

UNITED STATES PATENT OFFICE.

LUKE H. MILLER, OF BALTIMORE, MARYLAND.

FIRE-PROOF LINING FOR BOXES, SAFES, DOORS, SHUTTERS, VAULTS, &c.

SPECIFICATION forming part of Letters Patent No. 283,133, dated August 14, 1883.

Application filed February 9, 1883. (No specimens.)

To all whom it may concern:

Be it known that I, LUKE H. MILLER, a citizen of the United States of America, residing at Baltimore, and State of Maryland, have invented certain new and useful Improvements in Fire-Proof Linings, of which the following is a specification.

My invention relates to an improvement in fire-proof lining for boxes, safes, doors, shutters, vaults, and walls of places desired to be rendered fire-proof, of which the following is a specification.

Fillings have heretofore been employed, in safes and similar structures, consisting of different substances—such as alum and plaster-of-paris, gypsum, lime, asbestos, and hydraulic cement. These and similar substances have been used separately and in various combinations, and they possess a very desirable characteristic—namely, they may be used dry or in a plastic state, and in the latter condition admit of being tamped or poured while wet into place, and then concreting or solidifying upon becoming dry. Thus such fillings serve to impart stability to the metal structure in which they are contained. While the stability thus obtained is of great importance—for instance, in iron safes—the fact that these wet-poured concrete fillings, when of sufficient thickness to afford the requisite protection against fire are very heavy, is a great objection. Safes having walls filled alone with any of these solid cement or concrete materials can have but small interior storage capacity in proportion to the exterior dimensions, because of the great thickness required for the walls.

I am aware that a fire-proof material has heretofore been used for lining safes and other similar things, known as “magneso-calcite,” and that a board has been employed for linings composed of this material (slaked lime and magnesia) combined with some non-combustible fiber, like asbestos. Such boards are in a high degree fire-proof, and are light, tough, and strong, but lack that other desirable property or characteristic in a filling which permits it to be tamped or poured wet into the structure and then to concrete or solidify while drying.

My invention consists of a fire-proof lining composed of a filling material or compound consisting of alum, plaster-of-paris, gypsum, lime, asbestos, or hydraulic cement, or any one, two, or more of these ingredients which will pro-

duce a compound adapted to permit of being tamped or poured wet, and which will then concrete or solidify, in combination with a thin covering of magneso-calcite board—such as hereinbefore described—placed on the inner or outer side of the concrete. By constructing or forming a wall or lining of these combined materials, placed as described, I produce a more perfect article and overcome the objectionable points which exist in either when said materials are used separately. The thickness of the solid concrete portions of the wall or filling need only be about half, or even a little less than half, of that required heretofore, where this material alone was used. Thus the metal structure, whatever it may be, is strengthened and rendered stable by the homogeneous or integral character of the concrete, which at the same time contributes to the structure a certain proportion of the fire-proof security, and the usual great weight of the solid concrete, as heretofore used alone, is lessened by half. The boards or thin slabs of magneso-calcite are placed directly over the concrete. For an ordinary-sized safe these boards may be about a half-inch thick, more or less.

When used in a safe, the magneso-calcite boards may be on the inside as a lining, or on the outer side as a covering, of the concrete; or may be on both sides. A wall or lining thus formed will have only about half the weight and bulk of the same size wall when composed of the ordinary solid concrete material alone, and its fire-proof properties are such that the interior of a safe thus lined will be practically indestructible by fire.

Having described my invention, I claim and desire to secure by Letters Patent of the United States—

A fire-proof lining for boxes, safes, vaults, and other like uses, composed of a compound of materials, substantially as described, adapted to permit of being poured wet or in a plastic state, and which will then concrete or solidify while drying, and a thin covering of magneso-calcite directly over the said concrete, as set forth.

In testimony whereof I affix my signature, in presence of two witnesses, this 8th day of February, 1883.

LUKE H. MILLER.

Witnesses:

MURRAY HANSON,
JOSEPH WINKLER.