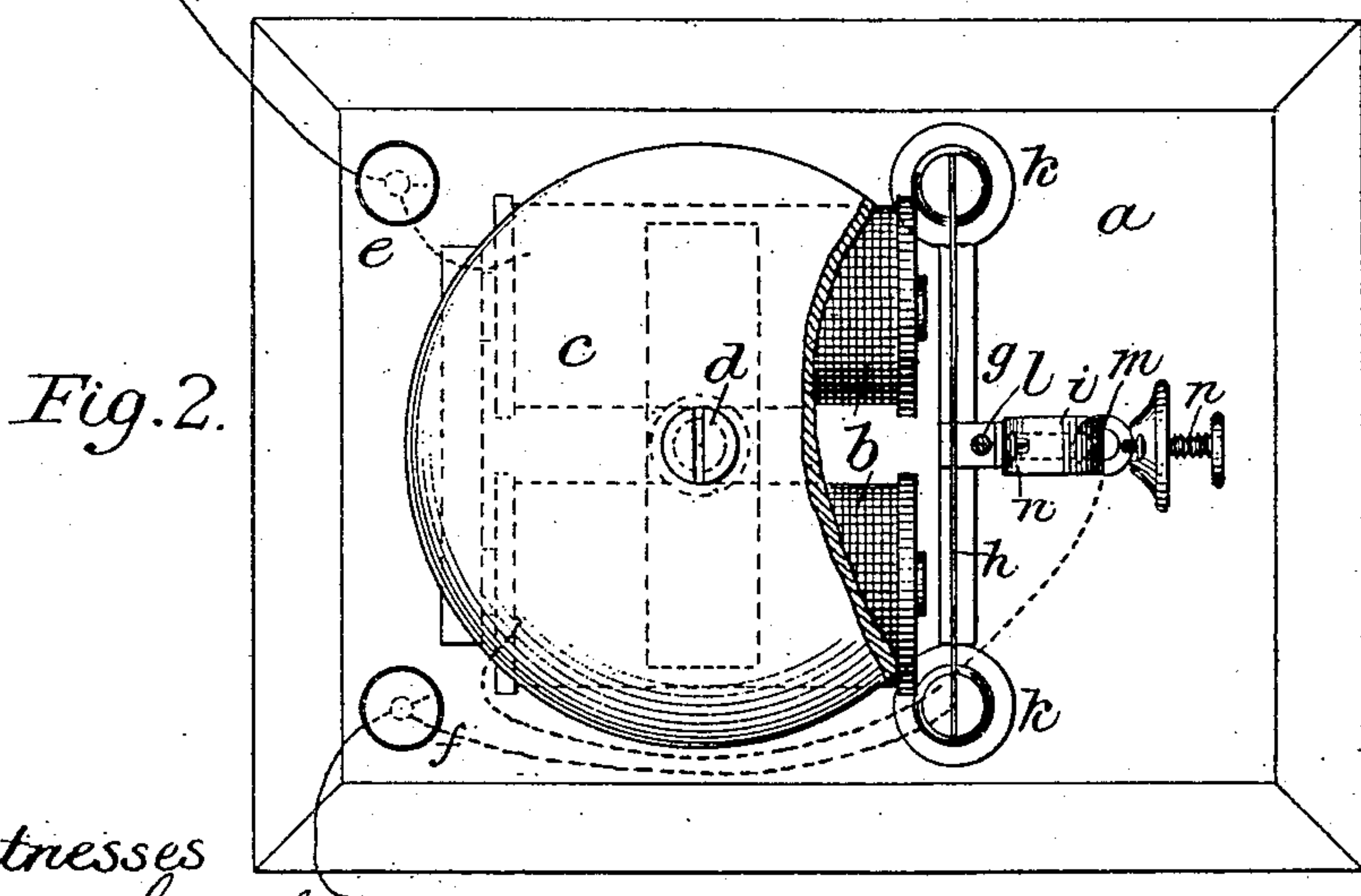
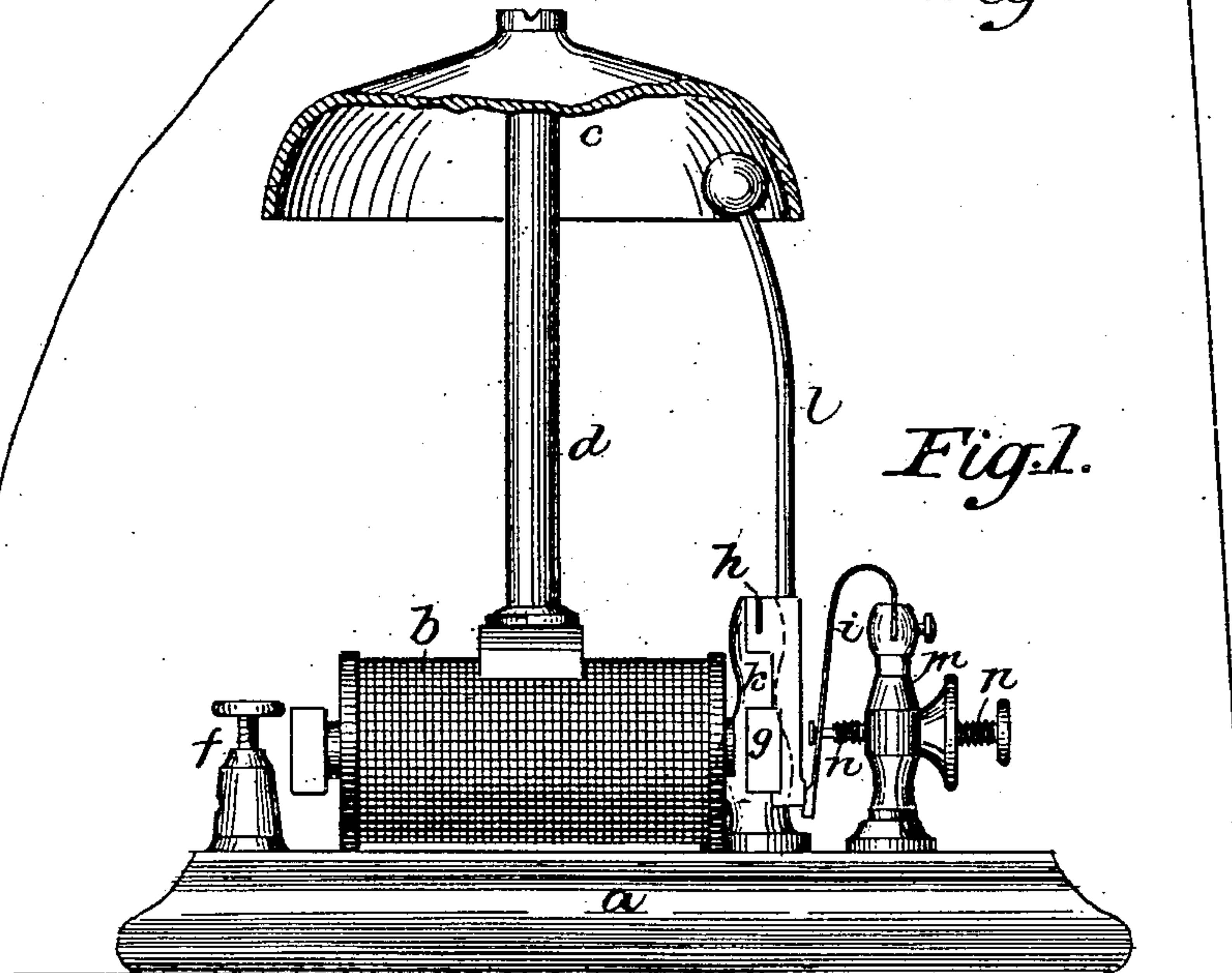
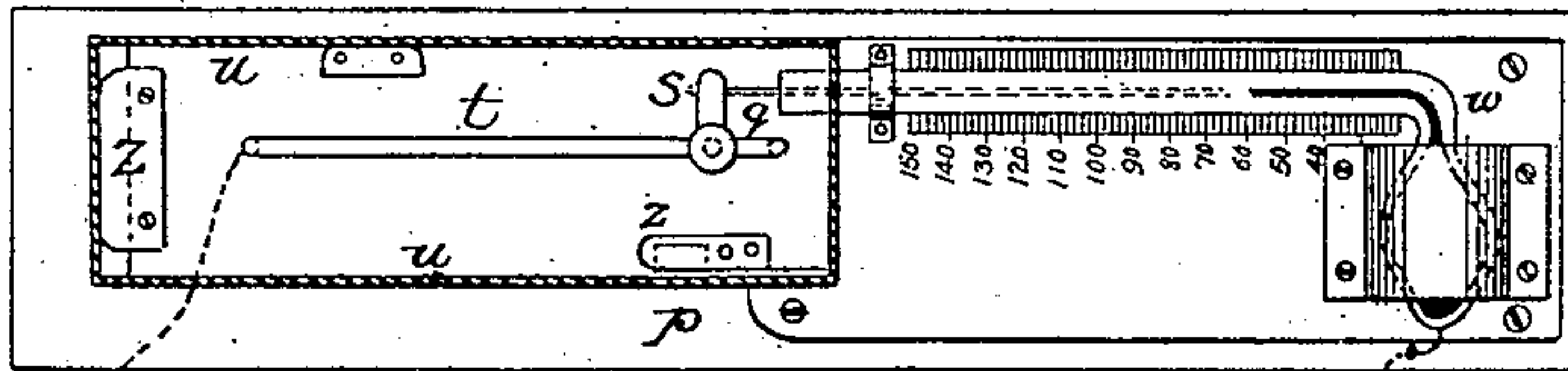
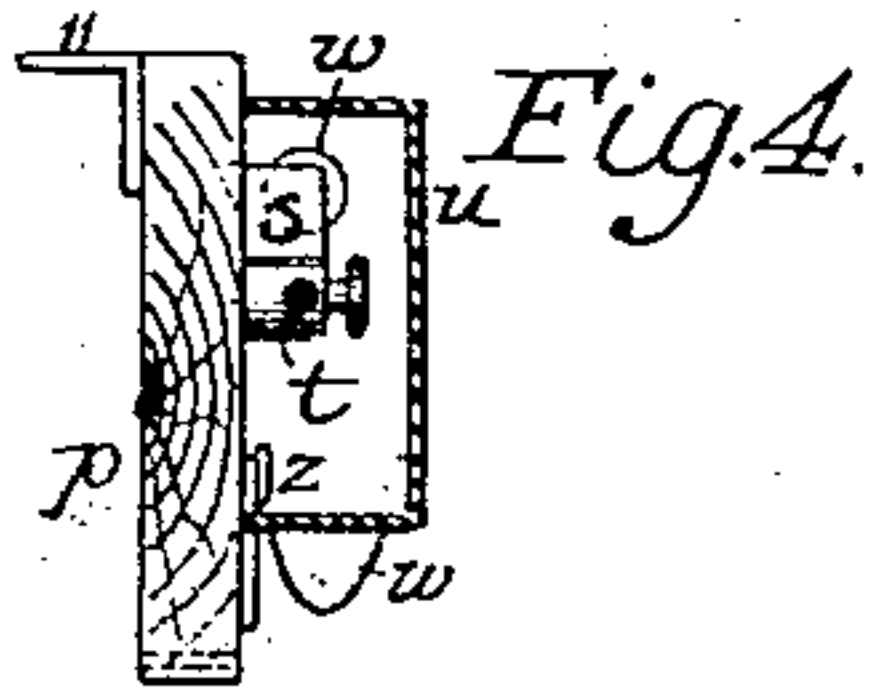


J. H. GUEST.  
ELECTROMAGNETIC TEMPERATURE ALARM.

No. 79,972.

Patented July 14, 1868.



Witnesses

Chas. H. Smith  
Geo. A. Walker

Inventor

John H. Guest  
per L. W. Snell, atty.



# UNITED STATES PATENT OFFICE.

JOHN H. GUEST, OF BROOKLYN, NEW YORK.

## IMPROVEMENT IN ELECTRO-MAGNETIC TEMPERATURE-ALARMS.

Specification forming part of Letters Patent No. 79,972, dated July 14, 1868.

*To all whom it may concern:*

Be it known that I, JOHN H. GUEST of Brooklyn, in the county of Kings and State of New York, have invented, made, and applied to use a certain new and useful Improvement in Magnetic Alarms for Fires, &c.; and I do hereby declare the following to be a full, clear, and exact description of the said invention, reference being had to the annexed drawings, making part of this specification, wherein—

Figure 1 is an elevation of said apparatus, the bell being partially in section and one of the standards for the armature removed. Fig. 2 is a plan of the magnetic alarm with the bell partially removed to show the parts beneath it. Fig. 3 is an elevation of the thermometer to operate the alarm by an increase of the temperature, and Fig. 4 is a cross-section of the same.

Similar marks of reference denote the same parts.

Heretofore the armatures of magnetic alarms have been hung on an axis and drawn back with a spring. The bearings taking the ends of said axis sometimes become gummed up with the lubricating material, causing considerable friction, and sometimes interfering with the electricity passing through the same when the circuit is closed as the armature recedes from the magnet.

The nature of my said invention consists in a spring-axis for suspending the armature, and also forming the fulcrum for the hammer to the bell, said spring-axis throwing the armature off from the electro-magnet when the circuit is broken. I combine with said armature and spring-axis an adjustable spring circuit-breaker that is very easily adjusted, according to the strength of the electrical current, so as to make and break the circuit with precision each motion of the armature. A thermometer is employed to close the electrical current and cause the alarm to be sounded in cases where the thermometer rises beyond the temperature at which the circuit-closer is placed.

In the drawings, *a* represents a stand for the magnetic alarm; *b b* are electro-magnets; *c* is a bell on a column, *d*; *e* and *f* are binding-screws for the electrical wires, all of any usual character.

*g* is the armature hung from the spring-axis *h*, that is fastened at its ends in the standards *k*. Said spring-axis *h* is formed of a flat spring

placed above and edgewise to the armature, so that the armature will be suspended in its position, but the spring will freely twist slightly, as the armature vibrates.

The rod *l*, extending up from the armature, has a hammer-head or clapper at the upper end to strike the inside of the bell when the magnetism draws the armature. It will thus be seen that the spring *h* becomes an axis for the armature and a fulcrum for the bell-hammer.

The circuit-breaker *i* is formed of a spring attached at its upper end to the standard *m* and adjusted by the screw *n*, the end of which is formed as a button, and the neck behind this button takes a slot or mortise through the spring *i*.

When the apparatus is in use the electricity passes along the wire *o*, thence from the binding-screw *f* to the standard *k*, spring-axis *h*, armature *g*, circuit-breaker *i*, standard *m*, through the helix of the magnet to the binding-screw *e*, thence to the battery, or to the apparatus that indicates the presence of undue heat, or to any other alarm.

The electro-magnet attracting the armature draws it from the circuit-breaker *i*, and as the magnetism ceases the spring-axis *h* throws the armature back, closing the circuit, and so on, the vibrations of the armature and hammer ringing the bell.

I make use of the thermometer *o*, that is formed as a bent tube attached to a wooden support, *p*, that hangs by angle irons *l l* from the ceiling near the center of the apartment, or is placed against the side wall or a timber, or in any place where a change of temperature would easily affect the thermometer. *q* is the circuit-closing wire entering the end of said tube, and attached to the arm *s*, that is adjustable upon the rod *t*, to which one wire from the battery is connected, either directly or after passing through the magnetic alarm, and the other wire of the circuit passes into the mercury-bulb of the thermometer. By this construction the thermometer can be placed close up to the ceiling, and therefore is most easily affected by changes of temperature, and the circuit-closer can be adjusted with great facility, so as to cause a signal by the mercury in the thermometer coming into contact with the said circuit-closer.

The circuit-closer *q*, arm *s*, and rod *t* are

protected by a case, *u*, that is slipped endwise upon spring-clasps 2 2, receiving the flanges that project inwardly from the edges of such case.

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

1. The spring-axis on which the armature swings, in combination with the hammer and bell, as and for the purposes set forth.

2. The spring circuit-breaker *i* and adjusting-screw *n*, provided with a head or button, in combination with the armature and spring-axis *h*, for the purposes and as set forth.

3. The alarm-thermometer, formed with the horizontal circuit-closer and its adjusting arm, in combination with the case inclosing the adjustable parts, as set forth.

In witness whereof I have hereunto set my signature the 4th day of February, A. D. 1868.

J. H. GUEST.

Witnesses:

GEO. D. WALKER,  
CHAS. H. SMITH.