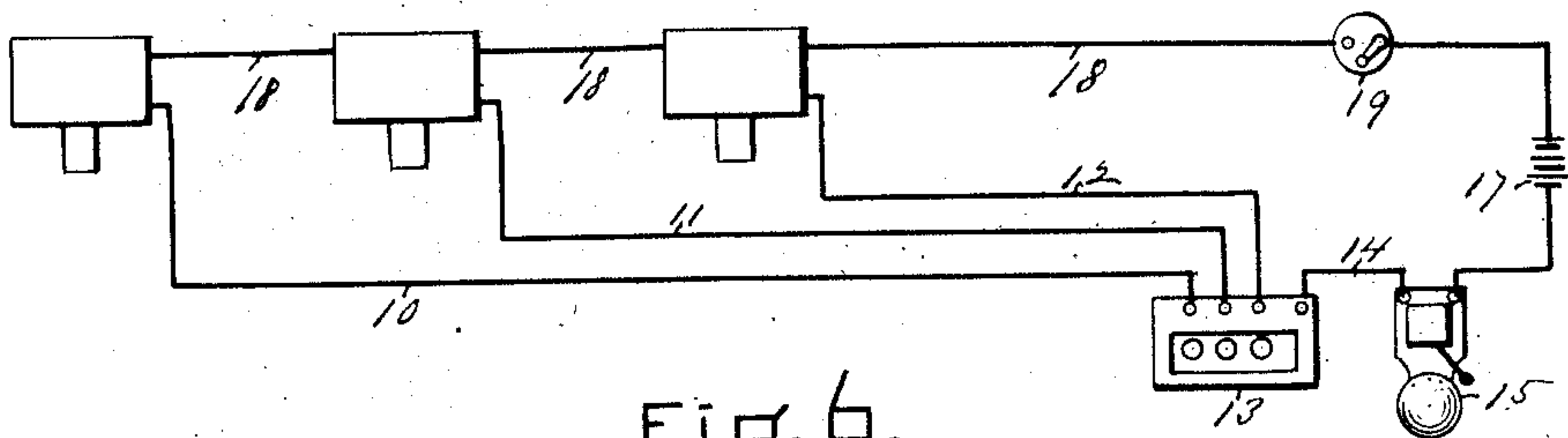
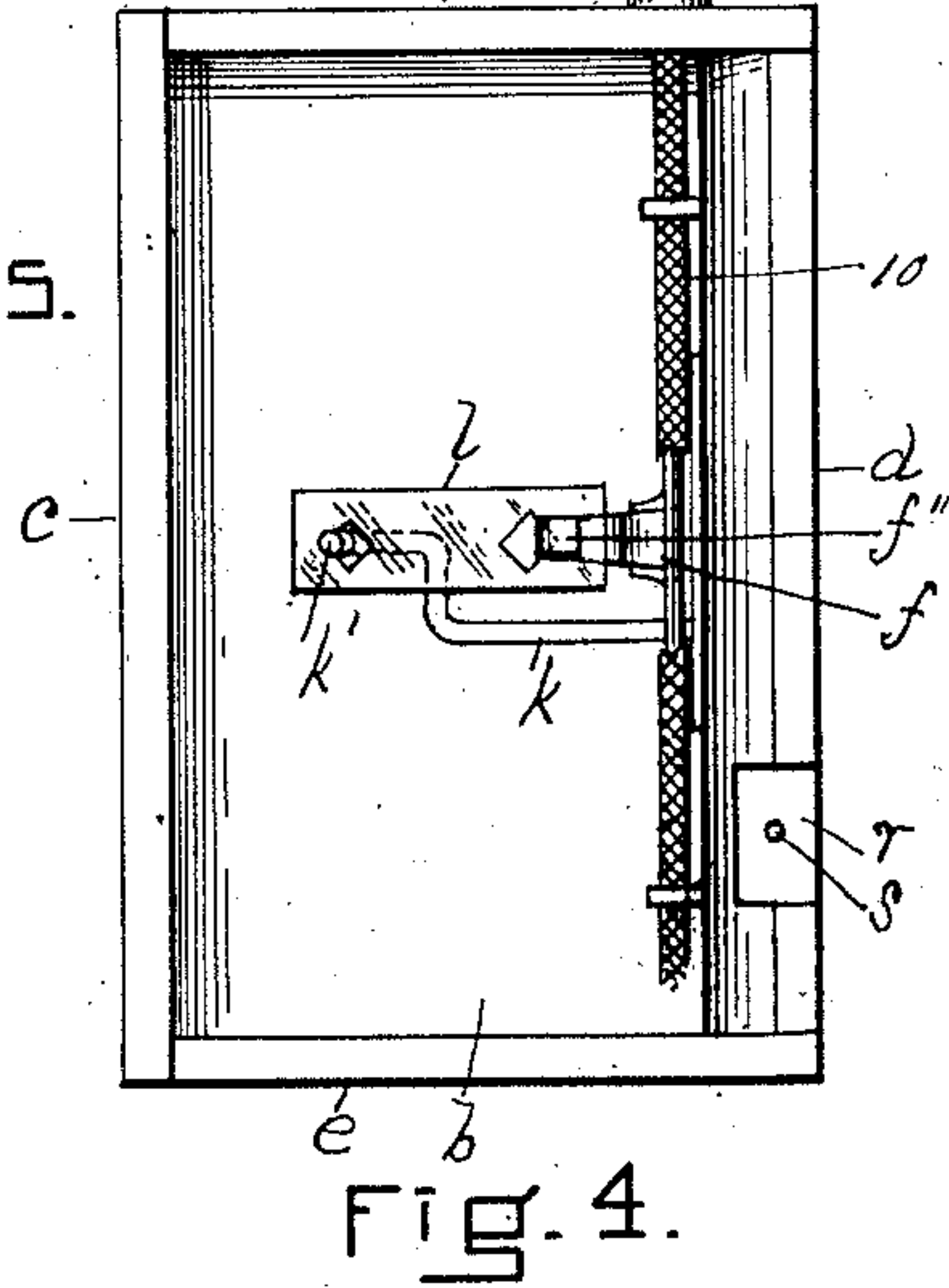
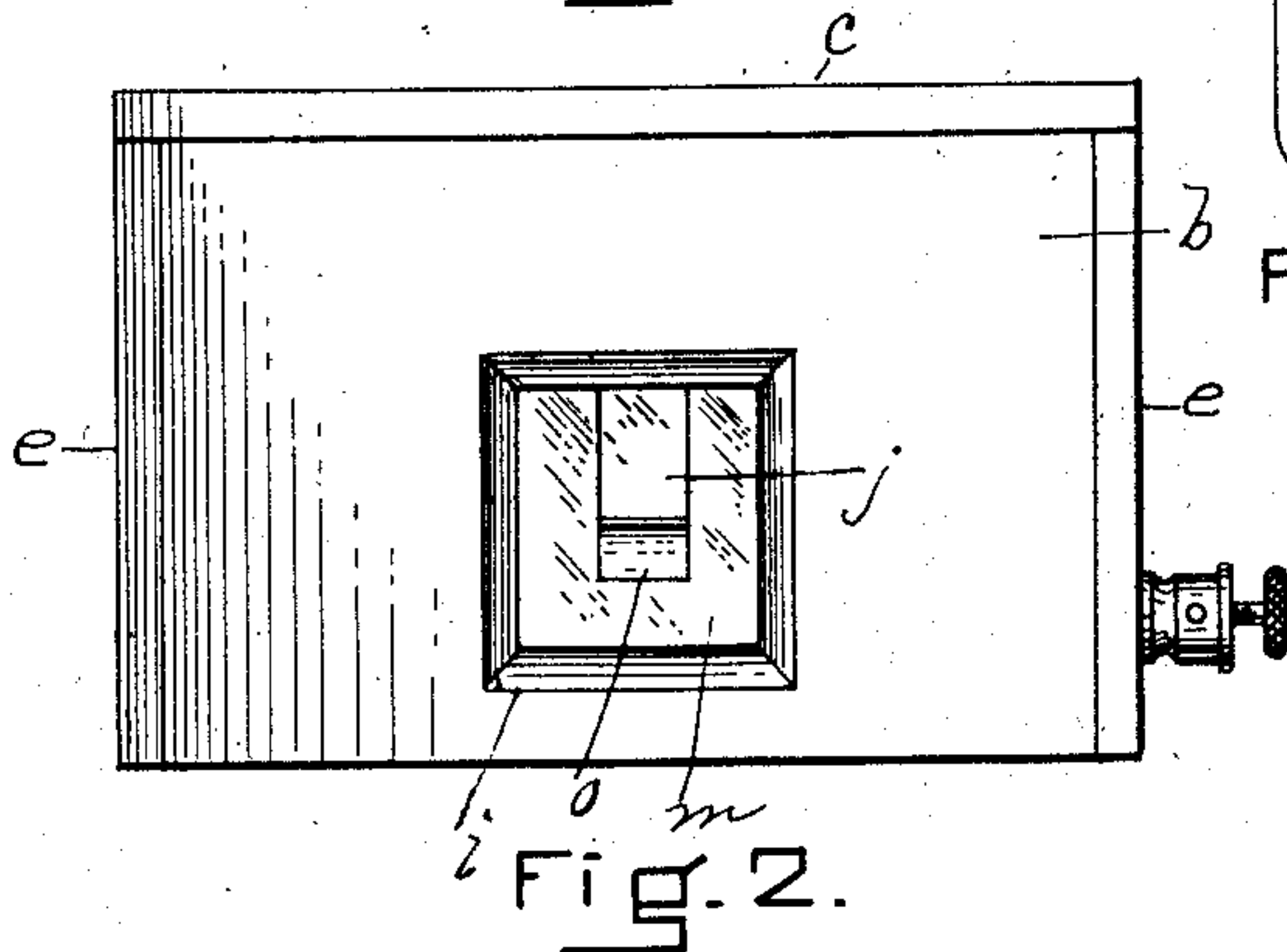
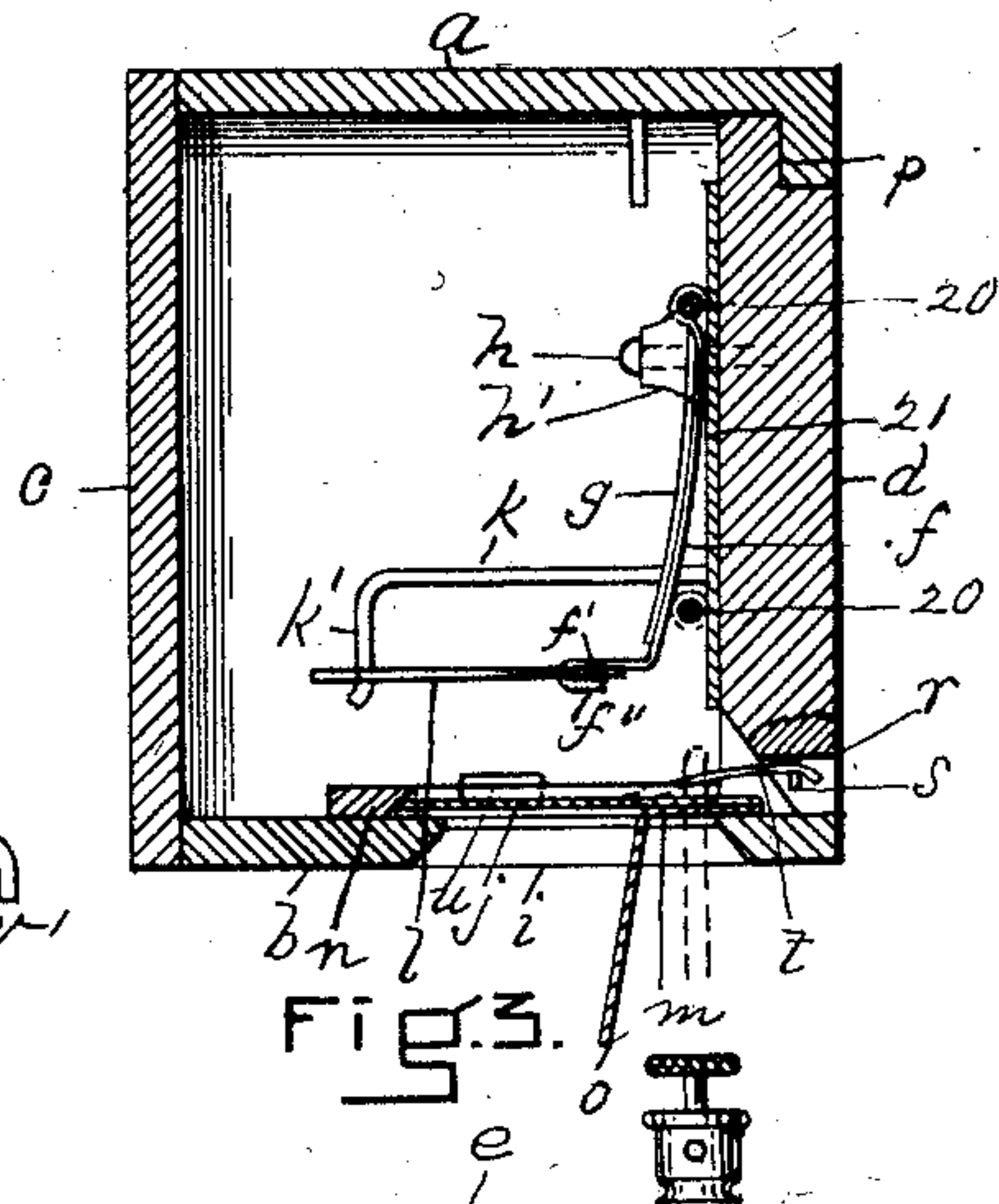
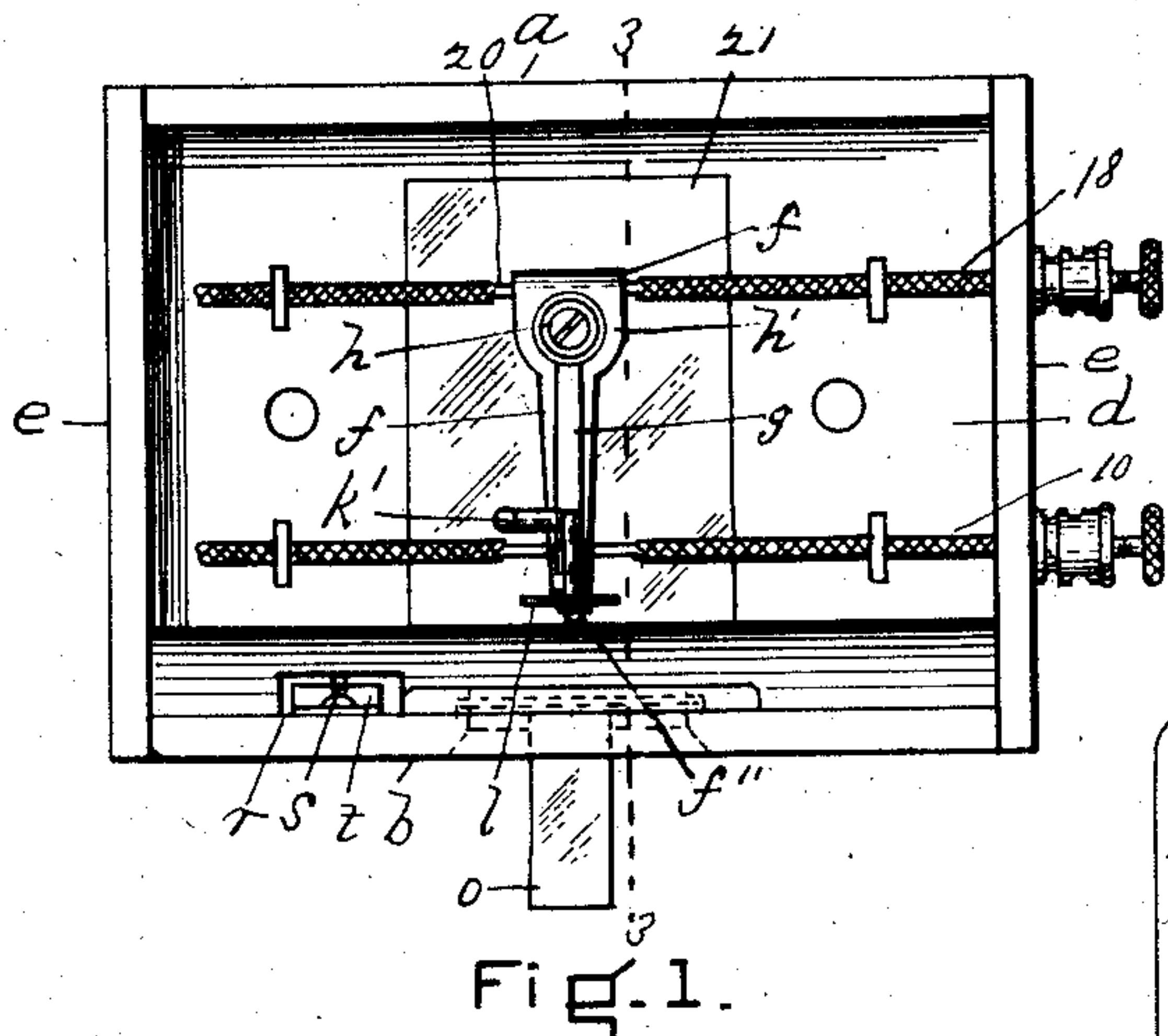


No. 814,123.

PATENTED MAR. 6, 1906.

N. H. FERLAND.  
AUTOMATIC FIRE ALARM.  
APPLICATION FILED JUNE 3, 1905.



WITNESSES.  
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# UNITED STATES PATENT OFFICE.

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OF ONE-THIRD TO JOSEPH A. CHOQUETTE, OF MANCHESTER, NEW  
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## AUTOMATIC FIRE-ALARM.

No. 814,123.

Specification of Letters Patent.

Patented March 6, 1906.

Application filed June 3, 1905. Serial No. 263,526.

*To all whom it may concern:*

Be it known that I, NAPOLEON H. FERLAND, a subject of the King of Great Britain, residing in Manchester, in the county of Hillsboro and State of New Hampshire, have invented certain new and useful Improvements in Automatic Fire-Alarms, of which the following is a specification.

In this invention a small box adapted to be secured to the wall or ceiling of a room is provided, said box being placed in an electrical circuit, the electric wires entering and passing through the box. A metallic spring extends from one wire to a point near the other wire, but is held out of contact with the last-named wire by means of a strip of celluloid which is located near a window in the case. This window is closed by means of two layers of celluloid, a portion of one of which extends out into the room. In case of fire when the flames reach the projecting piece of celluloid it is ignited, together with the layers constituting the window, and the flames connect with the strip of celluloid holding up the said spring, allowing it to drop upon the electric wire beneath and complete the circuit and sound the alarm. Means are provided for preventing access to the interior of the case without breaking in the window and for rendering the case dust-proof.

The nature of the invention is fully described in detail below and illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of my device with the front wall removed. Fig. 2 is an inverted plan of the same. Fig. 3 is a section taken on line 3 3, Fig. 1, looking toward the left. Fig. 4 is an inverted plan with the bottom removed. Fig. 5 is a view of the hook which is provided for breaking into the window and disengaging the spring for the purpose of gaining access to the interior. Fig. 6 is a diagrammatic view showing a series of my fire-alarms in circuit with an annunciator and gong.

Similar characters of reference indicate corresponding parts.

*a* represents the top, *b* the bottom, *c* the front wall, *d* the rear wall, and *e* the ends, of a case or box, one or more of which may be placed in a room or a series in different rooms and all of which may be connected by wires 10, 11, and 12 with an annunciator 13, which is connected by a wire 14 with a gong 15. A

wire 16 leads to the battery 17, which is connected by a wire 18 with the fire-alarm boxes, a suitable switch 19 being provided.

The wires 10 and 18 enter the case and are secured to the rear wall *d* in the manner indicated in Fig. 1, said wires being parallel and stripped of their insulation at 20, a sheet of insulating material 21 being preferably placed between the wires at their stripped portions and the rear wall of the case and extending from one wire to the other. A metallic arm *f* is bent around and secured to the stripped portion of the wire 18 and extends therefrom over the wire 10 and to a point somewhat beyond it and is bent upward near its free end at *f'* and thence downward into the hook *f''*. A spring *g* lies on the upper side of this arm and is held by its rear end under the washer *h'*, which is held down on said spring by the screw *h*, thus causing the spring to press normally downward the arm *f*. A rod *k* extends horizontally from the rear wall *d* and has its outer end *k'* bent downward, as shown. A strip of celluloid *l* is held in a horizontal position by and between the end *k'* of the rod *k* and the hooked end *f''* of the spring-arm *f*, holding the spring-arm raised and out of contact with the wire 10, suitable holes being provided in the celluloid strip for the purpose. This strip is held near and parallel with a window *i* in the bottom of the case, said window being closed by two sheets of celluloid *j* and *m*, held in position by suitable cleats *n*. The outer sheet *m* is cut to provide a tongue *o*, which is bent downward therefrom into the room.

In case of a fire when the flames reach the tongue *o* it is ignited and ignites the rest of the sheet *m* and the sheet *j* and then causes the strip *l* to take fire. The burning of the strip *l* releases the end of the spring-arm *f*, which instantly drops onto the wire 10, making an electrical connection between said wire and the wire 18, completing the circuit and operating the annunciator and alarm. The annunciator being connected to different fire-alarm boxes indicates in the ordinary manner which box is affected by the flames.

In order to prevent tampering with the box and yet render it accessible in case of necessity by breaking or pushing in the window, the rear wall *d* is removable, not being nailed or screwed to the rest of the box, but being held in position at its upper edge by rabbets



*p*, while its lower edge is notched at *r* and provided in said notch with a downwardly-extending pin *s*, Figs. 1, 3, and 4. A spring *t* is secured at its rear end at *u* to the bottom 5 *b*, and its free end extends normally up into engagement with the pin *s* by means of a suitable hole in the spring. In order to gain access to the interior of the box, a hook *v* is used to break or push in the window and to 10 draw down the spring by means of its end *v'*. Thus the rear wall can be swung out and removed from the case.

As the only portion of the box which is removable is the rear wall and as the window is 15 closed by the two sheets of celluloid, the box is practically dust-proof.

While I have selected celluloid as probably the best substance for my purpose to be applied to the window and to hold up the spring-arm *f* from the electric wire, I propose to use 20 any material or substance in the manner described and in the two places indicated which is sufficiently inflammable and which will in other respects operate exactly as well as the celluloid. In other words, it may be an 25 equivalent of the celluloid.

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

30 1. In an automatic fire-alarm of the character described, a closed box, wires entering said box adapted to constitute an electric circuit, a metallic arm in electrical contact with one of the wires and extending over the other 35 wire, a strip of inflammable material one end of which is secured to the metallic arm, means connected with the opposite end of the strip whereby the free end of said arm is held normally out of contact with the wire, and a win- 40 dows in said box near said strip comprising a sheet of inflammable material provided with a tongue which extends out therefrom into the apartment in which the box is placed, for the purpose set forth.

2. In an automatic fire-alarm of the char- 45 acter described, a closed box, wires entering said box adapted to constitute an electrical circuit, a metallic arm in electrical contact with one of the wires and extending over the other 50 wire, a strip of inflammable material one end of which is secured to the metallic arm, means connected with the opposite end of the strip whereby the free end of said arm is held nor- 55 mally out of contact with the wire, an opening in said box near said strip, a sheet of inflammable material in and closing said opening, and a second sheet of inflammable material in said opening provided with a tongue which extends out therefrom into the apart- 60 ment in which the box is placed, for the purpose set forth.

3. In an automatic fire-alarm of the character described, a closed box, wires entering said box adapted to constitute an electrical 65 circuit, a metallic arm in electrical contact with one of the wires and extending over the other wire, a strip of inflammable material one end of which is secured to the metallic arm, means connected with the opposite end 70 of the strip whereby the free end of said arm is held normally out of contact with the wire, a window in said box closed by a sheet of inflammable material, one of the walls of said box being notched at one of its edges, a pin 75 extending from said wall into the notch, and a spring extending from one of the other walls of the box into engagement with said pin, said spring being adapted to be reached by breaking the said window, for the purpose 80 set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

NAPOLEON H. FERLAND.

Witnesses:

J. A. BOIVIN,  
J. B. REZIMBAL.