

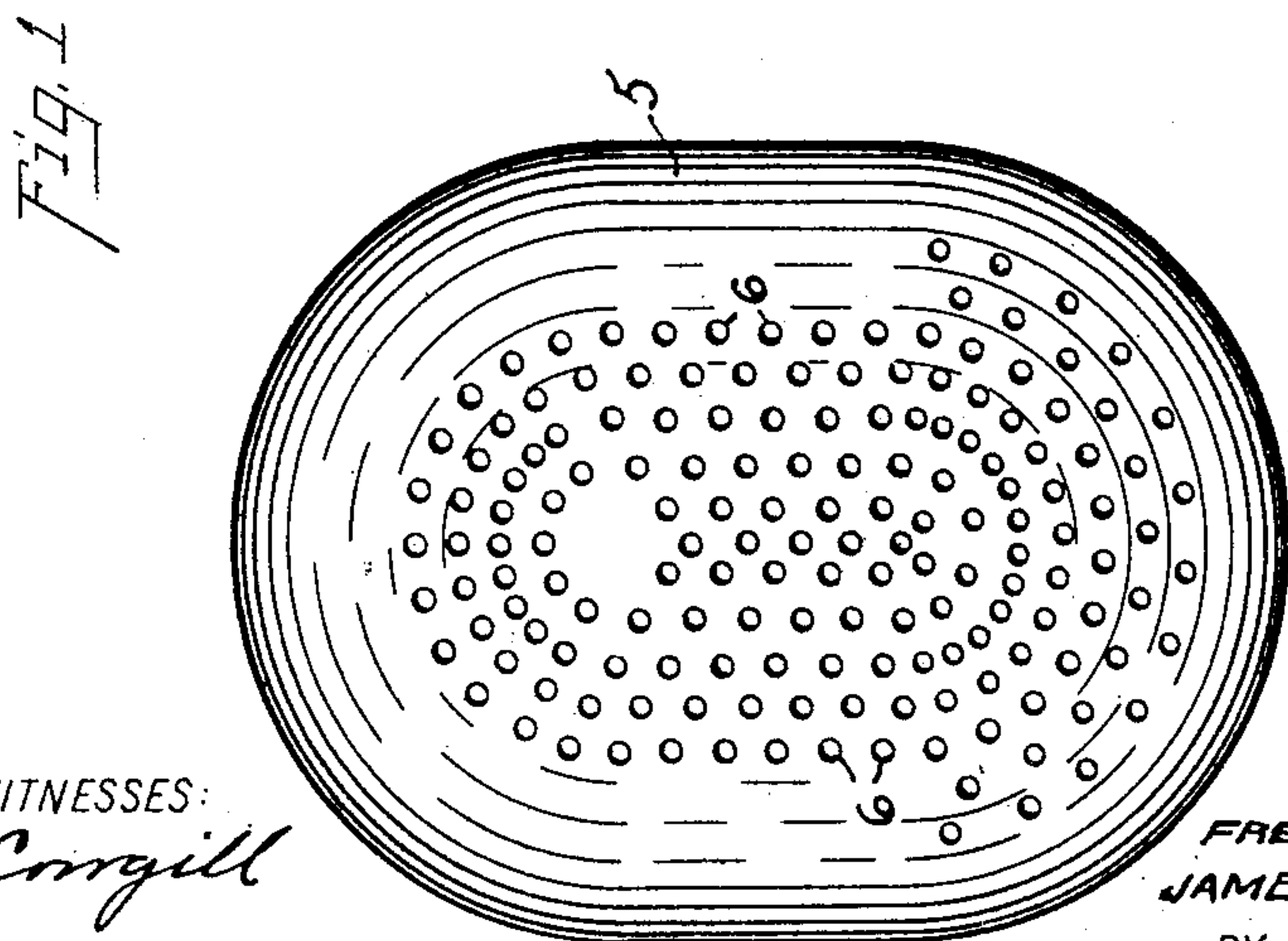
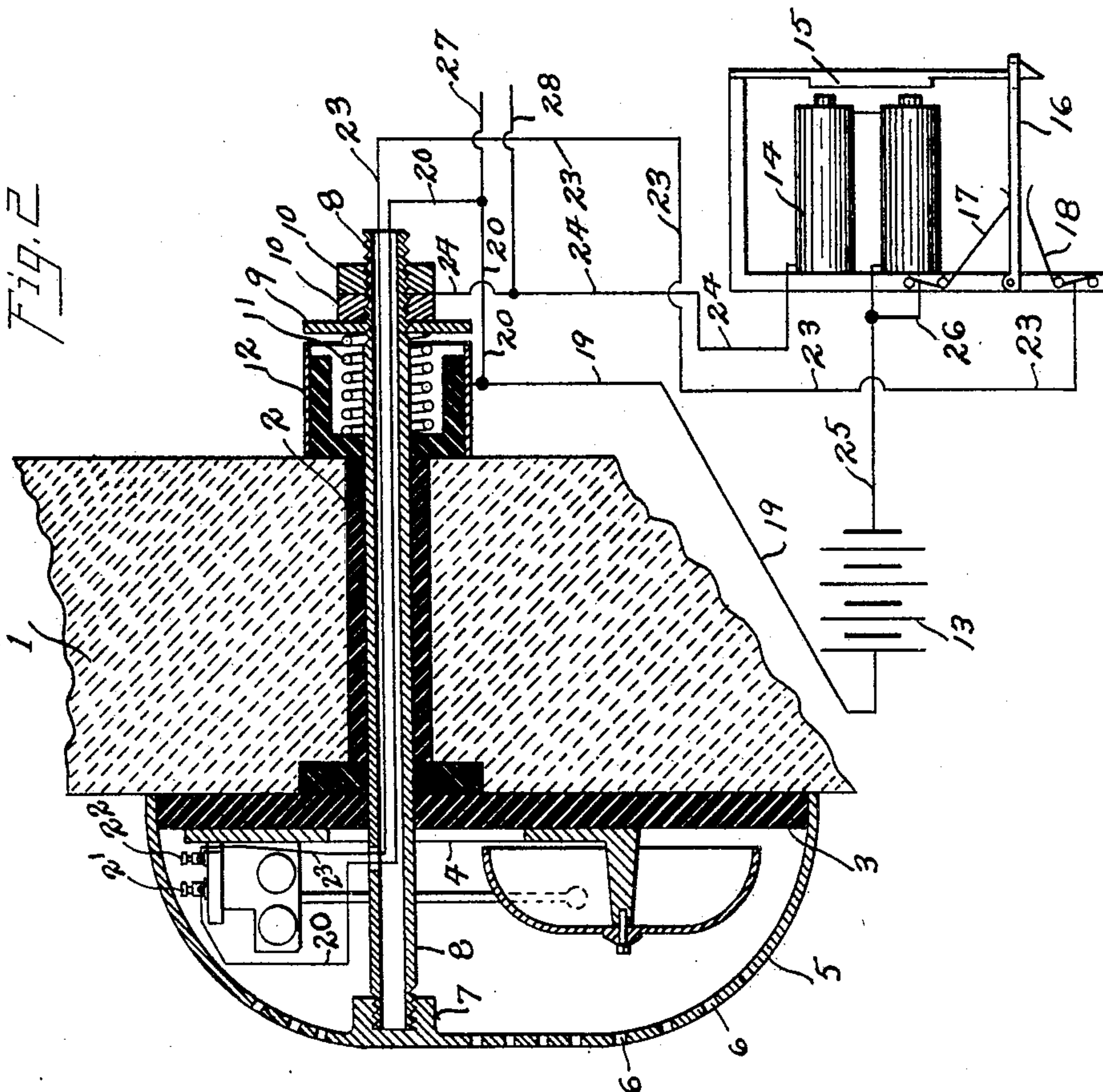
No. 708,496.

Patented Sept. 2, 1902.

F. C. ROBINSON & J. E. GREEN.
BURGLAR ALARM.

(Application filed Nov. 26, 1901.)

(No Model.)



WITNESSES:

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UNITED STATES PATENT OFFICE.

FREEMAN C. ROBINSON AND JAMES E. GREEN, OF COUNCIL BLUFFS, IOWA.

BURGLAR-ALARM.

SPECIFICATION forming part of Letters Patent No. 708,496, dated September 2, 1902.

Application filed November 26, 1901. Serial No. 83,711. (No model.)

To all whom it may concern:

Be it known that we, FREEMAN C. ROBINSON and JAMES E. GREEN, of Council Bluffs, in the county of Pottawattamie, State of Iowa, have invented certain Improvements in Burglar-Alarms, of which the following is a specification.

This invention relates to improvements in alarm-gongs for burglar-alarm systems; and the object we have in view is to provide an alarm-gong adapted for application to safes, vaults, and other receptacles or apartments designed for the storage of money or articles of value; and the special object of the present invention is to provide means whereby the alarm-gong may be placed outside of the safe, vault, or apartment and be protected from injury or interference therewith.

Our invention consists generally in an alarm-gong, an automatic circuit-closer or contact-drop in circuit therewith, and means for operating said automatic circuit-closer or contact-drop.

The invention consists, further, in an alarm-gong adapted to be placed upon the outside of a vault or safe and with a specially-constructed shield that is arranged over said alarm-gong and electrically connected, so that any attempt to remove said shield will cause the alarm to be sounded.

The invention consists, further, in the constructions and combinations hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a front elevation of the alarm-protecting shield. Fig. 2 is a sectional view of the mechanism, showing the shield and alarm and a portion of the vault-wall, with a diagram of the electrical connections.

In the drawings, 1 represents a section of the wall of a vault, safe, or other receptacle or apartment that is to be protected. This wall is provided with an opening extending through it and having therein an insulating bushing or sleeve 2. On the outer surface of the wall 1 is placed an insulating-plate 3, to which is secured a suitable electromagnetic alarm bell or gong 4. A suitable metallic shield 5, provided with a series of perforations 6, is arranged to cover and inclose the

said alarm bell or gong. This shield is provided with a lug 7 upon its inner surface, and a tube 8 is screwed into said lug. This tube extends through the insulating-sleeve 2, its inner end being screw-threaded and provided with a metallic plate or washer 9 and the nuts 10 10. The inner end of the insulating-sleeve is preferably made of cup form surrounded by a collar or sleeve 12, and a spring 11 is arranged between the washer 9 and the sleeve surrounding the tube 8. This spring tends to force the tube 8 inward, thereby holding the shield 5 closely against the outer surface of the wall 1 and preferably surrounding the insulating-plate 3. The shield 5 is eccentrically placed in reference to the tube 8, so that it is impossible to remove said shield by unscrewing it from the tube 8. By means of the nuts 10 the collar 9 may be adjusted so as to be very close to the sleeve 12, so that a very slight movement of the shield or the tube 8 will make an electrical connection between the collar 9 and the sleeve 12.

A suitable battery 13 is located at any suitable point, preferably within the vault, and an electromagnetic contact-drop or automatic circuit-closer 14 is also preferably arranged within the vault. The automatic circuit-closer consists, preferably, of suitable electromagnets, with an armature 15, having a hook upon its lower end. A pivoted bar 16 is arranged to be engaged and held up by this hook on the armature. A contact-spring 18 is arranged below the pivoted bar 16, and a spring 17 bears upon the upper surface of said bar. When the armature 15 is drawn toward the magnet, the spring 17 will press the pivoted bar 16 down upon the spring 18, thereby making electrical connection between the springs 17 and 18 through the pivoted bar 16. Suitable electrical connections are made between the mechanism described, as follows: From one pole of the battery a conductor 19 extends to the sleeve 12, and extending from the same pole of the battery or branching from the conductor 19 is a conductor 20, that passes through the tube 8 and is connected to binding-post 21 on the alarm-gong 4. It is customary with bells of this class to have one of the binding-posts in electrical connection with the framework of the bell, while the other binding-post is insulated

therefrom. It is to the uninsulated post that the conductor 20 is connected, for a purpose hereinafter stated. From the other or insulated post 22 on the bell-frame a conductor 23 extends through the tube 8 and thence to the spring 18 of the automatic circuit-closer. A conductor 24 is electrically connected to the tube 8 and to the magnets of the automatic circuit-closer 14. From these magnets a conductor 25 extends to one pole of the battery, and a branch therefrom is connected to the spring 17 and through the spring 17 is connected to the pivoted arm 16. Branching from the conductor 20 or, if preferred, connected to the same pole of the battery with the conductor 19 is the conductor 27, and branching from the conductor 24 is a conductor 28. The conductors 27 and 28 extend to any suitable circuit-closing devices arranged to be operated when an attempt is made to open the safe or vault or apartment to which the device is applied. We prefer to employ in this connection circuit-closing devices arranged upon the draw-bolts of the vault or safe door, substantially as shown and described in our application for patent of even date herewith.

The operation of the mechanism will be readily understood from the foregoing detailed description. A circuit may be closed through the automatic circuit-closer in any one of three ways: first, by any suitable circuit-closing devices placed between conductors 27 and 28—such, for instance, as a circuit-closing device arranged upon the vault or safe door and adapted to be closed by the opening of said door or the withdrawal of the bolts on the door; second, by any outward movement of the shield and tube 8, thus bringing the washer 9 into contact with the sleeve or collar 12; third, by any metallic instrument inserted through an opening in the shield 5 and brought in contact with the metallic gong-frame. When a circuit is closed through the automatic circuit-closer 14, the armature 15 will be moved so as to release the pivoted bar 16, and this bar will be brought in contact with the spring 18. A circuit will now be closed through the alarm-gong, and said gong will continue to ring until the battery is exhausted or the bar 16 is raised and engaged by the armature and the circuit through the gong is broken.

It will be apparent that many modifications in the detailed construction may be made without departing from our invention.

We claim as our invention—

1. The combination, in a burglar-alarm, with a suitable gong located outside of the vault, safe or other receptacle or apartment to be protected, of a shield inclosing said gong and means for closing an electric circuit that causes said gong to be sounded upon the moving of said shield, substantially as described.

2. The combination, in a burglar-alarm, with a suitable gong, of a shield inclosing said

gong, a tube supporting said shield and means connected with said tube for closing an electric circuit upon the moving of said shield, substantially as described.

3. The combination, with the wall of the vault, safe or other receptacle, of an alarm-gong located on the outside thereof, a shield inclosing said gong, a tube supporting said shield and extending through said wall and means connected with said tube for closing an electric circuit upon the movement of said shield and tube, substantially as described.

4. The combination, with the wall of a vault, safe or other receptacle, of a gong located on the outside thereof, a shield inclosing said gong, a tube extending through said wall and supporting said shield and means arranged upon the outside of the wall and in connection with said tube for closing an electric circuit upon the movement of said gong and tube, substantially as described.

5. The combination, with the wall of a vault, safe or other receptacle, of a suitable gong located on the outside of said wall, a shield inclosing said gong, a support for said shield extending through said wall, and means connected with said support inside of said wall for closing an electric circuit upon the movement of said shield, substantially as described.

6. The combination, with the wall of a vault, safe or other receptacle, of a gong located upon the outside thereof, a shield inclosing said gong, a tube supporting said shield and extending through said wall and forming a conduit for the conductors by which said gong is operated, a spring engaging said tube and tending to draw said shield against said wall, a washer arranged upon said tube and engaged by said spring and a collar surrounding said tube and insulated therefrom, a suitable battery and electrical connections to said collar and said sleeve, substantially as described.

7. The combination, in a burglar-alarm, with a suitable gong located outside of the vault, safe or other receptacle or apartment to be protected, of a shield inclosing said gong, an electric circuit in which said gong is located and means for causing said gong to be operated through said circuit upon the moving of said shield, substantially as described.

8. The combination, with the wall of a vault, safe or other receptacle, of a suitable gong or alarm located on the outside of said wall, an electric circuit in which said gong is located, a shield inclosing said gong and means for closing said electric circuit, and thereby operating the said gong or alarm, upon the moving of said shield, substantially as described.

9. The combination, with the wall of a vault, safe or other receptacle, of a suitable gong or alarm located on the outside of said wall, a perforated metallic shield inclosing said gong or alarm, the base of said alarm or gong and said shield being arranged in an electric cir-

cuit adapted to be closed when an electrical connection is made between said shield and the base or frame of said alarm.

10. The combination, with a vault, safe or other receptacle of a suitable gong or alarm located outside of said receptacle, a shield inclosing said gong and means located within said vault, safe or receptacle for operating said gong upon the moving of said shield.

11. The combination, with a vault, safe or other receptacle, of a suitable gong or alarm located on the outside of said wall, with the base or frame of said gong or alarm arranged in an electric circuit, a perforated metallic shield inclosing said gong or alarm, said shield being arranged in the same circuit with the base or frame of said alarm or gong, and said shield and said base being insulated from each other, whereby upon the insertion of a metallic instrument through one of the perforations of said shield into contact with said base or frame, the alarm or gong will be sounded, substantially as described.

12. The combination, with the wall of a vault, safe or other receptacle of an alarm located on the outside thereof and electrically

connected through said wall with a circuit-closer arranged within said vault, safe or receptacle, a shield arranged on the outside of said wall and inclosing said gong or alarm and electrical connections between said shield and said circuit-closer for the purpose set forth.

13. The combination, with the wall of a vault, safe or other receptacle, of a gong located on the outside thereof, an automatic circuit-closer arranged within said wall and adapted to close the circuit operating said gong, a shield arranged on the outside of said wall and inclosing said gong, and an electric circuit connected with said shield and also connected with and adapted to operate said automatic circuit-closer, substantially as described.

In witness whereof we have hereunto set our hands this 9th day of November, 1901.

FREEMAN C. ROBINSON.
JAMES E. GREEN.

In presence of—

I. V. FLICKINGER,
PAINTER KNOX.