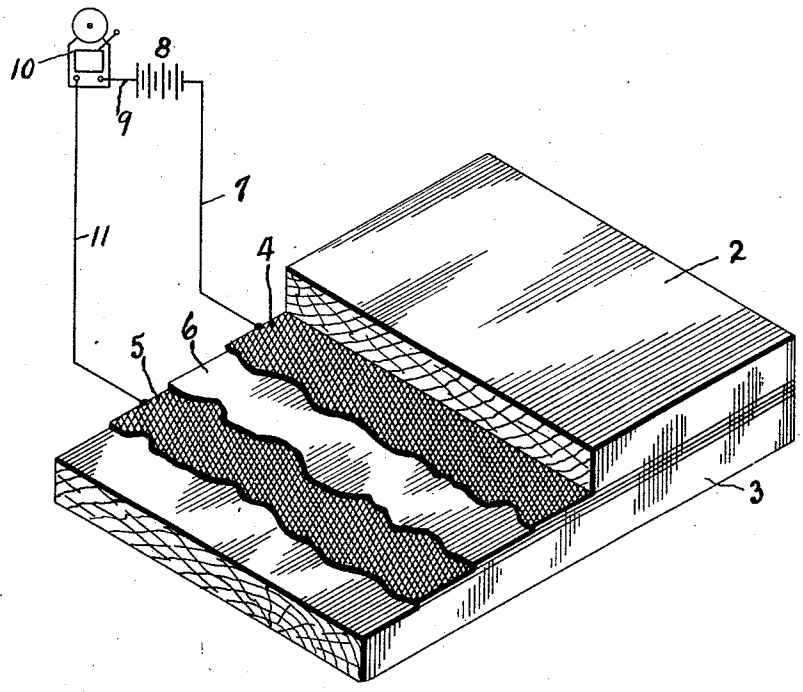
May 19, 1925. 1,538,223

B. H. SMYERS, JR., ET AL

BURGLARPROOF WALL

Filed May 31 , 1922



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Patented May 19, 1925. 1,538,223

UNITED STATES PATENT OFFICE.

BERTRAND H. SMYERS, JR., OF BELLEVUE, AND MARK H. JACKSON, OF SWISSVALE, PENNSYLVANIA.

BURGLARPROOF WALL.

Application filed May 31, 1922. Serial No. 564,990.

To all whom it may concern:

Be it known that we, BERTRAND H. SMYERS, Jr., and MARK H. JACKSON, citizens of the United States, and residents, respectively, of Bellevue and Swissvale, both in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Burglarproof Walls, of which the following is a specification.

This invention relates to wall structures for safes, vaults and the like and more particularly to wall structures having means embedded therein adapted to cause an alarm to sound when said wall is penetrated.

One object of this invention is the provision of a wall structure that may readily be applied to existing vaults, safes or the like, without altering their design and at a very small cost.

Another object is to provide a wall structure having electrical conductors therein which will make a circuit to an electrically operated alarm when penetrated by a tool.

Another and very important object is to provide a wall structure of this class having conductors embedded therein which will not offer a detectable resistance to the penetration of a tool when it strikes said conductors.

Another object is to provide a wall structure having a pair of conductors therein separated by a very thin layer of insulating material, which material is combustible and readily penetrable.

A still further object is to provide a wall structure of the class described having flexible conductors and insulating material embedded therein which is of materially less thickness than the outer layer of covering wall.

A still further object is the provision of a wall structure having the novel features described in the following specification and illustrated in the accompanying drawing.

The drawing shows a perspective view of a portion of wall constructed in accordance with this invention and broken away to show the several elements.

Referring more particularly to the drawing, the numerals 2 and 3 designate the outer plates or layers of wall, which may be wood, fiber or other non-conducting material. If desired, the outer layers 2 and 3 may be of cement, plaster or the like having an inner coating or layer of insulating material.

Two plates or layers of conducting material 4 and 5 are secured between the outer layers of wall and separated by an intermediate layer or plate of insulating material 6.

The conducting material 4 and 5 is preferably composed of fine copper wire mesh and the insulating material 6 is preferably composed of thin paper coated with shellac or other nonconducting and readily combustible material.

The combined thickness of the wire mesh members 4 and 5 and insulating member 6 is less than one-eighth of an inch and materially less than the outer layers of wall 2 and 3.

A lead wire 7 is secured to the conductor member 4 and leads to the one side of a battery 8. A wire 9 leads from the other side of the battery 8 to one pole of a bell or other alarm 10, and another wire 11 leads from the conductor member 12 to the other pole of the alarm 10.

It will be readily seen that by crossing the conductors 4 and 5 by a metal tool or otherwise, the circuit from the battery 8 to the alarm 10 will be closed and the alarm operated.

The advantages of this wall construction will be readily appreciated by those skilled in the art. First, the layers of conducting material 4 and 5 are of such a construction that they will not offer a detectable resistance to a tool used in penetrating the outer layers of wall. Second, the wires of the mesh conducting material are so close to each other that even a fine drill will not penetrate the wall without closing the circuit. Third, the fine wires of the mesh are of such a nature and the layers 4 and 5 are so close to each other that even though they be punctured by a tool composed of insulating material they will come into contact with each other and close the circuit. Fourth, if the wall is burned through by an acetylene flame or otherwise, the thin layer of insulating material 6 will be destroyed, allowing the contactors 4 and 5 to contact since they are so flexible that the force of the flame will vibrate them. Also if a flame of this nature is used the melted portion of the conductors will serve to bridge the small space between the conductors and close the circuit.

It will readily be seen that the thin wire mesh conductors have many advantages over solid plates or other similar conductors and are a great improvement in the art.

We claim:

A wall structure comprising back and front layers of comparatively thick non-conducting material, at least two layers of comparatively thin, fine wire mesh having more than thirty-six mesh to the square inch, interposed between said back and front layers of comparatively thick material, and a comparatively thin layer of readily combustible insulating material interposed between said layers of wire mesh.

In testimony whereof, we have hereunto set our hands.

BERTRAND H. SMYERS, JR.
MARK H. JACKSON.