J. E. MULFORD.

Fire-Proof Safes.

No. 139,414. Patented May 27, 1873.

FIG. 1.

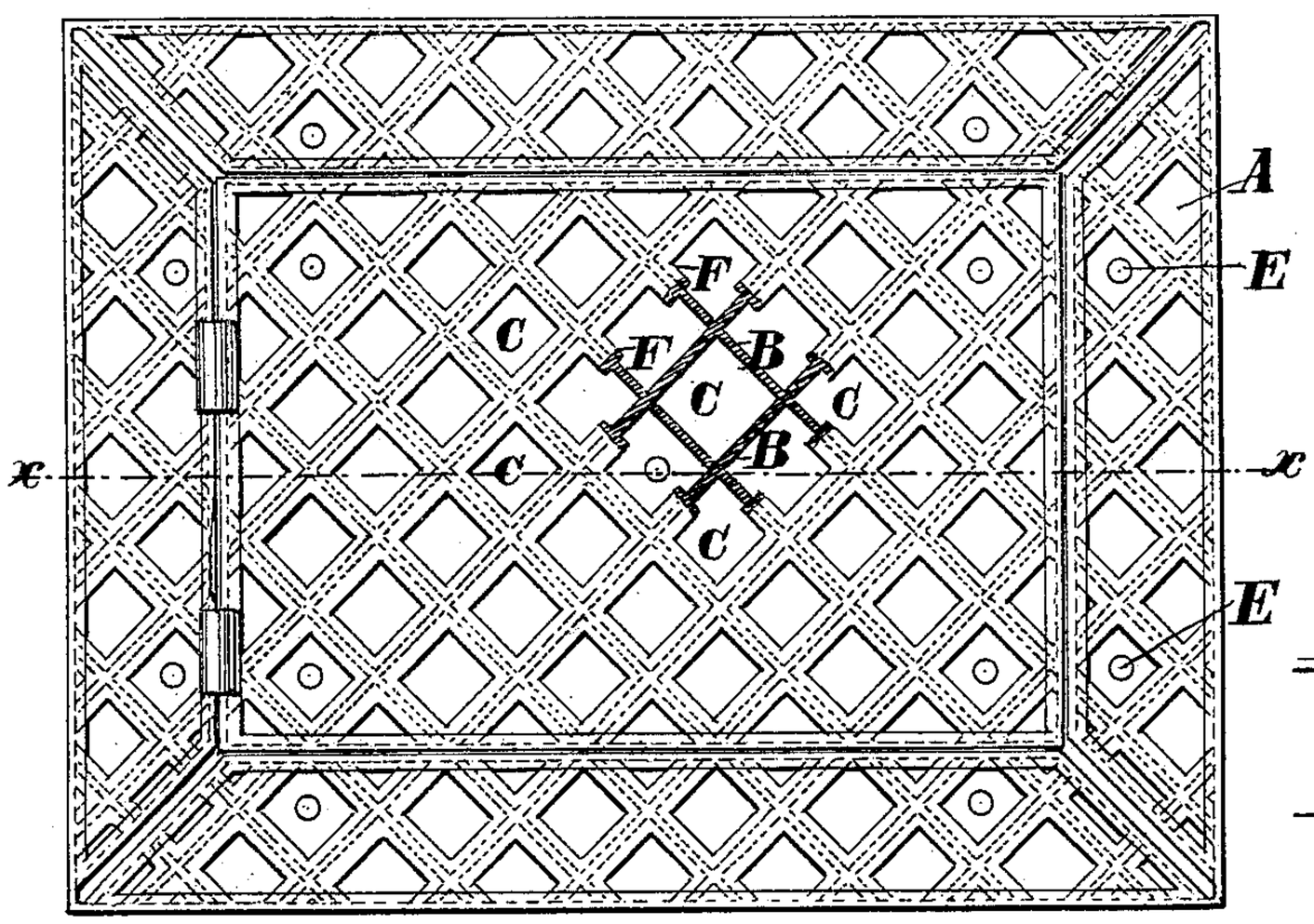


FIG. 3.

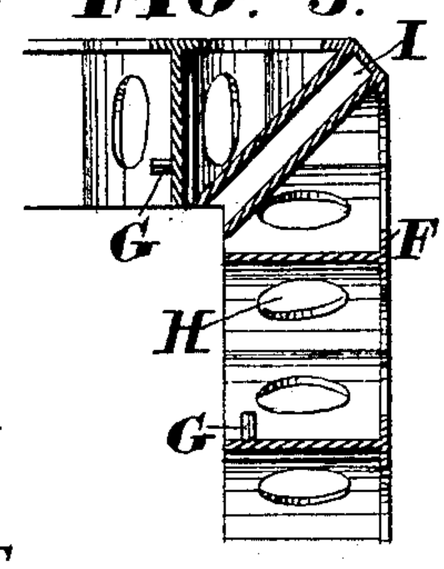
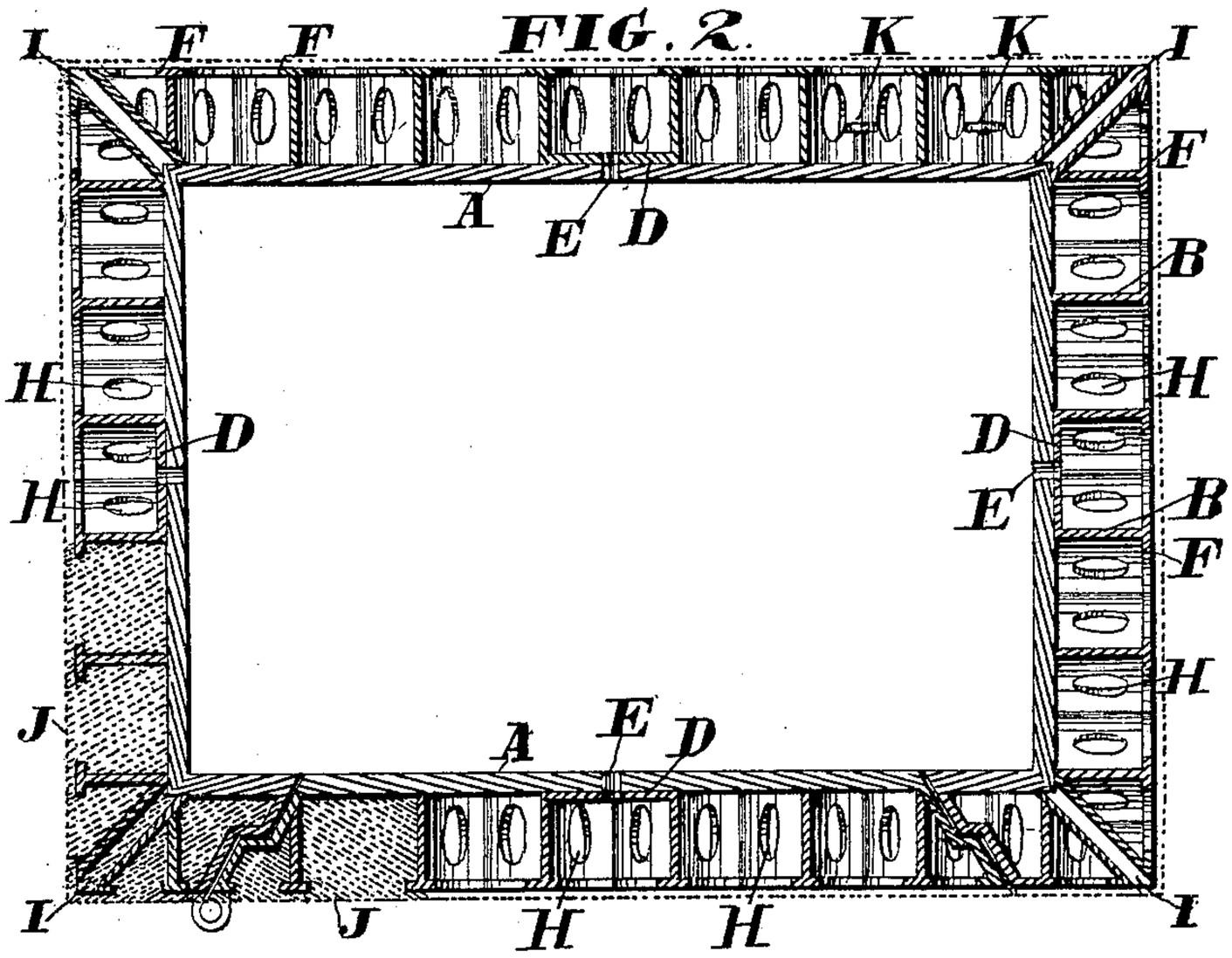


FIG. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN E. MULFORD, OF NEW YORK, N. Y.

IMPROVEMENT IN FIRE-PROOF SAFES.

Specification forming part of Letters Patent No. **139,414**, dated May 27, 1873; application filed February 25, 1873.

To all whom it may concern:

Be it known that I, JOHN E. MULFORD, of the city, county, and State of New York, have invented certain Improvements in Fire-Proof Safes, of which the following is a specification:

The subject of my invention is a safe protected on its outside with non-conducting or fire-proof material, which is connected and secured to the metallic body of the safe by flanged bars forming a metallic frame-work, constructed to admit of expansion and contraction without injury, and serving to prevent the detachment of said material with ordinary use, or in falling, or under changes of temperature.

In the accompanying drawing, Figure 1 is a front elevation of frame-work of a safe illustrating the invention. Fig. 2 is a horizontal section of the same on the line *x x*, Fig. 1, showing the fire-proof material applied at one corner. Fig. 3 is a section of one corner of the frame on a larger scale.

In carrying out my invention, I construct the inner walls A of the body and door of the safe of iron or steel, or both in any usual or effective manner, making them burglar-proof, if required. This shell I cover with cells C, formed of bars B, intersecting one another at any desired angles, so that the cells may have a square, rhombic, octagon, or other preferred form. At suitable intervals the cells C are provided with bottom plates D, cast or otherwise connected with the bars B, and perforated to receive bolts or rivets E, which thus form the means of connecting the entire cellular covering to the shell A of the safe. Upon the outer edges of the bars B are formed flanges F, and in addition thereto simple lugs or studs G may be employed, the object of the said flanges and lugs being to anchor within the cells the fire-proof filling presently to be described. H are apertures in the bars B, to receive the filling and unite or key together the contents of the adjoining cells. It will be observed by an inspection of Figs. 2 and 3 of the drawing, that the bars B on each side or face of the safe are disconnected at the corners from those of the other sides or faces, the corner-spaces I being, in common with the cells C, filled with the non-conducting and fire-proof material, the compressibility of which will prevent any violence resulting to the structure from changes in temperature. The non-conducting fire-proof material J, which fills the cells C and I and forms the external surface of the safe, is preferably made of a mixture of asbestus with calcined gypsum, or its equivalent, united by lime-putty or other suitable cement. This filling material, beside being absolutely fire-proof and an excellent non-conductor of heat, is possessed of considerable elasticity, and is free from liability to crack or crumble in drying or under changes of temperature. Applied in the manner described, within connected cells, it constitutes a practically continuous fire-resisting coating for safes or similar structures. It may, if preferred, completely cover the bars B, so as to not even leave edges of metal exposed. Its surface is indicated by the dotted line in Fig. 2. The surface of the fire-proof material is sufficiently hard and durable to receive paint or any described decoration. Through the apertures H in the cell-walls the filling is connected over the entire structure. As a further means of securing the filling, a web of wire-gauze may be applied either at or below the surface. The cellular frame-work, formed of the flanged bars B F and plates D, may preferably be cast of iron, in a continuous piece, for each side of the safe.

The following is claimed as new—

A safe or similar structure surrounded with a frame-work of flanged bars, disconnected at the corners to permit expansion and contraction, and holding a body of fire-resisting material which forms the exterior surface of the safe.

To the above specification of my improvement in fire-proof safes, I have hereunto set my hand this 31st day of January, 1873.

JNO. E. MULFORD.

Witnesses:

OCTAVIUS KNIGHT,

WALTER ALLEN.