(No Model.)

W. S. HULL.

ELECTRIC PRISON CELL AND GUARD.

No. 489,902. Patented Jan. 10, 1893.

Fig. 1.

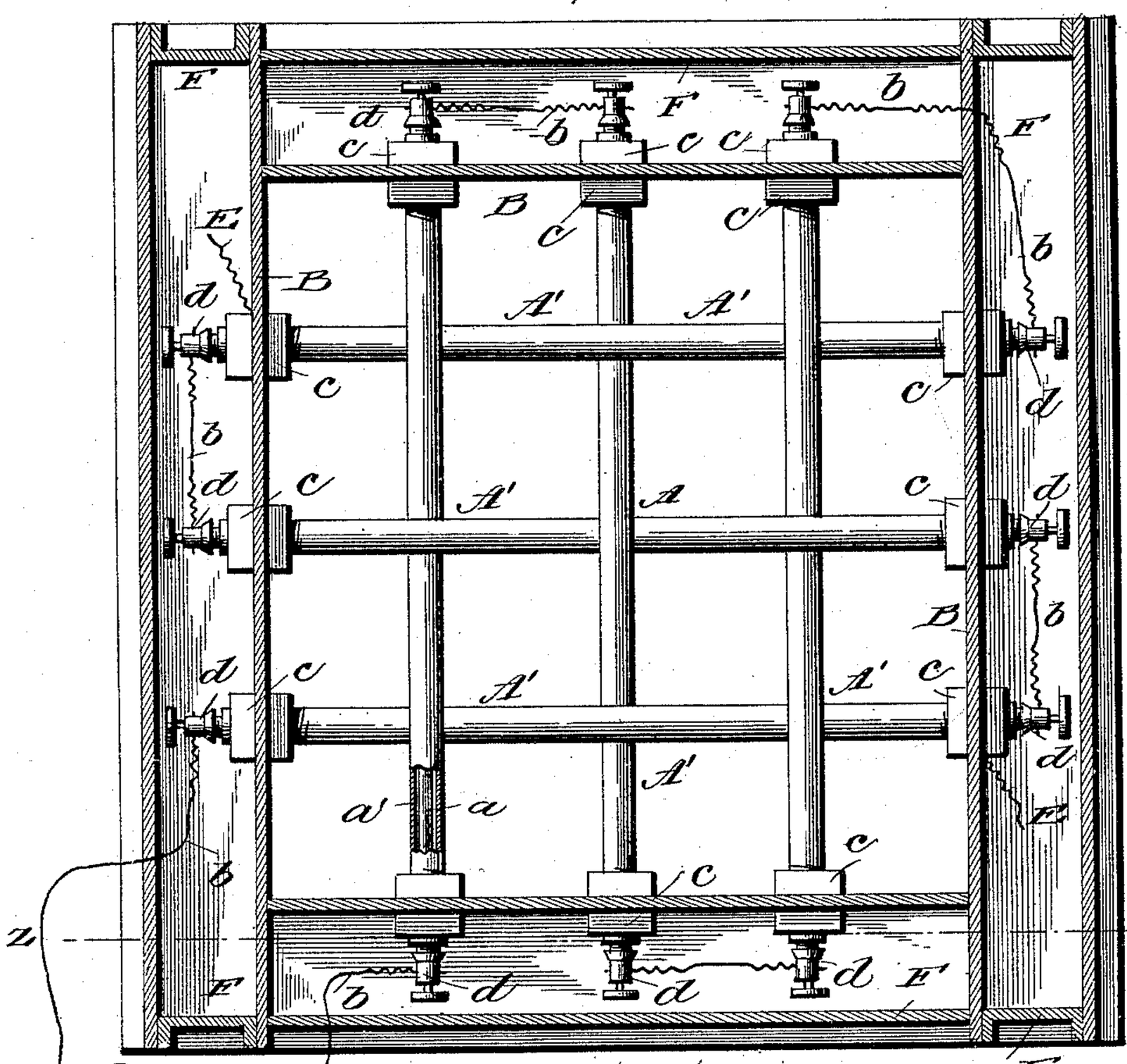


Fig. 2.

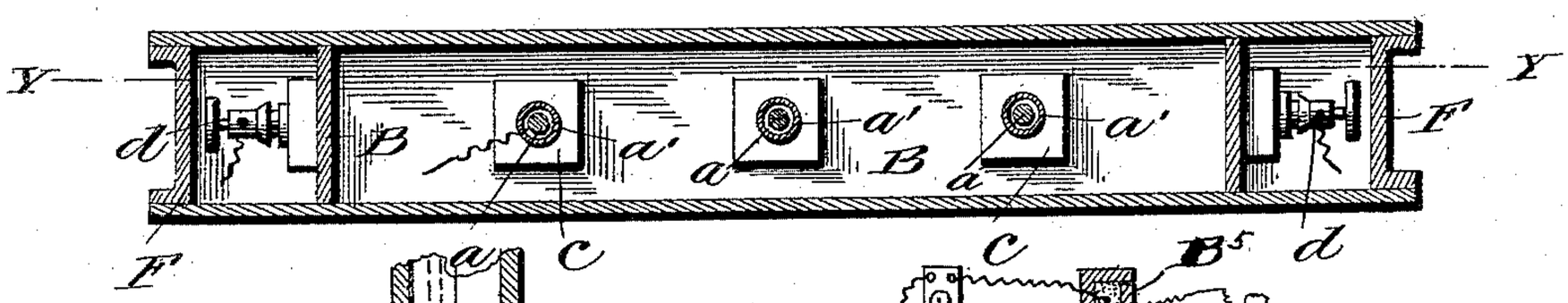


Fig. 3.

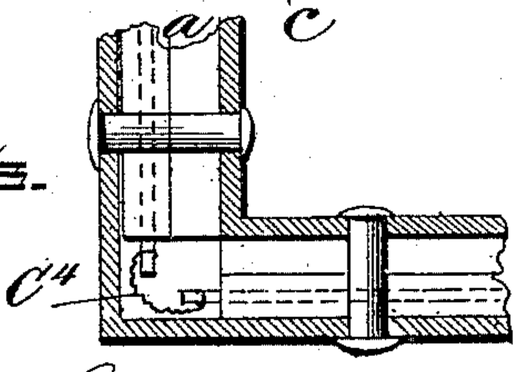
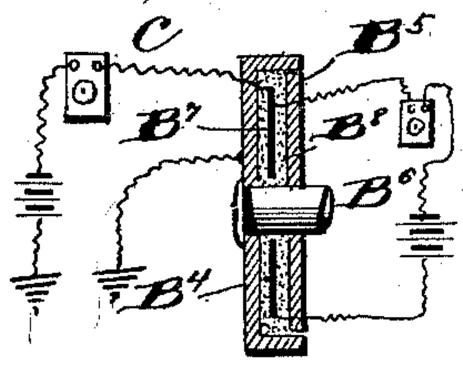


Fig. 4.



Witnesses
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ELECTRIC PRISON CELL AND GUARD.

SPECIFICATION forming part of Letters Patent No. 489,902, dated January 10, 1893.

Application filed September 22, 1891. Serial No. 406,463. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. HULL, a citizen of the United States, residing at Sheffield, in the county of Colbert, State of Alabama, have invented certain new and useful Improvements in Electric Prison Cells and Guards, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in jail and prison cells, bank vaults, lattice and window or door guards and other like structures, and it has for its objects among others to provide an economical means for the safe keeping of prisoners in jails and prisons and to prevent burglarious breaking into buildings and bank vaults. I propose that if a bar or rod, pipe or analogous element anywhere in the jail or guard be broken in two a loud and continuous alarm will be sounded. I also propose that if a rod or bar or pipe is cut partially in two it will also ring a bell or other alarm. The electrical connections are inclosed in suitable boxes, angle irons or casings, and the whole can be cheaply constructed, is durable and not liable to get out of order nor be tampered with.

Other objects and advantages of the invention will be hereinafter described and the novel features thereof will be specifically pointed out in the appended claims.

The invention is clearly illustrated in the accompanying drawings which with the letters of reference marked thereon form a part of this specification, and in which—

Figure 1 is a section on the line *y y* of Fig. 2 showing my improvement as applied to a jail cell, Fig. 2 is a section through the same on the line *z z* of Fig. 1, Fig. 3 is a sectional detail showing the angle construction, and, Fig. 4 is a section of an electric jail bar embodying my invention and illustrating the flat bar construction and showing the connections.

Like letters refer to like parts in all the figures.

Referring now to the details of the drawings by letter, A, designates a latticed grating which may be that of a jail cell for instance, the bars, rods or pipes A′, of which are each formed of an inner and outer pipe, rod or bar *a* and *a′* respectively, which may be held one within the other in any suitable manner, being supported at the ends in the framing B, which may be of any desired form of construction. The inner pipe, rod or bar should be properly insulated and is in continuous electric circuit with the current on. The connections are shown in Fig. 1 by the letter *b*, the inner pipes, rods or bars being alternately connected as seen in said Fig. 1, and the terminals connected with the battery C, through the alarm D, as seen in said Fig. 1. This alarm may be of any suitable construction. If the rod is broken at any point it will open the circuit and the instruments in connection will, by this action, close another circuit and sound the alarm.

Instead of the construction above described, I employ that shown in Fig. 4, in which is shown a channel bar B^4, and a flat bar B^5, held together in any suitable manner as by a rivet B^6, and with metal plates or small bars B^7, covered with insulating material B^8, and interposed or held between the channel bar and the merchant-bar, being insulated therefrom and from the rivet as clearly shown in Fig. 4. In the construction of the lattice work or door with this form of compound bar, the same rivet that binds the combination bar also fastens the intersecting bar, the rivet passing through both combination bars at the intersecting point. The closed circuit rings the alarm if the bar is broken in two. The open circuit rings another alarm if a file or other tool brings the interior insulating bar or plate into electrical connection with the outer channeled or merchant-bar.

In Fig. 3 is shown the manner of connecting the bars at the angles, the interior bars or rod being electrically connected by means of the wire C^4, as shown in said figure. The outside pipes, rods or bars are connected together throughout the system through the medium of the frame, and this will have a wire E, connected and run to the ground as seen in Fig. 1. There should be one pole of a battery connected with this system, the other end being open. Now to make a continuous flowing system of this open circuit, all that is necessary is to get the other end of

this battery to the ground. To accomplish this when a prisoner or other party uses a file or saw to cut the pipe, rod or bar he first cuts through the outer pipe, rod or bar and then reaches the inside conductor and here is the opportunity for the ground at the other end of the open circuit battery. The metal file or saw or other implement used, when it reaches the interior conductor, forms an electric connection between the outer and inner pipe or bar and even if it is only momentary, it is sufficient to close the circuit and start the other ball to ringing. Thus a bell will be rung or an alarm sounded if the bar or rod is broken and another if the bar is partially sawed or filed or otherwise cut in two. At the door openings and at all the angles and where the rods, pipes or bars are spliced or joined, it will be necessary to put the ends in iron or steel boxes or between double angle irons, housed in, and in these boxes or channel bars or angles F, the continuous electric connections will be made so that they will be protected as seen in Fig. 1.

Jam nuts *c*, are employed upon the rods or pipes, outside and inside the boxes, as seen in Fig. 1, and the ends of the inner pipes, rods or bars are provided with suitable caps *d*, through which the connections are made as seen in both views.

Any desired form of lattice work may be employed in connection with my invention, but the preferable plan will be to have the pipes or rods crooked at their intersecting points and interlaced as shown and the bars riveted at their intersecting points as shown.

If desired I may use only one battery which will be an open circuit and connected with the interior conductor. The outer bar, rod, pipe or conductor will be connected with the ground and when the file, saw or other tool brings the two into connection, the circuit will be closed and the alarm sounded.

Various modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

What I claim is:

1. A lattice for jail cells and the like comprising pipes, insulated conductors forming a circuit passing through said pipes and a battery and alarm included in the circuit of said conductors, as set forth.

2. A lattice for jail cells and the like, comprising pipes, insulated conductors forming a closed circuit, passing through said pipes, and a battery and alarm in the closed circuit of said conductors as set forth.

3. A lattice for jail cells and the like, comprising pipes insulated conductors passing through said pipes and forming a closed circuit and an open circuit and alarms and batteries arranged in each circuit, substantially as described.

4. A lattice for jail cells and the like, comprising metal pipes, insulated conductors, passing through said pipes and forming a closed circuit and an open circuit and alarms and batteries arranged in each circuit, said pipes being interlaced, substantially as described.

5. In jail cell, bank vault lattice and analogous structures a conductor consisting of a channeled bar, a bar held therein and a confined metal plate insulated as described, substantially as specified.

6. In jail cell, bank vault lattice and analogous structures, a conductor consisting of a channeled bar, a flat bar held therein and a confined metal plate insulated as described and combined with double angle bars for inclosing the connections between said adjacent metal plates, substantially as specified.

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

WILLIAM S. HULL.

Witnesses:
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