

(No Model.)

G. J. JEWELL.

ELECTRIC COVERING FOR INDICATING ABNORMAL CONDITIONS.

No. 362,010.

Patented Apr. 26, 1887.

Fig. 1.

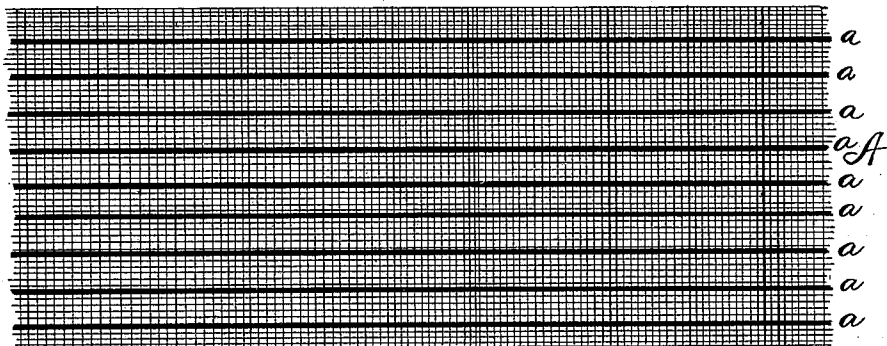


Fig. 2.

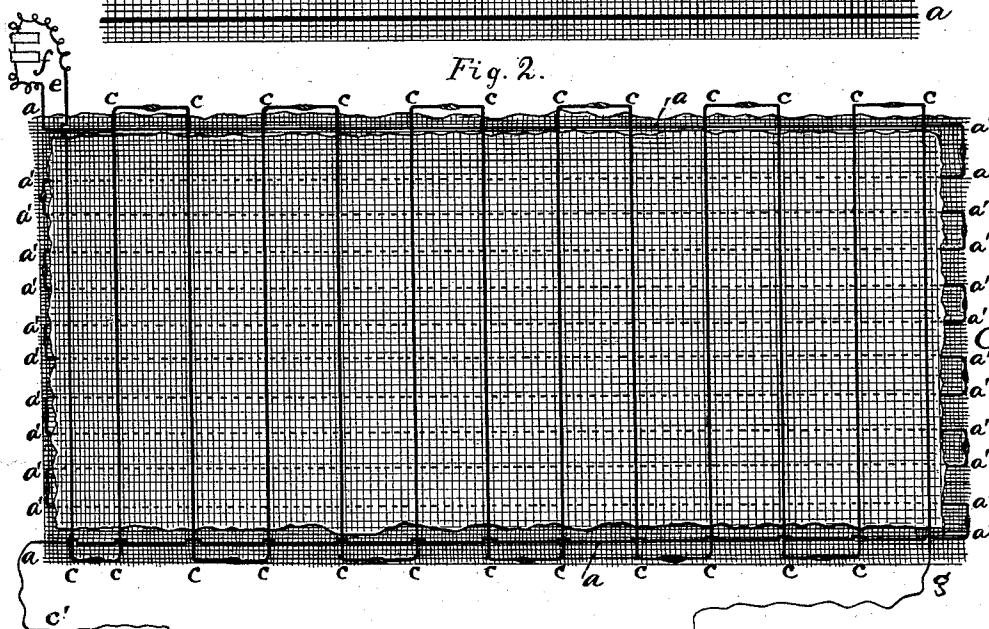


Fig. 3.

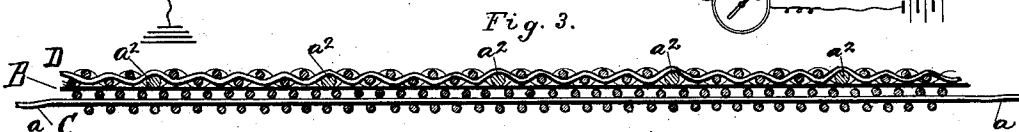
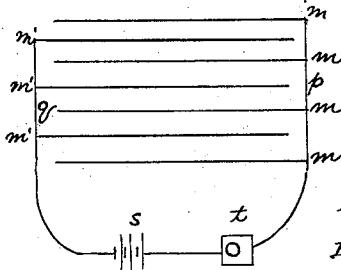


Fig. 4.



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UNITED STATES PATENT OFFICE.

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ELECTRIC COVERING FOR INDICATING ABNORMAL CONDITIONS.

SPECIFICATION forming part of Letters Patent No. 362,010, dated April 26, 1887.

Application filed December 24, 1884. Serial No. 151,104. (No model.)

To all whom it may concern:

Be it known that I, GEORGE JOHN JEWILL, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Electric Coverings for Indicating Abnormal Conditions; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

Figure 1 represents the fabric as it is first made. Fig. 2 represents the fabric after it is disposed in place. Fig. 3 is a section in line *x x*.

This invention relates to improvements in means for rendering structures of various kinds secure from danger arising from abnormal conditions—such as fire, water, or burglars—which injuriously affect the structure or its contents.

The invention consists in a fabric of peculiar construction, such as is hereinafter described.

In the annexed drawings, the letter A indicates any ordinary fabric, in which are placed bare metal wires *a*. The preferable way of forming this fabric is by weaving. As the textile fabric which joins the base is made in the loom, wires *a* are disposed so as to form threads of the warp. These wires *a* are placed any given distance apart—say two inches. The fabric is then woven in the usual way, the wires becoming part of the same, as shown in Fig. 1. The wires may be incorporated in other ways, such as laying the wires in a series side by side between two pieces of fabric, and then securing the whole by paste or otherwise; but I prefer the first method. The fabric thus formed is cut into lengths suitable for use, say, for flooring of a room or the ceiling. The fabric thus cut is put in place like strips of wall-paper, arranged in one direction of the room, forming a covering, C. The protruding ends *a' a'*, &c., are soldered together in loops, and form one continuous wire. Then a sheet of thin paper, B, is placed on this covering of wire fabric. Over this sheet of paper B is placed another covering, D, of the wire fabric,

this being disposed so that its wires *a*² run transverse the wires *a* of the first covering, C. The ends *c c*, &c., of this second covering are soldered together, forming a continuous wire through this second covering. Then this continuous wire is connected at one end—say *e*—with the other continuous wire in the first layer through a resistance-coil, say at *f*. Then one of the layer-wires is grounded, as at *e'*, and the other is connected with the line-wire *g*, which runs to the battery, and has a galvanometer connected therewith. This covers the floor with a mesh or net-work of wire which is in circuit.

Now, should any accident happen to the wire—say it is cut for burglarious purposes, or by fire—the circuit is broken, the galvanometer-needle falls open, and an alarm is given. Should any one walk across the room, or pressure be applied so as to press one series of wires upon the others, immediately the current is short-circuited, the resistance-coil is cut out, and the galvanometer-needle gains its position in the angle, and the alarm is also given. Should water by any mishap flow in, the two series will contact and also short-circuit. It is therefore obvious that whether the wire fabric be cut or contacted in any way an alarm will be sounded.

It is obvious that the two coverings of wire fabrics need not be placed so that the wires are at right angles, but simply so that they shall cross one another at any angle.

This fabric is to be used with any structure—such as a house, a safe, a trunk, &c.—by simply putting it in place, as above described.

In Fig. 4 is shown diagrammatically another way to use the fabric, especially to indicate leakage of water. Here only a single thickness is used—say on the ceiling. Instead of looping the ends, as described, the alternate ends *m m'* of the wires on each side are connected with the wires *p q*, which connect with the battery *s* and gong *t*. This forms an open circuit in the covering. Now, if water should leak in, a connection is made at some point, the circuit is closed, and the alarm sounded.

Where this fabric is designed for use in places where the alarm would only be sounded by breaking the wires, these may be covered before inserting them in the fabric; but I prefer

the bare. However, my invention includes in its scope any kind of wire, covered or uncovered.

Having described my invention, what I claim is—

- 5 1. As a new article of manufacture, a fabric to be used on structures to render an alarm in case of abnormal conditions, the said fabric consisting of woven or like fabric containing
10 a series of bare wires formed therewith, as set forth.
- 15 2. As a covering for structures to insure alarm in case of abnormal conditions, the two layers of wire fabric constructed as described, in combination with the interposed layer of

paper or analogous bibulous substance, the series of wire in one layer crossing those in the other, as set forth.

3. As a new article of manufacture, a fabric to be used on structures to render an alarm in case of abnormal conditions, consisting of a woven or like material containing a series of wires formed therewith, as set forth.

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

GEORGE JOHN JEWILL.

Witnesses:

J. H. ANDERSON,
C. B. ROBERTS.