(No Model.)

2 Sheets—Sheet 1.

C. H. SPARKS.

ELECTRIC JAIL.

No. 502,325. Patented Aug. 1, 1893.

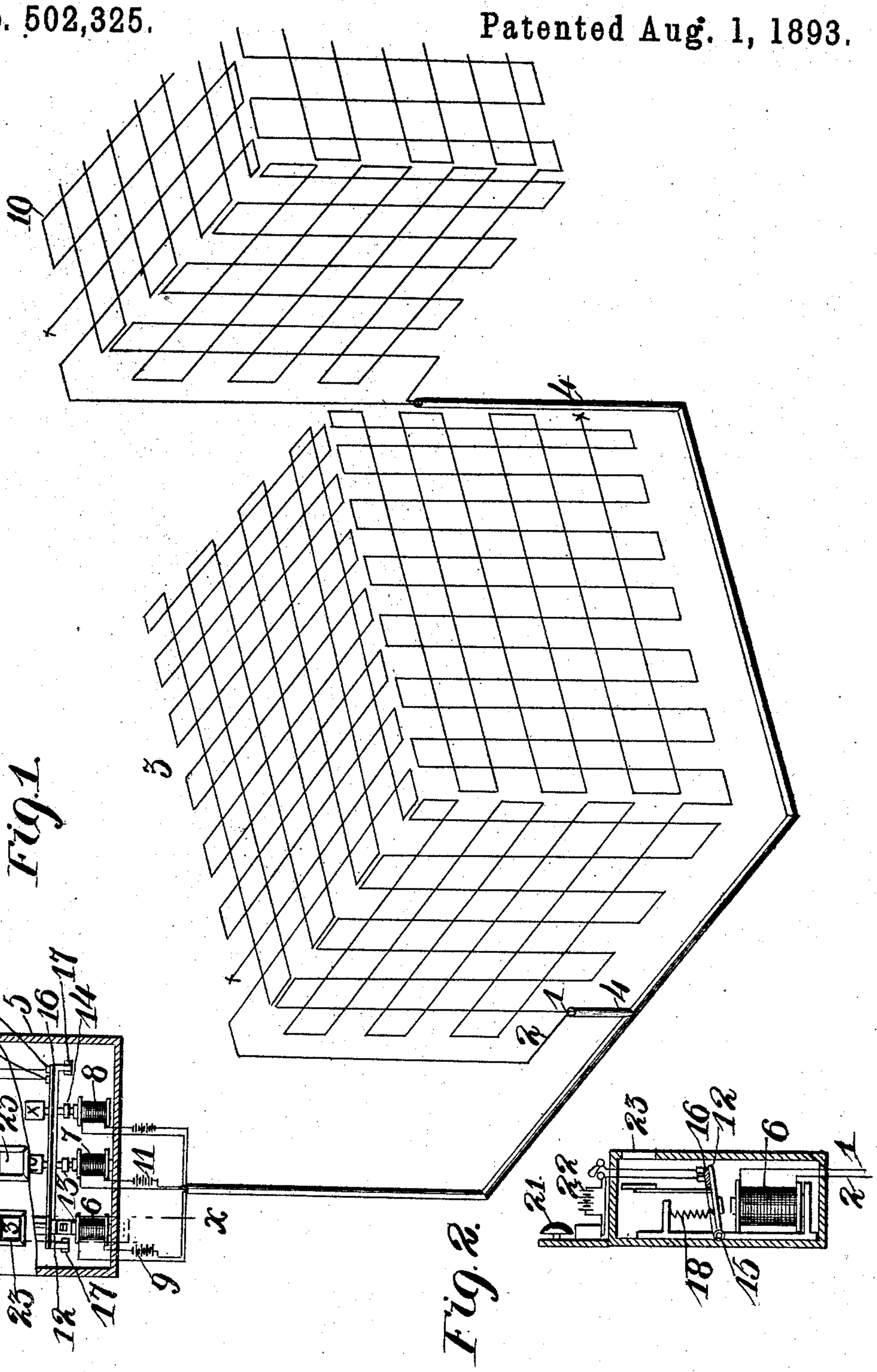

Fig. 1.

Fig. 2.

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(No Model.) 2 Sheets—Sheet 2.

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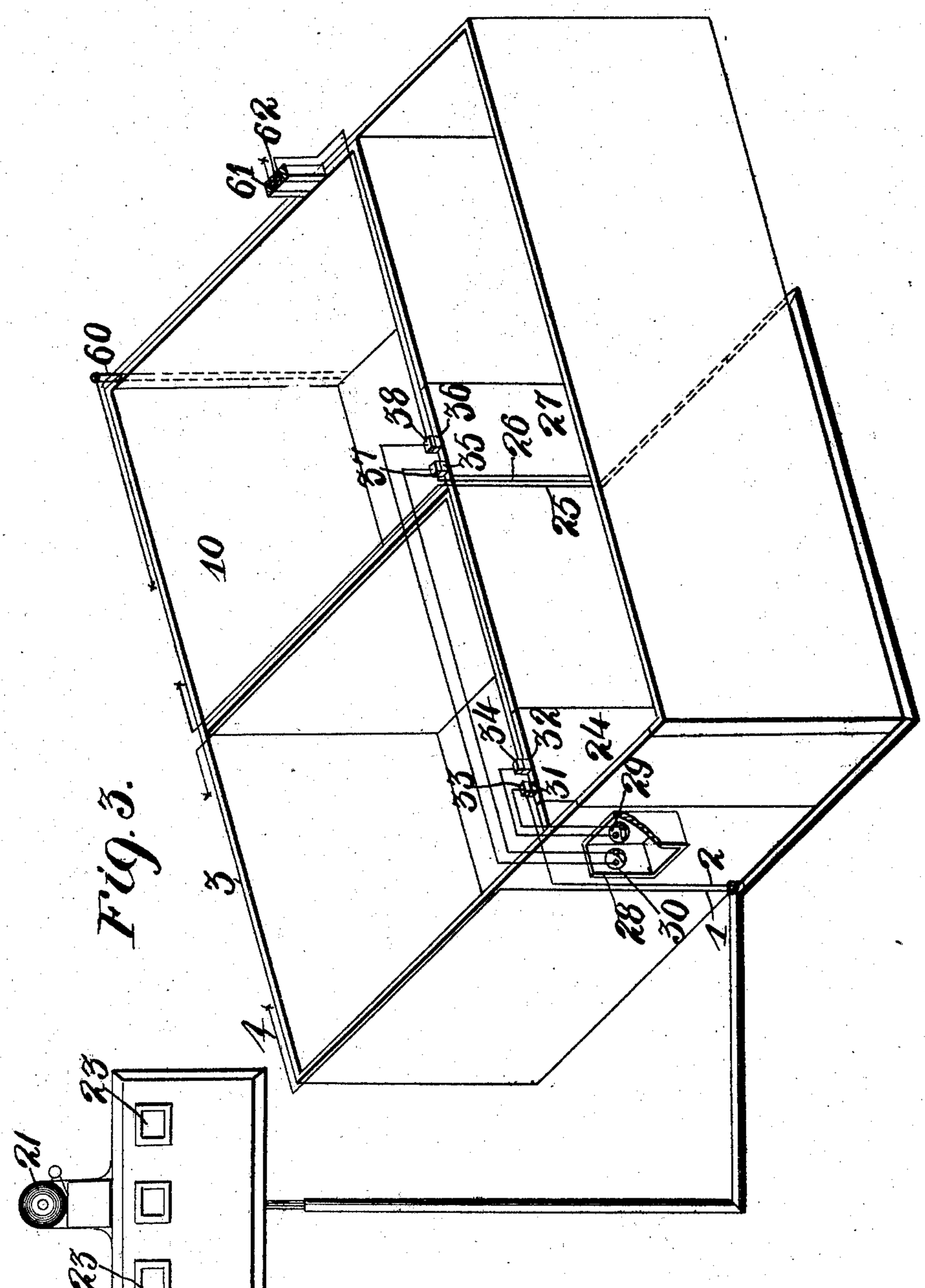

Fig. 3.

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UNITED STATES PATENT OFFICE.

CHARLES H. SPARKS, OF ST. LOUIS, MISSOURI.

ELECTRIC JAIL.

SPECIFICATION forming part of Letters Patent No. 502,325, dated August 1, 1893.

Application filed March 28, 1892. Serial No. 426,808. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. SPARKS, of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Electric Jails, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to an improvement upon the electric-jail mechanism shown and described in United States Letters-Patent No. 477,301, granted jointly to myself and Perley Hale and dated June 21, 1892.

In the drawings:—Figure 1, is a diagrammatic view of an electrical annunciator-mechanism applied to two inclosures, with separate and independent circuits for each inclosure. Fig. 2, is a transverse vertical section through the annunciator, and illustrating the position assumed by the armature when the circuit is broken. Fig. 3, is a diagrammatic view of the electrical annunciator-mechanism as applied to two jail cells, especially to the doors thereof, and showing the manner of announcing which of said doors is opened by an unauthorized person.

The object of my invention is to construct an inclosure in the forms hereinbefore mentioned, by providing the walls, floor, ceiling and door or doors of the same with a network of electrical-conductors so relatively arranged and devised, and placed in circuit with an annunciator and battery that an alarm will be produced whenever a fracture or aperture is made in any part of said inclosure or the doors are opened by an unauthorized person.

A further object of my invention is to provide a series of inclosures constructed and arranged as above described with electrical connections with an annunciator and an alarm mechanism; which annunciator, when actuated, shall indicate the specific one of the said series of inclosures which is being broken into or molested by an unauthorized person.

In carrying out my present invention, I provide each cell with an independent circuit of electrical conductors made to thoroughly traverse the walls thereof by being passed through a space between two or more plates of which the walls or bars are composed, and then led through an iron pipe or tube or casing to the jailer's room or other destination, where said conductors are suitably connected to or with an electrical annunciator, an alarm-mechanism and a source of electricity. In this arrangement each cell is provided with the proper number by which it may be designated, for instance the number 1 and arranged so that its electrical-mechanism will actuate a correspondingly-numbered plate of the annunciator, and so on, for any number of cells. By this arrangement the jailer or watchman will be immediately apprised of the specific cell which is being molested.

I desire to state that the annunciator and alarm mechanism may be included and operated in circuits which are either normally open or normally closed.

Referring to Fig. 1, the conductors 1 and 2 are conceived in this diagrammatic view to thoroughly traverse the surfaces of the walls, floors, ceilings and doors of an inclosure 3, which may be either a jail cell, a bank vault, or a safe. After thus traversing every portion of the inclosure 3 said conductors 1 and 2 pass through a steel protecting tube, shell or casing 4, and are led to either the jailer's room, watchman's office, or any other destination where an electrical annunciator 5 is located.

This annunciator is provided with a series of electro-magnets 6, 7 and 8, which are separately included in separate circuits of separate jail cells, bank vaults, or safes, as will appear farther on. The magnet 6 is connected in circuit with the conductors 1 and 2 and with a battery 9. The inclosure 10 is connected in a similar manner in a separate circuit by similar conductors and protecting tube or pipe 4, with a second magnet 7, and battery 11, and so on according to the number of inclosures desired to be protected, the only essential point being that each separate circuit for each separate inclosure shall be connected to an annunciator located in a jailer's room or a watchman's office, or other suitable location. It will be observed that each circuit just described is normally closed.

12, 13 and 14 indicate respectively the armatures of the series of magnets of the annunciator, which are each preferably pivoted at 15, at one end, to a suitable portion of

the annunciator frame, so that one end will be pivoted and the opposite end free. (See Fig. 2.)

Movably mounted above and extending across each of the armatures 6, 7 and 8 is a contact bar 16, which is secured to two short end pieces or arms which extend rearwardly and have their rear ends pivotally secured at 17 (see Fig. 1) to some portion of the annunciator frame. The normal position of each armature is in contact with the pole piece of its magnet, being normally held in such position during the continuity of the circuit in which said magnet is located. So, the normal position of the connecting-bar or rather contact-bar 16 is resting upon the upper surface of each of the series of armatures.

18 indicates a coiled or other form of spring, one end of which is connected to one of the armatures of the series, and the opposite end is attached to some stationary part of the annunciator frame. The purpose of this spring is to separate the armature from the core of its magnet, and elevate the free end of said armature and carry upward the contact bar 16 so as to make contact with two stationary contact-points 19 and 20 mounted in or upon the annunciator. These contact points 19 and 20 are bared or uninsulated as is also the portion of the contact bar 16 which makes contact with them.

21, indicates an electric bell, and 22, a local battery which are included in circuit with the contact points 19 and 20, so that when the bar 16 is elevated as before described a local circuit will be completed through the bell 21, battery 22, contact points 19 and 20 and a portion of said contact-bar 16 just referred to, and an alarm will be sounded by said bell, as will be more fully described hereinafter. Each of the armatures is fitted in a similar manner with a spring 18, so that when the circuit of its magnet is interrupted, an alarm will also be sounded in a manner similar to that just described.

Each of the armatures 12, 13 and 14, has fixed upon or secured to it a numbered plate, such as 3, which is adapted to vibrate in the rear of a sight-aperture 23 formed in the front plate of the annunciator, so that when the armature is in an elevated position, as shown in Fig. 2, the number carried by the plate will be visible to the observer.

Referring now to Fig. 3, the annunciator, electric bell and circuits, are similar in construction to those referred to in describing the construction illustrated in Figs. 1 and 2, the conductors 1 and 2 being conceived to traverse all parts of the cell 3, and its door 24, as before described, while the conductors 25 and 26 are conceived to traverse every portion of the cell 10 and its door 27.

In Fig. 3 I show an arrangement of switches by means of which either door, or rather the circuit which traverses either door may be cut out or shunted when the said door is to be opened by a person having proper authority, to the end that such opening will not be announced by the annunciator.

28 indicates a strong box made of steel, and preferably adapted to be locked in a secure manner so as to be accessible to the jailer or watchman or an authorized person only, and in which are located switches such as 29 and 30 of any ordinary construction.

It is to be conceived that each of the doors 24 and 27 is traversed by a net work of insulated conductors, located between the outer and inner plates of the doors, or located in grooves or crevices between two plates, or located in a space formed between two plates composing the bars of the cells or other inclosures.

31 and 32 indicate respectively the terminals of the circuit which traverses the door 24, said terminals being in the form of bared metallic contacts points, which are adapted to come in contact with corresponding contact points 33 and 34 fixed upon some part of the inclosure above said door, when the door is closed, and the contact points 33 and 34 are connected to the respective poles of the switch 29. (See Fig. 3.) The door 27 is provided with similar contact points 35 and 36, which are the terminals of the circuit carried by said door, and these contact points are adapted for connection with similar contact points 37 and 38 mounted upon some fixed portion of the inclosure above the door, when said door is closed, and these last named contact points 37 and 38 are connected by suitable conductors to the switch 30, located as before mentioned in the steel protecting box 28.

The inclosing walls of the inclosure may be in the form of steel plates, or they may be constructed of a suitable series of pipes or tubes 60, (see Fig. 3,) or they may be in the form of rectangular-bars 61 composed of two separate plates properly bent and fitted together so as to leave or provide a passageway 62 between said plates and in which the electrical conductors or wires are located.

In case the walls of the inclosure are constructed of pipes 60, the conductors will of course pass through said pipes, said conductors being of course provided with and incased in suitable insulation, should such insulation be necessary.

The operation is as follows: Referring to Fig. 1, it will be observed that the conductors traversing the walls of the inclosure or inclosures are normally included in a closed circuit or closed circuits. For instance, as already stated, the inclosure 3 is included in a separate and independent normally closed circuit with the magnet 6 of the annunciator and the battery 9. The inclosure 10 is similarly included in an independent closed circuit with the magnet 7 and battery 11. We will now conceive some portion of the walls of inclosure 3 to be molested by an unauthorized person, conceiving said inclosure to be a jail cell, and the connections properly made

as shown in Fig. 1. As soon as an aperture is made through the cell-wall or in the cell-wall, or one of the bars of which the cell is composed is cut into or broken, the conductor forming a portion of the circuit will be cut or broken, and the circuit in which the magnet 6 and battery 9 are included, will be broken. The armature 12 will thereupon be released and drawn upward by the spring 18 carrying with it the numbered plate 3 and the connecting or contact-bar 16, and thereupon said numbered plate 3 will have its numeral exposed to the observer through the sight aperture 23 in the front portion of the annunciator, and as before stated, the local circuit in which battery 22 and the bell 21 are included will be made by reason of 16 coming in contact with 19 and 20, and an alarm will be sounded by said bell and attract the attention of the jailer or watchman and simultaneously announce to him the specific one of the series of inclosures which has been molested by said unauthorized person, and so on the operation being the same when any one of the series of inclosures is so molested as to break its circuit.

Referring now to Fig. 3, the operation of the annunciator and alarm mechanisms is similar to that just described, with the exception that when either of the doors 24 or 27 is opened by an unauthorized person, or when an aperture is made in either one of said doors by such unauthorized person, and the circuit thereby broken, an alarm will be sounded by bell 21, and the specific inclosure which is being molested will be visibly announced by the exposure of a numbered plate through the proper sight aperture of the annunciator.

I will simply refer to door 24, as the construction and operation of the door 27 are identical with those of said door 24.

When the jailer or watchman closes the door the contacts 31 and 32 carried thereby will come in contact with the contacts 33 and 34, and if he desires to lock the door and properly secure it, he does so and then throws the switch 29 (or he may have thrown said switch previously) so as to cut in the circuit carried by said door, and thereby connect the terminals of said circuit carried by said door with the contacts 33 and 34, and cut said circuit into the main circuit. If he desires to open the door without sounding an alarm or announcing such opening, he first throws the switch 29 so as to short-circuit the circuit carried by the door, thereby causing the main circuit to include said switch, when said door may be opened without interrupting the main circuit.

Thus it will be observed, I have provided an inclosure or a series of inclosures with electrical conductors so relatively arranged and devised with electrical connections and annunciator and alarm mechanisms that when said annunciator or mechanism is actuated by the breaking or making of a circuit the specific one of the inclosures which is being molested or broken into or broken out of by an unauthorized person will be announced by the sounding of an alarm and by the exposure of a plate bearing a mark or number corresponding to the mark or number of the inclosure thus molested.

I claim—

1. As an improvement in jails, the combination, with a cell having its walls traversed by insulated electrical conductors, of a door for said cell consisting of a grating formed of hollow bars, electrical conductors disposed in the latter and insulated therefrom, said conductors being adapted to be in circuit with the wall conductors when the door is closed, and an electrical annunciator adapted to be actuated and expose a marked plate to view when the circuit is broken; substantially as and for the purpose set forth.

2. The combination, with an inclosure provided with a door, of closed-circuit electrical conductors traversing the walls of said inclosure, said conductors being provided with contact points adjacent to the door, conductors traversing said door and provided with contact points placing said door in circuit when in normal position, short circuit wires connected with the first-mentioned contact points, and a switch interrupting said short circuit wires; substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES H. SPARKS.

Witnesses:
ED. E. LONGAN,
JNO. C. HIGDON.