

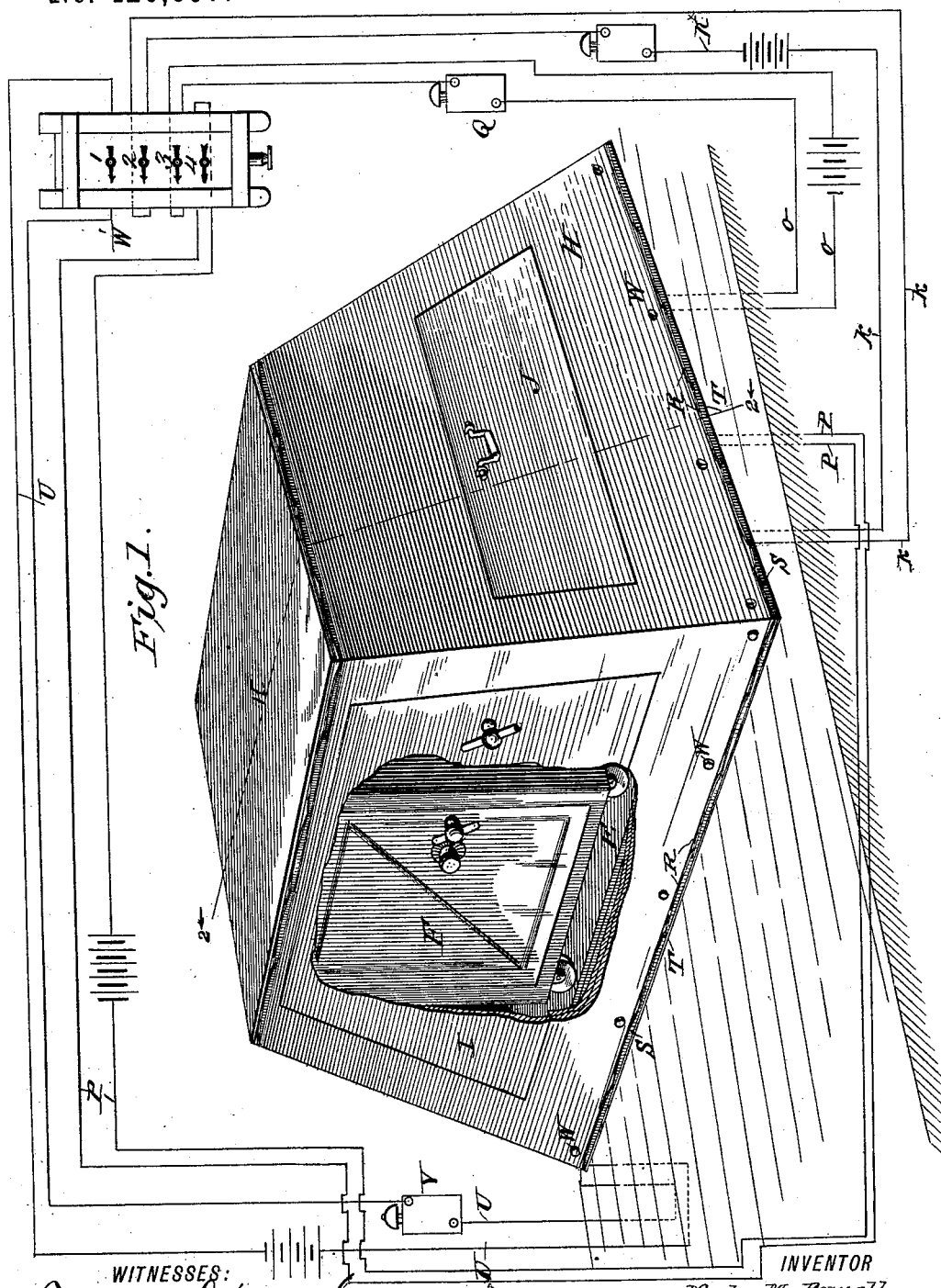
(No Model.)

4 Sheets—Sheet 1.

N. M. POWELL.  
BURGLAR ALARM.

No. 420,697.

Patented Feb. 4, 1890.



WITNESSES:

*Fred G. Dieterich*  
*Jos. A. Ryan*

INVENTOR

*Noah M. Powell*

BY

*Munn & Co*  
ATTORNEY

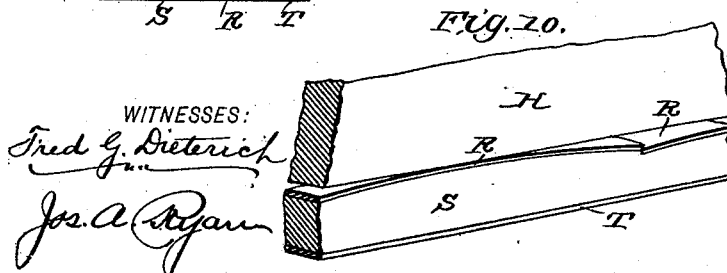
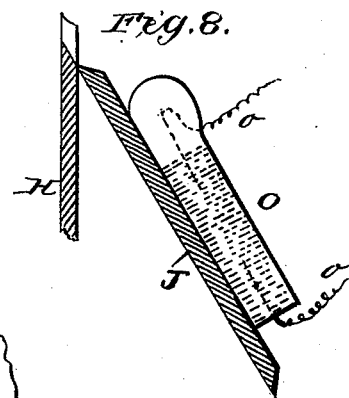
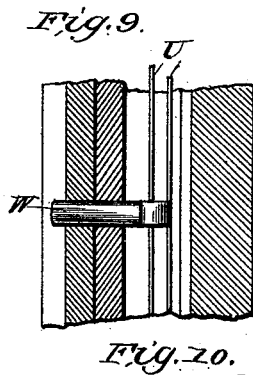
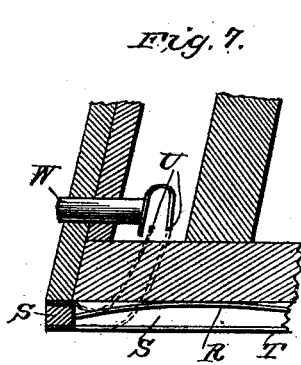
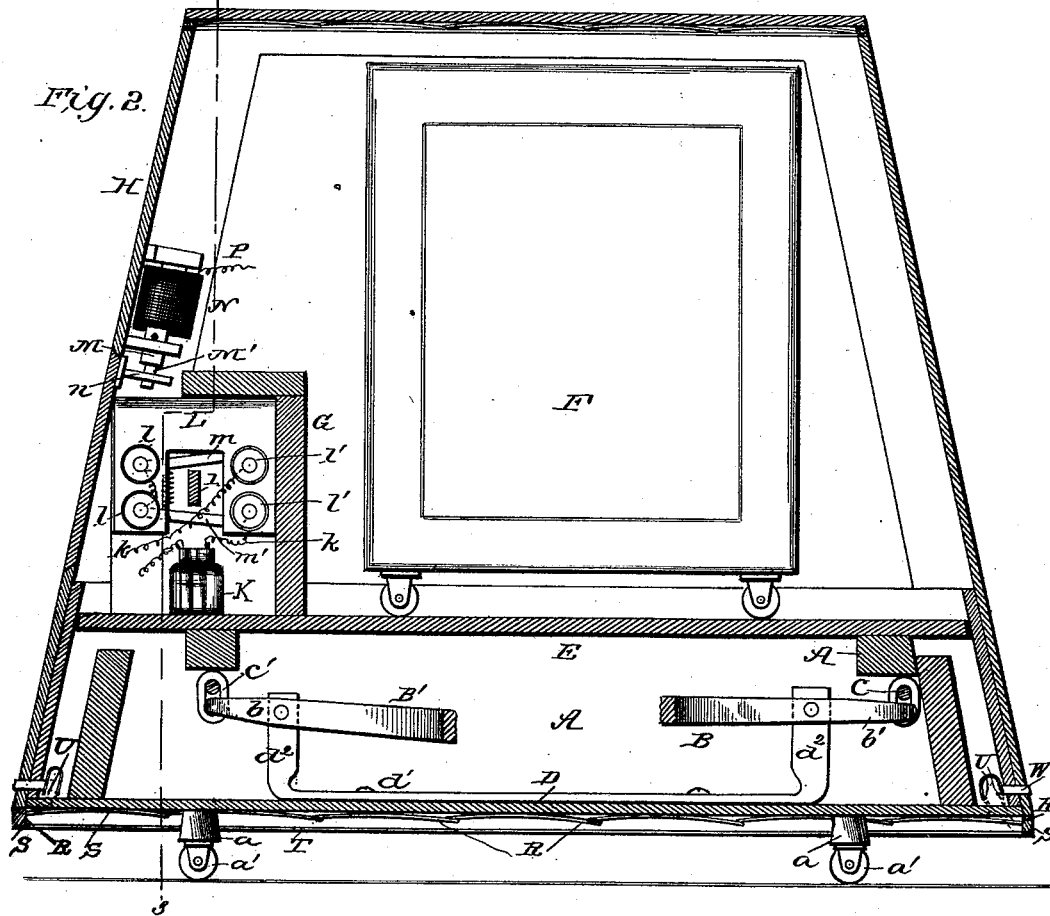
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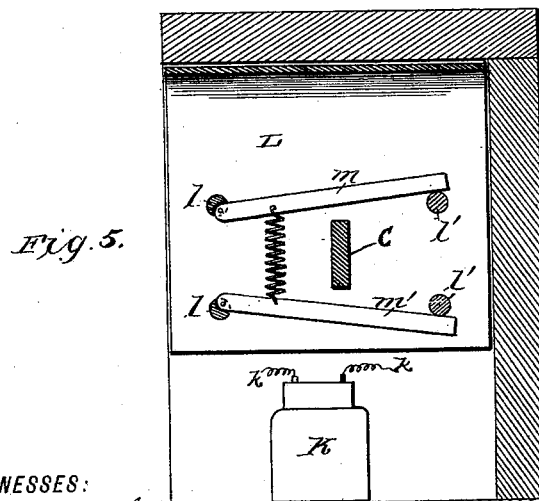
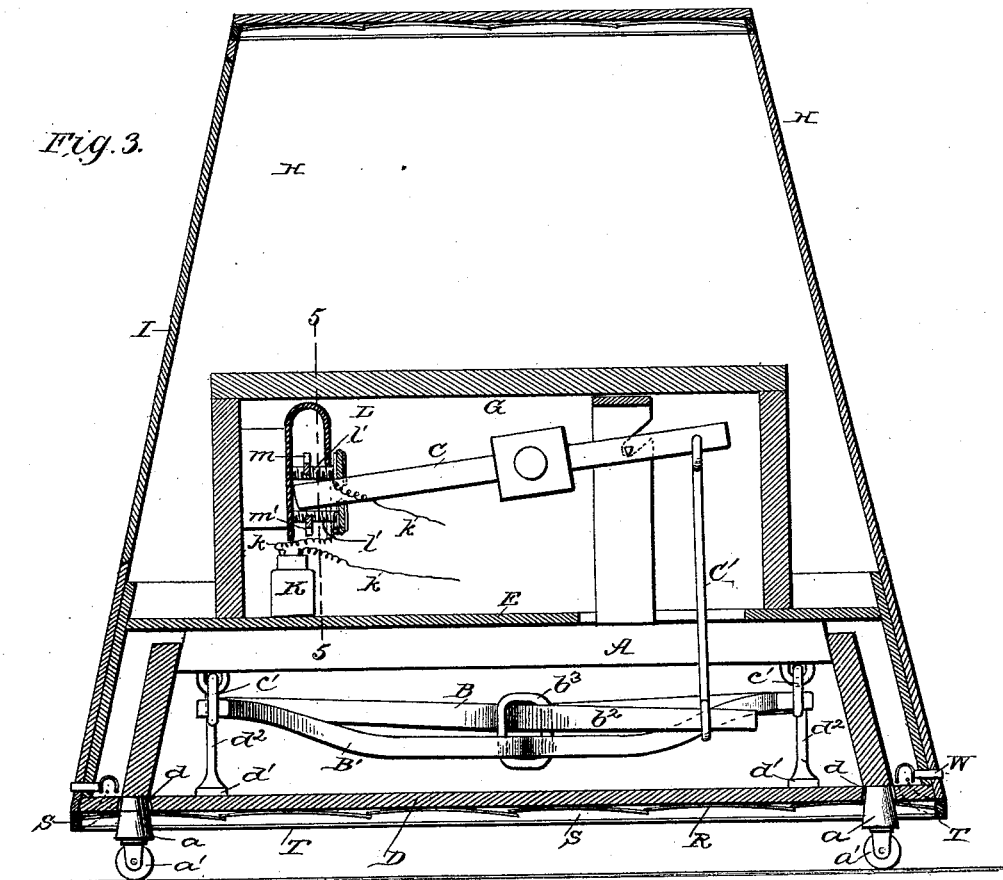
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4 Sheets—Sheet 4.

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Fig. 4.

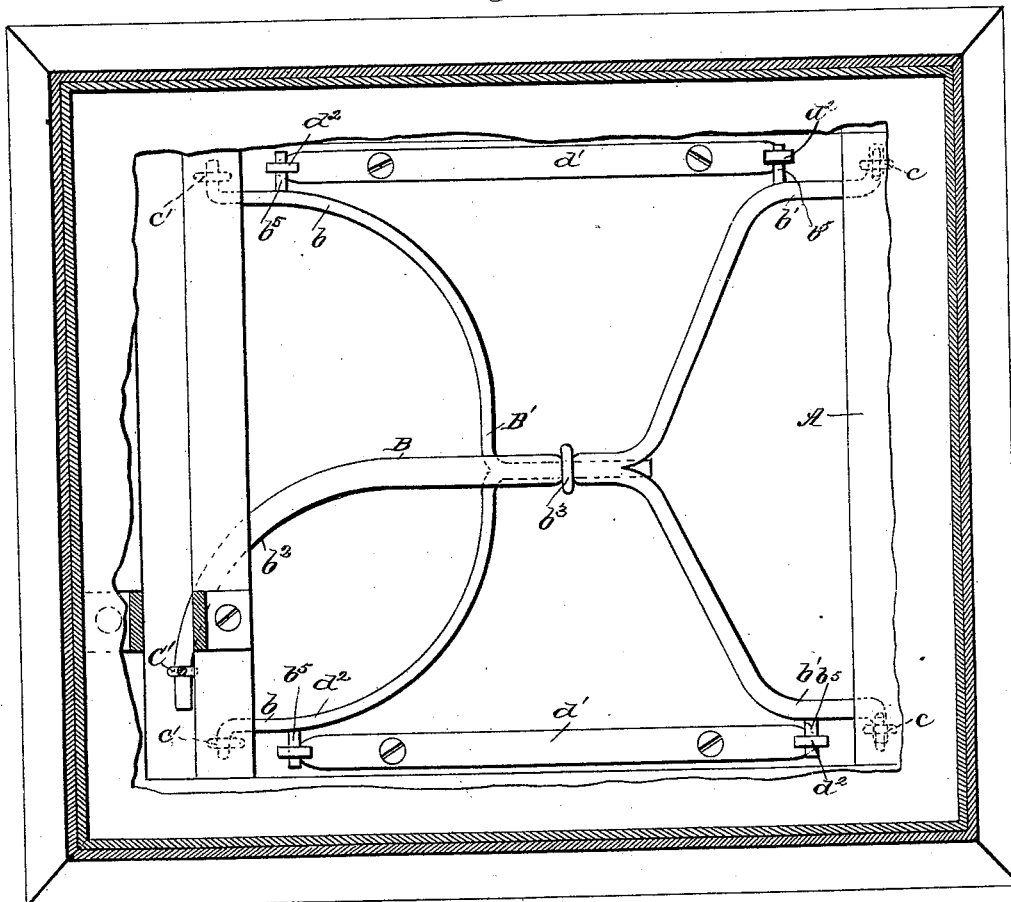
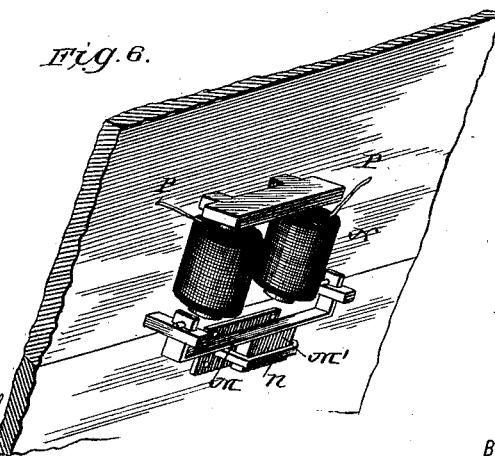


Fig. 6.



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# UNITED STATES PATENT OFFICE.

NOAH M. POWELL, OF REGER, MISSOURI.

## BURGLAR-ALARM.

SPECIFICATION forming part of Letters Patent No. 420,697, dated February 4, 1890.

Application filed August 17, 1889. Serial No. 321,167. (No model.)

*To all whom it may concern:*

Be it known that I, NOAH M. POWELL, residing at Reger, in the county of Sullivan and State of Missouri, have invented certain new and useful Improvements in Burglar-Alarms, of which the following is a specification.

My invention relates more particularly to providing a suitable apparatus to be used in connection with bank or office safes; and it has for its object to construct a suitable housing in connection with a platform-scale, said housing and platform being connected by means of suitable electric circuits with electric alarm-bells and indicators, so that any attempt or endeavor to reach the safe will cause said alarm-bells to ring, and also indicate in what manner the operator might be endeavoring to reach the safe.

To this end my invention consists in certain novel features of construction and peculiar combination of parts, all of which will hereinafter be fully described in the specification, and particularly pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my improvement. Fig. 2 is a central vertical section of the same on line 2 2, Fig. 1. Fig. 3 is a vertical section on the line 3 3, Fig. 2. Fig. 4 is a top plan view of the platform, partly broken away to more clearly illustrate some of the parts. Fig. 5 is a detail section on the line 5 5, Fig. 3; and Figs. 6, 7, 8, 9, and 10 are detail views hereinafter referred to.

In the accompanying drawings, A indicates a hollow platform or frame mounted upon suitable legs *a a*, provided with rollers *a' a'*, as shown. Inside of this frame are hung the scale bearing or balance bars B B', the inner ends *b' b'* of the bar B being hung in the bearings *c c*, suspended from the frame A, while the end *b<sup>2</sup>* of the bar is extended and its end hung to the lower end of the rod C', which is connected at its upper end to the scale-beam C, as clearly shown in Fig. 3 of the drawings. The inner ends of the bar B' are hung in bearings *c' c'*, suspended from the frame A, while the outer or free end of said bar is linked to the bar B, as shown at *b<sup>3</sup>*.

D denotes a platform formed of one-fourth-inch steel, which is cut about two inches

larger than the width and breadth of the platform A. This platform is suspended below the frame A, and is formed with four holes *d*, through which the legs *a a* pass. To this platform are secured bracket-irons *d'*, provided with upturned ends *d<sup>2</sup>*, which are hung on short pintles *b<sup>5</sup> b<sup>5</sup>*, projected laterally from the arms *b b* and *b' b'*, and by means of which the platform is suspended from the scale-balance bars.

E denotes a platform secured over the top of the hollow frame A, upon which is placed the safe F, as shown. At one side of the platform is arranged a frame or box about two feet high, six inches wide, and the length of the frame, in which the beam and balance-weights are located, and which I will term the "beam-box" G.

H denotes a casing or covering of pyramidal shape, made of one-eighth sheet-steel, which fits over the safe and platform A and rests upon the swinging platform D, the scale-beam being adjusted to balance the weight of said platform and cover.

The casing is provided with two doors I J, one of which I is a large door and opens to the front, so as to admit of ready access to the safe. This door is provided with a handle similar to a safe-handle, but no lock. The handle may, however, be provided with a spring-bolt, so that a person would have to turn down the same before the bolt would spring back. At the corner at which the large door hangs the arm *b* of the scale-bar B is made of a larger leverage, so that when the door I' is swung open the increased weight at this point on said arm will tilt the said bars, and thereby cause the scale-beam to swing down and operate an electric alarm in the following manner:

K denotes a battery, which may be located within the safe, the beam-box, or elsewhere, from which lead the circuit-wires *k k*, to one of which is connected a local alarm-bell circuit *k<sup>x</sup>*, which will operate on an opening of the circuit on the wires *k*. These wires are connected with a circuit-breaking device located within the beam-box, and which consists of an insulated U-shaped plate L, in which are adjusted the binding-screws *l l' l'*, said screws *l l* and *l' l'* being connected by

spring-arms  $m m'$ , one arranged above and in contact with the upper set of screws  $l l'$  and the other below the lower set of the screws  $l l'$ , and thereby normally carrying the current through the several screws. This device is located in one end of the beam-box in such a manner that the end of the scale-beam will play between the arms  $m m'$ , and when properly adjusted will be disposed centrally between said arms, but out of contact therewith. It will thus be seen that should the beam be caused to tilt up or down from any cause whatever it will operate to strike either of the arms  $m m'$ , and thereby move same from contact with the screws  $l l'$  and break the main circuit on wires  $k k$ , and thereby cause the local bell-circuit to ring the alarm.

The small door J is located on the side of the casing H, and is arranged so as to admit of access to the beam-box to permit adjusting the scale-beam. As it is necessary that said beam-box should be securely protected, I provide the door with an electric locking device, which can only be operated by the breaking or making of the current. Said locking device, which is most clearly illustrated in Fig. 6 of the drawings, consists of a sliding armature M, provided with a lug  $M'$ , adapted to engage a recess or socket  $n$  in the door, said armature operated by a magnet N, placed above the door inside the casing. In operation when it is desired to lock the door the current on the circuit-wires P P is broken, which allows the armature M to drop and lock the door. When it is desired to unlock, the circuit is closed, thereby raising the armature and unlocking the door. As an additional safeguard against opening said door J and to prevent a blow-pipe being used to melt the same, I provide the door upon its inner side with a thermostat O, to which are connected the circuit-wires  $o o$ , connected with a suitable battery. By this construction it will be seen that in case a blow-pipe is used upon the door the thermostat will operate to close the circuit on the wires  $o o$  and cause an alarm-bell Q on said circuit to ring. Should the door by any means be opened and turned down, the mercury in the thermostat would run down and close the contacts of the wires  $o o$  in the said thermostat, and cause the alarm-bell Q to ring during the entire time that the door may be swung down.

To prevent the casing being raised by means of a lever being inserted under the same, and also to prevent access to the inside of said casing by means of prying the top plate off the same, I provide the lower edge of said case, as also the meeting ends of the sides and top plate, with the following devices:

R denotes a series of leaf-springs arranged on the upper and lower edges of the casing, over which is placed a continuous strip of rubber S, and over said rubber is placed a metal strip T, as most clearly shown in Fig. 7. With the springs R and the metal strips T are connected wires U U of an electric cir-

cuit connected with a suitable battery and provided with an alarm-bell V.

W denotes a series of buttons secured in the lower edges of the casing, which are connected with switch-sections in the circuit-wires U U.

By the above construction it will be seen that by arranging the springs R, rubbers S, and metal plate T as described that in case any person should try to enter a wedge between the lower edge of the casing or floor the rubber would give and not allow the casing or shell to be wedged stationary, and in case any one should burn out the rubber the springs R would curl and come in contact with the metal strip T, and thereby close a circuit and ring the alarm. It will also be seen that in case a floor-vise is used to confine the shell or casing in its position the buttons would be forced in and an electric connection made with the circuit-wires U U, and thereby cause the bell V to ring.

W' indicates an indicator, which may be placed at any desired point to which the several circuit-wires are led, and which will indicate at what point attempt is being made to reach the safe.

In practice I prefer to place the indicator W' in the main or central office of the safe insurance companies. By this means no one can gain access to a safe without the company being cognizant of the fact.

It will be understood that any approved method of electric-circuit-wire systems may be used in connection with my improvements; or a main wire provided with suitable relays, having local alarm-circuits connected therewith, may be employed, it being understood that I do not wish to confine myself to any particular manner of arranging the electric circuits.

From the foregoing it will readily be seen that by balancing the case or shell and connecting the various portions thereof with electric alarm-bell, as described, that any attempt to lift or depress the same will cause the scale-beam to operate an alarm, and by attempting to open the doors or applying a floor-vise, &c., alarms will be rung, as well as causing the indicator at the central office to give notice of the operations.

By my invention, when same is properly set, no one can possibly gain access to the safe without causing the said fact to be made known.

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

1. The combination, with the frame adapted to support the safe, a scale-platform suspended therefrom, a housing placed over said safe and resting on said platform, and the scale-beam, of an alarm-bell in an electric circuit, a circuit-breaker formed in said circuit and disposed in connection with said scale-beam, said breaker adapted to be operated by the movement of the scale-beam, sub-

stantially as and for the purpose shown and described.

2. The combination, with the frame adapted to support the safe, the scale-frame suspended therefrom, said frame consisting of the bars B B', provided with outwardly - extending arms *b b b' b'*, said bars linked, as at *b<sup>2</sup>*, one of said arms *b* being of a longer leverage than the other, the scale-beam connected with the bar B, a scale-platform suspended from said bars, and a housing placed over the safe and resting on the scale-platform, said housing provided with a door I, of an alarm in an electric-circuit breaker arranged to be operated by the movement of the scale-beam, said beam adapted to be tilted down when said door I is swung open, substantially in the manner and for the purpose described.

3. The combination, with the safe-supporting frame, the scale-platform hung thereon, the scale-beam connected therewith and disposed above the supporting-frame, said beam adapted to engage a contact-maker in an electric circuit when vibrated, and an alarm in said electric circuit adapted to be operated by the movement of said beam, of a casing placed over said safe and resting on said platform, provided with a door arranged adjacent to the scale-beam, and a lock adapted to be operated by the making or breaking of an electric circuit independent of the scale-beam circuit, substantially as and for the purpose described.

4. The combination, with the casing or shell H, provided with a door J, and a locking device operated by the making or breaking of an electrical circuit, of a thermostat arranged upon the inner side of said door, said thermostat adapted to be operated when said door is swung open, substantially as and for the purpose described.

5. The combination, with the supporting-

frame, a scale-platform supported therefrom, the scale-beam connected therewith, said beam disposed to engage a contact-breaker in an electric circuit when vibrated, a housing or shell supported on said platform and over the safe, and an alarm-bell in said circuit, of push-buttons projected to the outside of said shell, said buttons adapted to control an electric circuit and operate an alarm-bell in said circuit when pressure is applied against them, substantially as and for the purpose described.

6. The combination, with the safe-supporting frame, the scale-bars hung therein, a scale-platform supported from said bars, a scale-beam connected with said bars, said beams disposed adjacent to an electric-circuit-contact maker or breaker, whereby the vibration of said beam will operate said circuit, and a shell or housing disposed over the safe and resting on the said scale-platform, of an alarm in said electric circuit and an indicator adapted to be operated by the swinging movement of the scale-beam, substantially as and for the purpose described.

7. The combination, with the safe-supporting frame, a housing or shell disposed over said safe and supported on said platform, the series of steel springs connected to the bottom of said shell, rubber cushions disposed over said springs, and metallic strips over said cushions, said springs and metallic strips connected with an electric circuit, of an alarm-bell in said circuit adapted to be operated by the removal of the rubber cushion between said springs and strip, substantially for the purpose and in the manner hereinbefore described.

NOAH M. POWELL.

Witnesses:

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W. F. CALFEE.