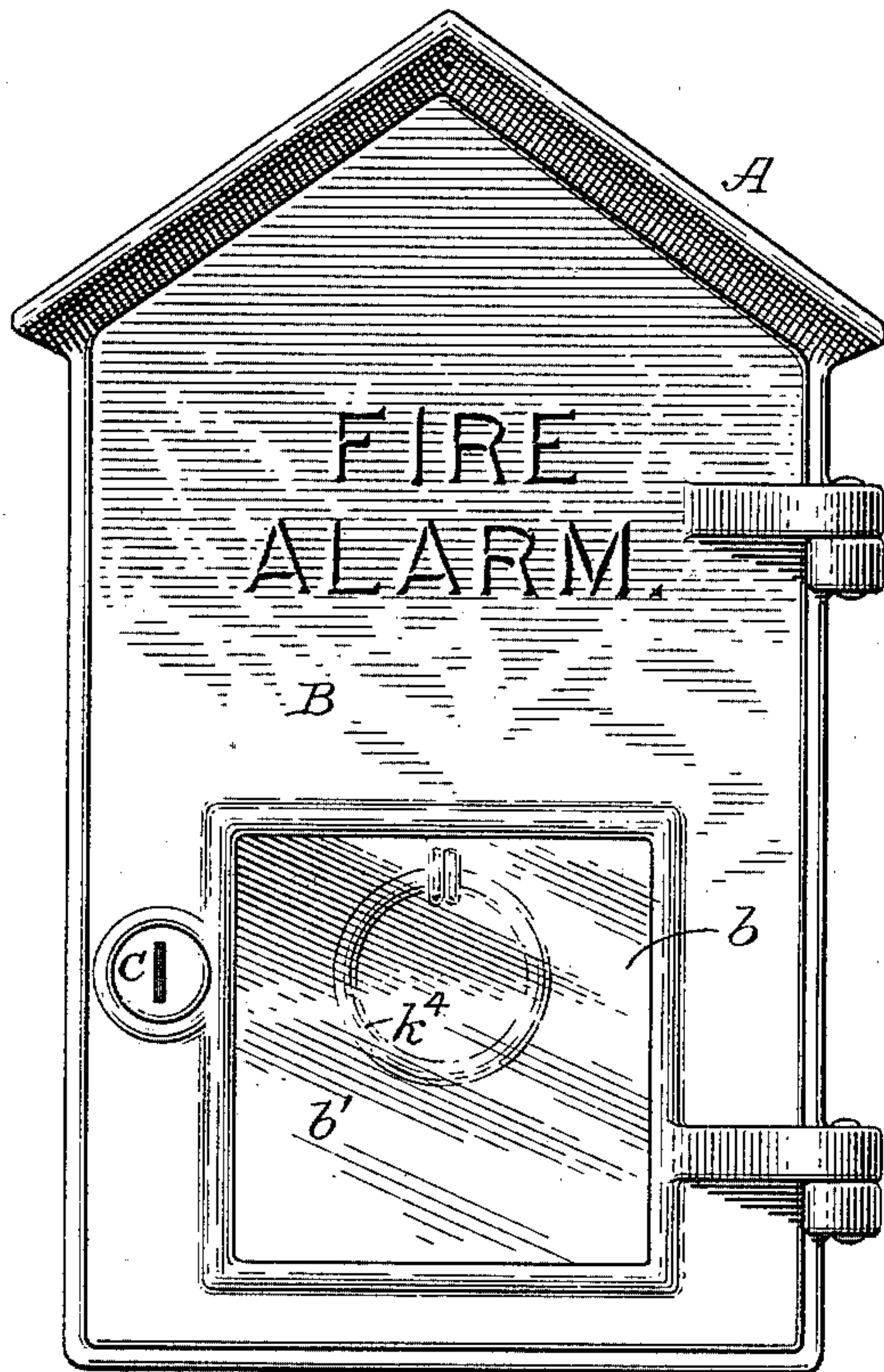


Fig. 2.

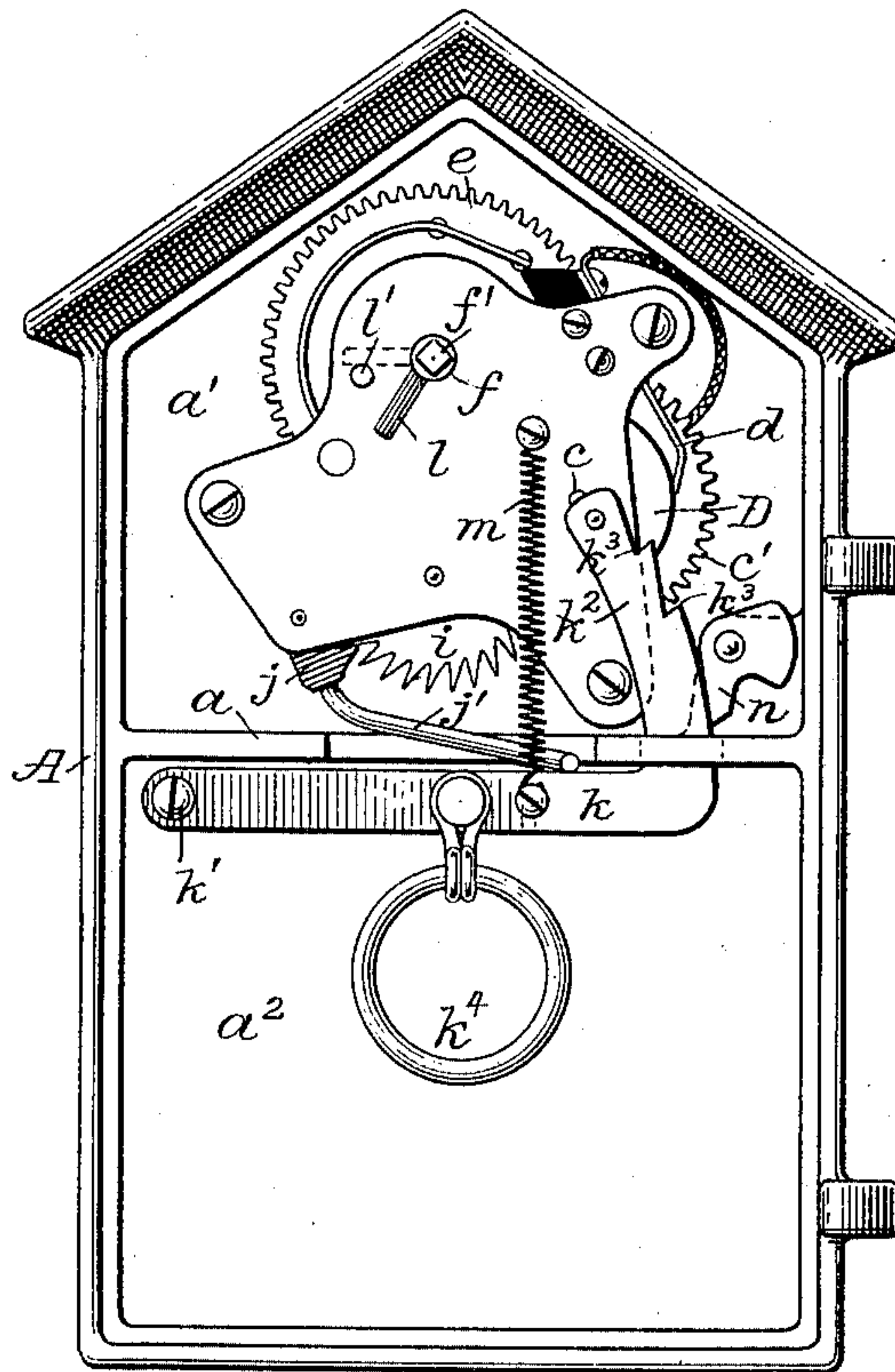
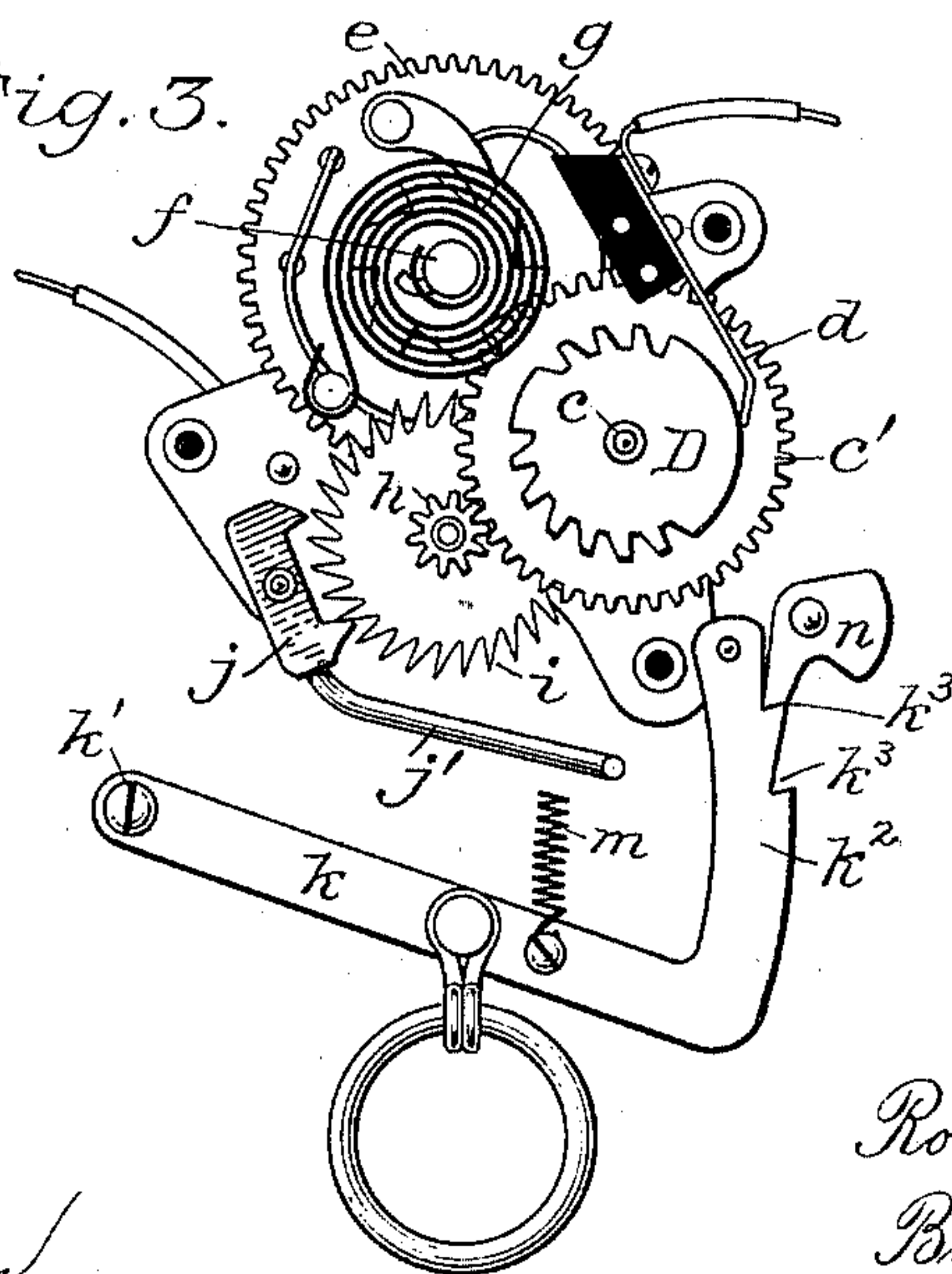


Fig. 3.



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# UNITED STATES PATENT OFFICE.

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## FIRE-ALARM INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 626,318, dated June 6, 1899.

Application filed February 20, 1899. Serial No. 706,184. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT G. CALLUM, a citizen of the United States, residing at Washington, in the District of Columbia, have invented new and useful Improvements in Fire-Alarm Instruments, of which the following is a specification.

My invention relates to the class of fire-alarm-signaling instruments which when operated for giving an alarm of fire indicates the fact upon the instrument itself, the object being to fix as far as possible the responsibility for false alarms and to indicate the fact that an alarm has been given by such instrument and not by any defect in the system of wires or instruments connected therewith. In some prior instruments of this character a glass plate is relied upon, which must first be broken before access can be had to the alarm mechanism; but in such instruments the mechanism is such as to either remain in its original or normal position after an alarm has been given or to be easily placed so by parties having a knowledge of its construction. This has led to considerable annoyance and expense in investigating the cause of a false alarm where it has been denied that a particular instrument has been operated and the assertion made that the glass plate was broken days or weeks before the alleged alarm was given. In other forms of instruments designed with the same object in view the mechanism is such as to be applicable to "auxiliary boxes" only and not to instruments from which the signal is actually transmitted.

The object sought by me is a signal-transmitting instrument which will show beyond all doubt whether an alarm has or has not been transmitted therefrom. This I accomplish by a windable mechanism so constructed and organized that a rewinding and resetting are necessary after each operation thereof, the rewinding and resetting mechanism being rendered inaccessible to unauthorized parties by a suitable casing secured by lock and key or other suitable means.

After a detail description of an instrument embodying my invention the features deemed novel will be duly specified in the claims hereunto annexed.

Referring to the drawings, Figure 1 is a front view of the box or casing of my im-

proved instrument. Fig. 2 is a similar view, but with the door thereof removed for disclosing the interior mechanism; and Fig. 3 is a detail of the signaling mechanism.

The box or casing A is of the usual exterior form, having a removable cover or door B, secured by a lock C or other suitable means, and it is divided by a partition *a* into two separate compartments *a'* and *a''*. The upper compartment *a'* contains the signal-transmitting mechanism and is completely closed from the outside by the cover or door B. The lower compartment *a''* contains the hook or lever for starting the signaling mechanism and is provided with an opening *b*, which may be formed in the door B, as shown, or in one of the sides of the box, as may be deemed most desirable. The signaling mechanism consists of a circuit-breaking wheel D and contact-brush *d*, connected in circuit with a central station, the former being driven by suitable clockwork and provided with notches for breaking the circuit and indicating at the central station a number corresponding to that given to the particular instrument, all as will be readily understood. The circuit-breaking wheel D is secured to a shaft *c*, driven by a gear *e* on the driving-shaft *f*, the latter being driven by a spring *g* in the usual manner. Upon shaft *c* is a gear *c'*, which, through pinion *h*, drives the escape-wheel *i*. A pallet *j* is mounted in proper relation to the escape-wheel and is provided with a stem or arm *j'*, which projects through an opening in the partition *a* and in the path of a lever *k*, located in the compartment *a''*, so that when said lever is moved in contact with said arm the clockwork will be held in check and when moved away from said arm the clockwork will be permitted to revolve the circuit-breaking wheel D and give an alarm, as will be readily understood. The driving-shaft *f* is provided with the usual winding-stem *f'*, and at one side thereof is a lateral pin *l*, which engages a stop *l'* and limits the rotation of said shaft to a partial revolution only. The shaft *c*, carrying the circuit-breaking wheel, is geared to make four complete revolutions during the limit of movement allowed the driving-shaft *f* by the stop *l'*. The starting-lever *k* is pivoted at *k'* in the lower compartment *a''* of the casing A



and is held in its normal or raised position by a spiral spring  $m$ , and at its outer end it is provided with an arm or extension  $k^2$ , concentric to its pivotal point and projecting into the compartment  $a'$  through an opening in the partition  $a$ , as clearly shown in Fig. 2. The arm  $k^2$  is provided with notches  $k^3$ , and adjacent to the partition  $a$  is a gravity-pawl  $n$ , which when the lever  $k$  is moved for releasing the clockwork engages the notches  $k^3$  and prevents the lever from being returned to its original position. It is now to be understood that the upper compartment of the casing  $A$  is wholly inaccessible for any purpose except by opening the door  $B$  and that when the starting-lever is moved far enough to permit the operation of the clockwork it will be engaged by the pawl  $n$  and held in the position to which it was moved. It will thus be seen that when the clockwork once starts it will run entirely down and cannot be rewound, nor can the starting-lever be returned to its original position except by opening the door of the casing.

The lever  $k$  is provided with a ring  $k^4$ , which is to be pulled for sending in an alarm, and this ring is accessible through the opening  $b$  in the door. In order to protect the interior mechanism from dust and dirt and to remove as far as possible the temptation offered to mischievous parties to send in a false alarm, I cover the opening  $b$  with a plate of glass  $b'$ , which must first be broken before an alarm can be given; but this forms no part of my present invention and may be dispensed with. After the glass  $b'$  has been broken and an alarm given the position of the lever  $k$  and also the run-down condition of the clockwork will indicate beyond all question that the instrument has been operated, and in order to reset the instrument the door  $B$  must be opened, the lever  $k$  released from the pawl  $n$ , and the clockwork rewound.

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

1. In a fire-alarm instrument the combination of an outer case or box having a removable cover or door, means for securing said cover or door, a windable mechanism so located in said box as to be inaccessible for rewinding except by way of said cover or door, an opening into said box in addition to that covered by the door or cover, starting mechanism accessible through said opening, and means whereby upon the moving of said starting mechanism, the windable mechanism will be permitted to run until its force is expended, substantially as described.

2. In a fire-alarm instrument the combination of an outer case or box having a removable cover or door, means for securing said cover or door, a windable mechanism so located in said box as to be inaccessible for rewinding except by way of said cover or door,

an opening into said box in addition to that covered by the cover or door, a starting device accessible through said opening, means whereby upon the moving of said starting mechanism the windable mechanism will be permitted to run until its force is expended, and means for locking said starting device to the position to which it is moved, substantially as described.

3. In a fire-alarm instrument the combination of an outer case or box having a removable cover or door, a windable mechanism in said box having an escapement-wheel and pallet, an opening into said box in addition to that covered by the door or cover, a starting device accessible through said opening normally engaging the pallet of the windable mechanism and adapted to be moved therefrom for permitting the rotation of the windable mechanism, and means for locking device after it has been moved, substantially as described.

4. In a fire-alarm instrument the combination of an outer case or box divided into two separate compartments by a suitable partition, one of which is closed by a suitable door or cover, the other open or partially open, a windable mechanism located in said closed compartment and having an escapement-wheel and pallet, a starting device normally in engagement with said pallet for holding the windable mechanism in check, a pull for said device located in said open compartment, and mechanism located in said closed compartment for locking the starting device after it has been moved, substantially as described.

5. In a fire-alarm instrument the combination of an outer case or box divided into two separate compartments by a suitable partition, one of which is closed by a suitable door or cover, the other open or partially open, a windable mechanism located in said closed compartment having an escapement-wheel and pallet and the latter having an arm or extension projecting into said open compartment through an opening formed in said partition, a lever in said open compartment having an arm or extension projecting into said closed compartment through an opening in said partition, a spring for holding said lever in engagement with the arm or projection of the pallet, and locking mechanism located in said closed compartment for engaging the arm or extension of the lever and holding it in the position to which it is moved for permitting the rotation of the windable mechanism, substantially as described.

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

ROBERT G. CALLUM.

Witnesses:

JOHN MCC. GLOVER,  
JOHN W. FRITCH.