

No. 688,212.

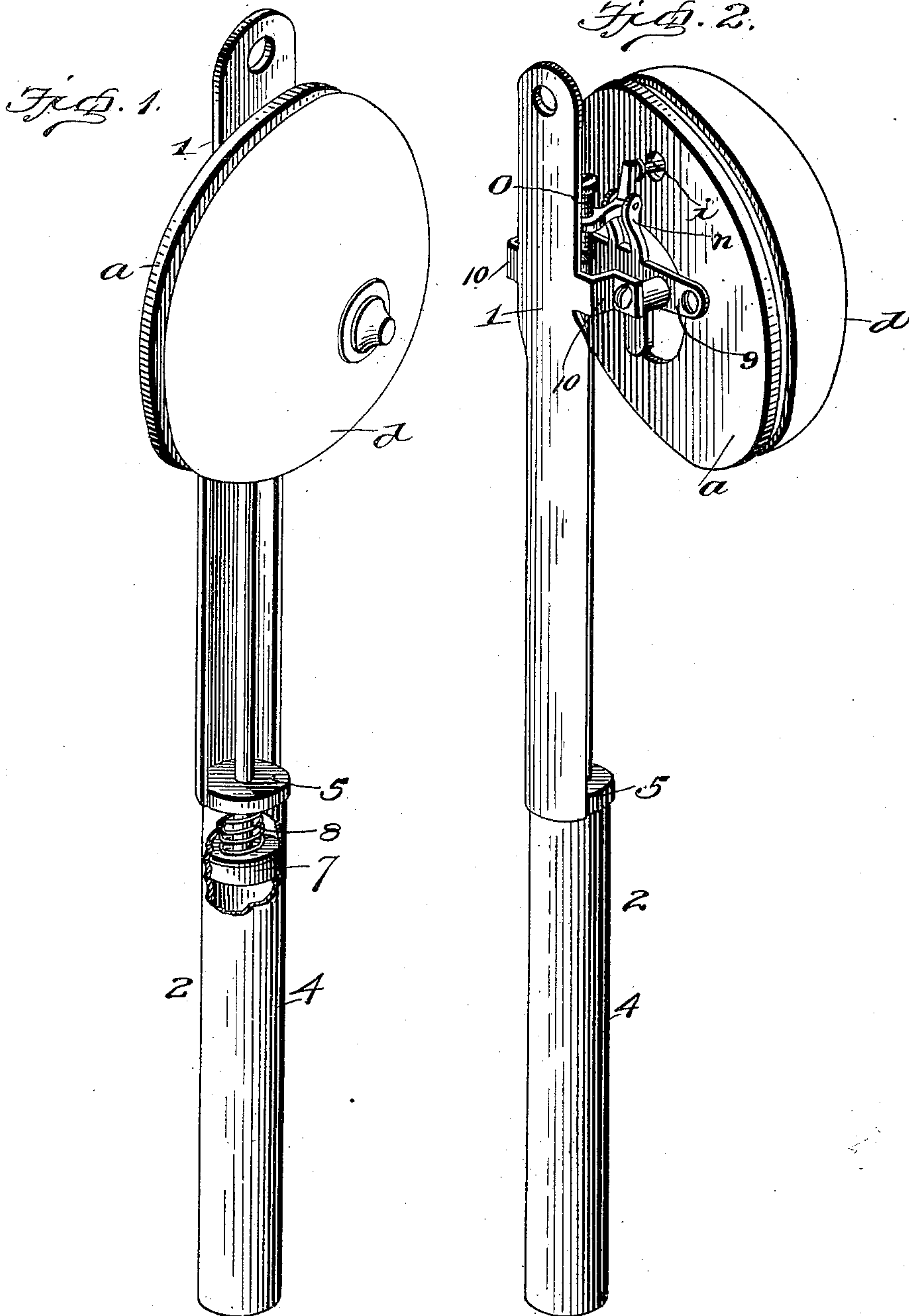
Patented Dec. 3, 1901.

H. C. VIERKANT.
HERMOSTATIC FIRE ALARM.

(Application filed Mar. 18, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses
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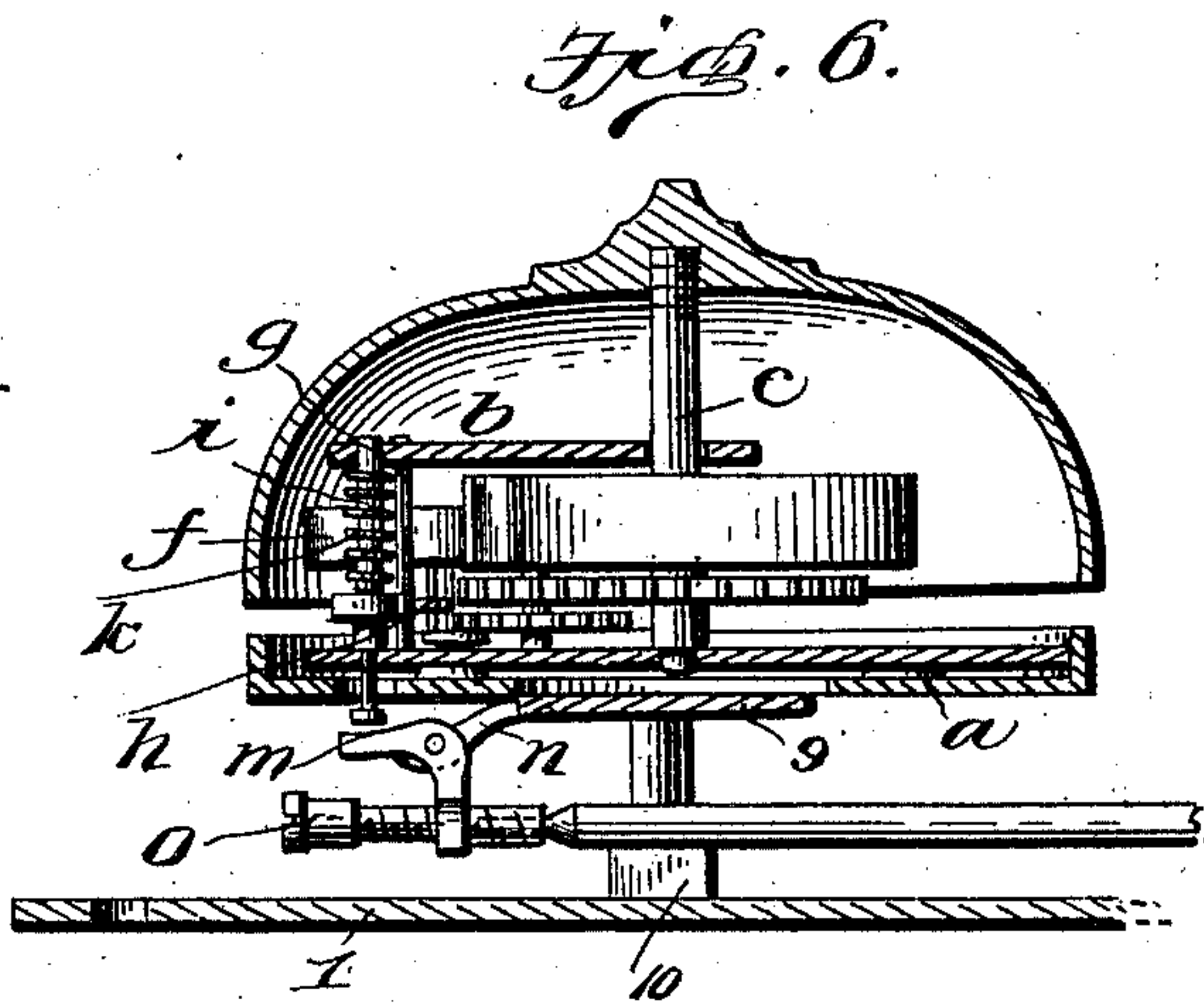
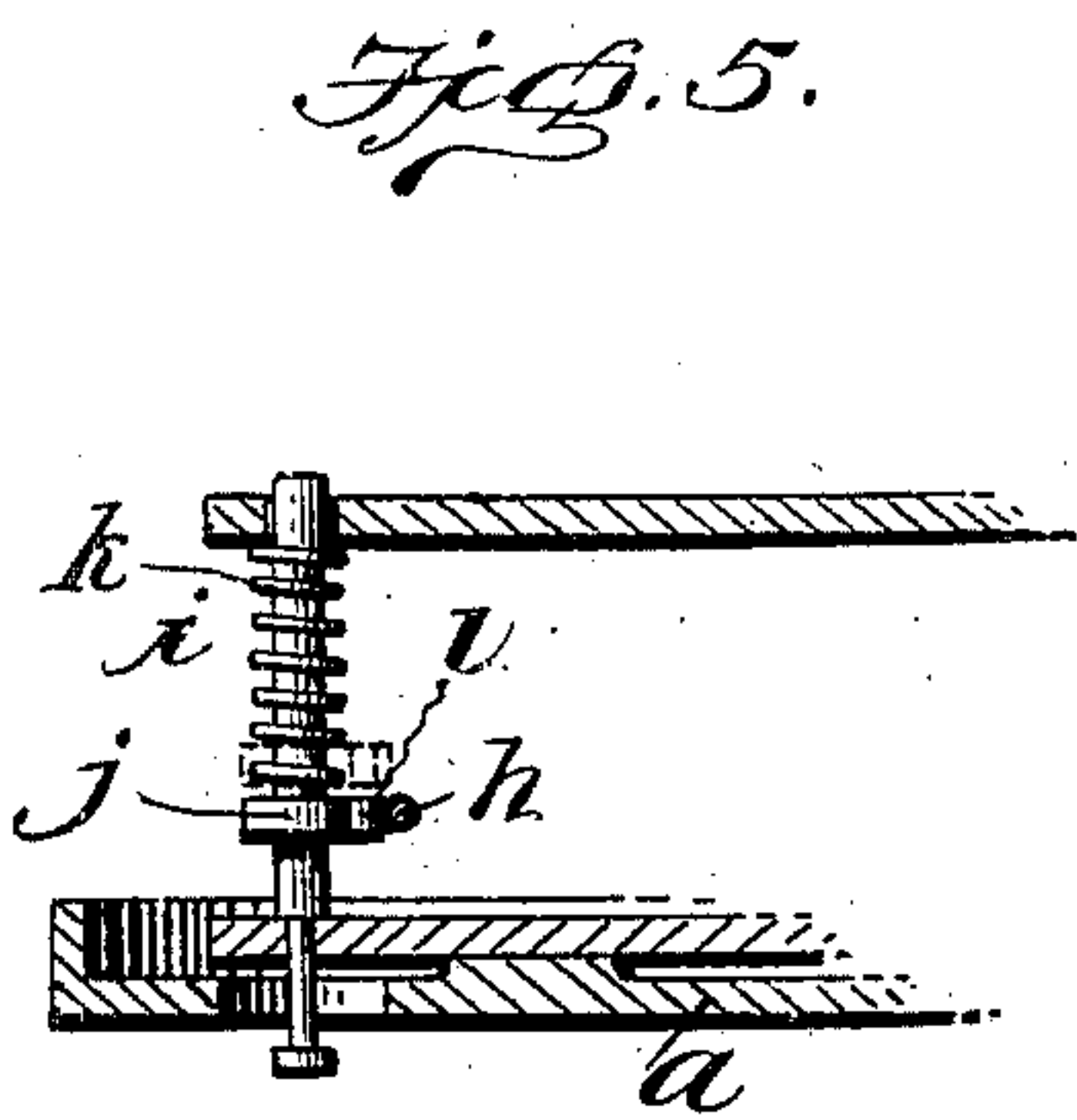
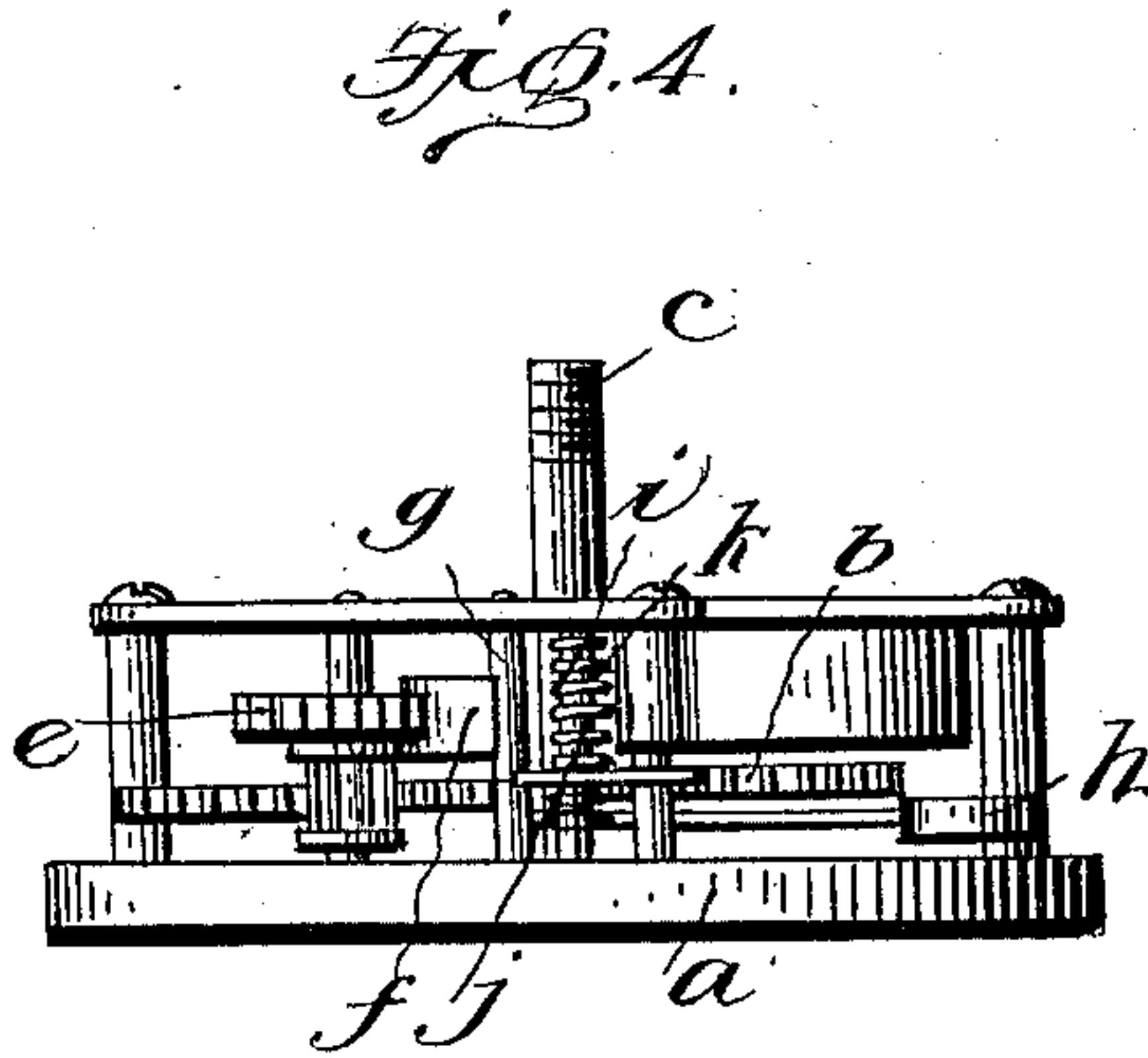
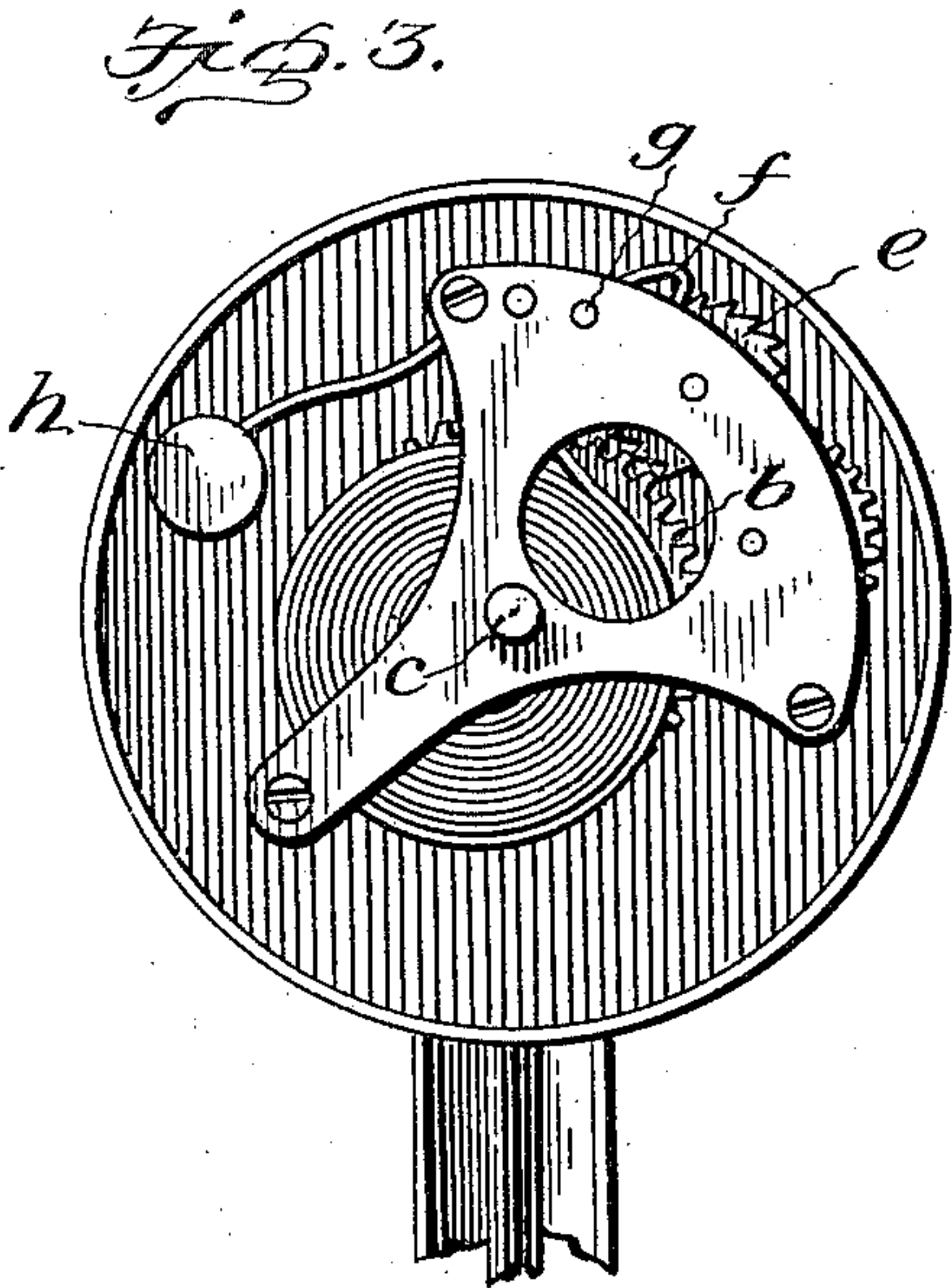
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THERMOSTATIC FIRE ALARM.

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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

HERMAN C. VIERKANT, OF TARRYTOWN, NEW YORK.

THERMOSTATIC FIRE-ALARM.

SPECIFICATION forming part of Letters Patent No. 688,212, dated December 3, 1901.

Application filed March 18, 1901. Serial No. 51,725. (No model.)

To all whom it may concern:

Be it known that I, HERMAN C. VIERKANT, a citizen of the United States, residing at Tarrytown, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Thermostatic Fire-Alarms; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to an automatic fire-alarm of the thermostat type—that is, fire-alarms which will be automatically operated by the rise of the temperature to an unusual degree in a room, and thus sound an alarm and notify the occupants of the building of the impending danger.

With this object in view the invention consists of certain novel features of construction, combination, and arrangement of parts, which will be hereinafter more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a detail perspective view of my improved fire-alarm with a portion of the cylinder or tube of the thermostat broken away to illustrate the plunger. Fig. 2 is a rear perspective view. Fig. 3 is a front view of the spring-actuated train of gearing. Fig. 4 is a top view of the same. Fig. 5 is a sectional view to illustrate the clapper-brake, and Fig. 6 is a sectional view through the bell-windingshaft.

In the drawings, 1 denotes the supporting-frame, which is adapted to be secured at any suitable point in a room, and 2 denotes a thermostat secured to the lower end of the frame and consisting in the present instance of a tube 4, provided with a removable cap 5, which is soldered or otherwise secured to the lower end of the frame and by means of which the connection of the frame with the tube is effected, a plunger-stem 7, projecting upwardly from the plunger through the cap, a coiled spring 8, confined between the plunger and the cap and exerting its energy to force the plunger downwardly, and a fluid or other agent sensitive to heat and adapted to quickly expand and contract by the changes of temperature, and thus when expanding elevate

or lift the plunger and when contracting permit the spring to lower the plunger.

The alarm consists of the base *a*, suitably secured to a bracket-plate 9, attached to angular arms 10, extending from opposite sides of the supporting-frame, said base having mounted thereon a spring-actuated train of gearing *b*, the winding-shaft *c* of which is screw-threaded to receive the gong *d*. The gong is screwed upon the shaft, as shown in Fig. 6, and acts as a key by which said shaft may be rotated to wind up the spring.

e denotes the escape-wheel, suitably geared with the train of gearing, and *f* denotes the pallets for said escape-wheel, said pallets being fixed to a pallet-shaft *g*, which has also fixed to it a bell-clapper *h*.

i denotes a brake which consists of an end-wise-movable shaft suitably mounted in the frame that supports the spring-actuated gearing and is provided with a fixed collar *j*, between which and the frame of the gearing is interposed a collar-spring *k*. This collar has projecting down from it a stud *l*, which is held normally by the spring in the path of movement of the gong-clapper and prevents said clapper from being vibrated by the spring-actuated gearing. The inner end of this movable shaft projects through an opening in the base *a* and is adapted to be engaged by one limb of a bell-crank lever *m*, pivoted between lugs *n*, formed on the bracket 9. The opposite limb of the bell-crank lever lies between the arms 10 and is provided with a set-screw *o*, which is arranged above and in the path of movement of the upper end of the plunger-stem and which is capable of vertical adjustment to set the alarm, so that it will be automatically sounded when the heat in the room reaches different degrees of temperature.

The operation of the device is as follows: The set-screw is properly adjusted to correspond to the temperature at which it is desired to set off the alarm. When the temperature of the room rises to the point at which the alarm is to be sounded, the fluid or other agent within the tube or casing of the thermostat will elevate the plunger, which in elevating its stem lifts one limb of the bell-crank lever and throws the other limb

into engagement with the endwise-movable shaft, thus throwing the lug of said shaft out of engagement with the bell-crank and allowing the spring-actuated gearing to vibrate said clapper and sound the alarm, thus giving notice to the occupants of the building or place where the device is located of impending danger. As the gong is attached to the winding-shaft, all that is necessary is to rotate the gong, and the spring will be wound up.

From the foregoing description, taken in connection with the accompanying drawings, the construction, mode of operation, and advantages of my invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and details of construction may be made within the scope of the invention without departing from the spirit or sacrificing any of the advantages thereof.

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

1. The combination with a thermostat including a movable stem, of a supporting-frame connected to said thermostat and provided with opposite angular arms located on opposite sides of said stem, a bracket-plate secured to said arms and having lugs, a base secured to said bracket-plate and having an opening therein, a gong, a spring-actuated train of gearing, a clapper for the gong actuated by said gearing, a brake for arresting the movement of said gearing, said brake comprising an endwise-movable, spring-actuated shaft projecting through said opening in the base and carrying a contact-piece projecting normally into engagement with the clapper to hold the same against vibration, a bell-crank lever pivoted to said lugs, one limb of which is arranged to actuate the brake and

release the gearing to sound an alarm, and a screw-threaded adjustable contact-piece fitted in a threaded socket in the other limb of the bell-crank lever and contacting with the stem to be actuated thereby, substantially as described.

2. In a thermostatic fire-alarm, the combination of a supporting-frame provided at one end with a thermostat in which is included an endwise-movable stem extending parallel with the frame, said frame being provided on opposite sides of the stem with angular arms, a bracket-plate attached to said arms and having lugs, a base attached to said bracket-plate and having an opening formed therein, a spring-actuated train of gearing carried by said base, a gong connected to the base, a clapper for the gong and actuated by said gearing, said brake comprising a spring-actuated shaft movable endwise in the opening formed in the base and carrying a lug or contact-piece projecting normally into engagement with the clapper to hold the same against vibration, a bell-crank lever pivoted to the lugs on the bracket-plate and having one of its limbs arranged to contact with the outer end of said spring-actuated shaft and move the same endwise to release its lug from engagement with the clapper and permit of the sounding of the alarm, and an adjustable contact-piece carried by the other limb of the bell-crank lever and arranged in the path of movement of the thermostatic stem to be operated thereby, substantially as described.

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

HERMAN C. VIERKANT.

Witnesses:

F. C. HUSTED,
ARTHUR HUMPHREYS.