(No Model.)

J. FARREL.

FIRE PROOF SAFE.

No. 328,113. Patented Oct. 13, 1885.

Fig. 1.

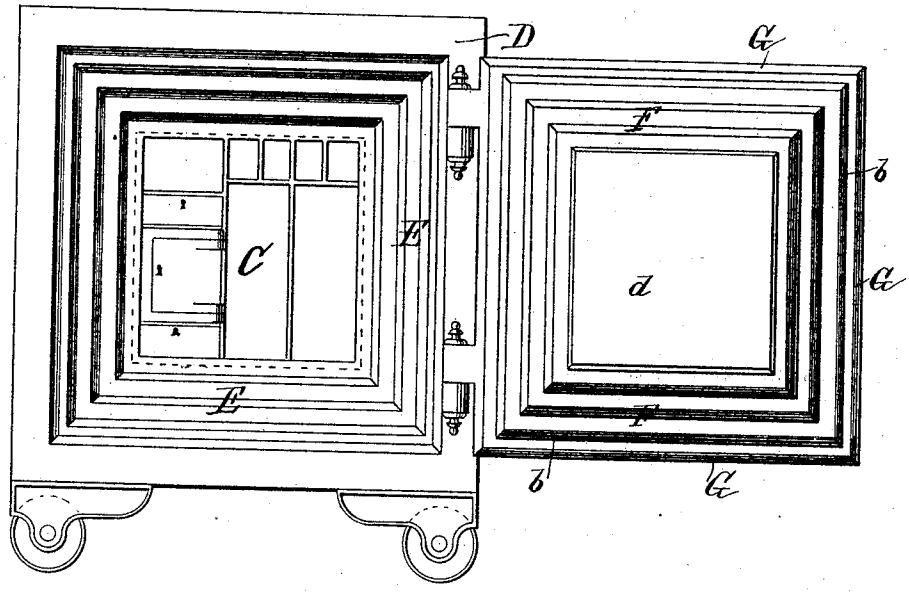
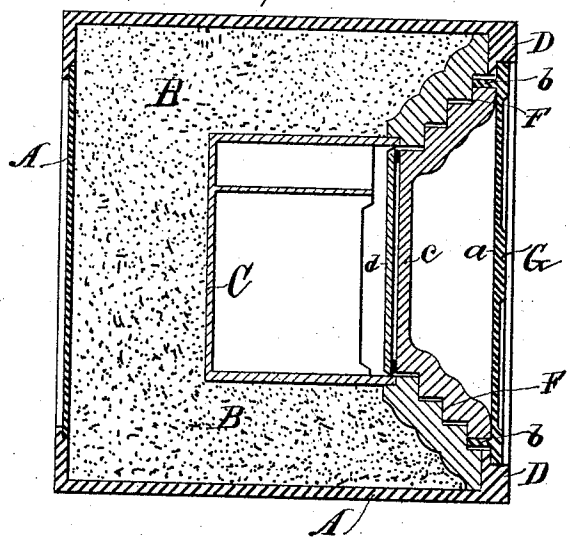


Fig. 2.



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FIRE-PROOF SAFE.

SPECIFICATION forming part of Letters Patent No. 328,113, dated October 13, 1885.

Application filed April 9, 1885. Serial No. 161,851. (No model.)

To all whom it may concern:

Be it known that I, JOHN FARREL, of the city, county, and State of New York, have invented certain new and useful Improvements in Fire-Proof Safes and Vaults, whereof the following is a specification.

In my improved fire-proof safes I make the outer shell and its sustaining-frame of iron or steel, and for the lining or filling between the inner and outer case, I employ any of the ordinary compounds in use for this purpose which give off vapor or steam under influence of great heat; but the inner shell or case for containing the books and valuables, and its door, I make of paper or paper-pulp which has been solidified by severe pressure, as by rolling or the hydraulic press; and I take the same material from which to make the door-jambs, and also the border or frame and inner face of the safe-door.

In the annexed drawings I have shown a safe embodying my invention, wherein Figure 1 is a front view showing the door open, and Fig. 2 is a vertical transverse section taken through the safe and door with the door closed. The light section-lines indicate the parts made of paper, the heavy section-lines the metal parts, and the matted portions the fire-proof filling.

A indicates the outer shell and frame of metal, as iron or steel. B is the filling, which may be hydraulic cement, calcined gypsum, with or without an admixture of alum or land-plaster and Epsom salts, or other compounds which give off moisture under the influence of a high degree of heat.

C is the inner case or shell for the books, papers, and other valuables, and is made of paper substance in any known manner. The case is divided into pigeon-holes and other compartments, some of which are furnished with their own doors, or with drawers, as the case may be. Such case, with its partitions and other parts, may be made of paper plates cut or sawed to size and united as in wood-working; or parts—such as the drawers or small doors—may be formed of paper-pulp in suitable molds and solidified by severe compression.

D is the metallic frame on the open side of the safe, and surrounds the stepped jambs E, in which the safe-door is seated when closed, and the border F of which door, toward the interior of the safe, is stepped in a number of flanges corresponding to and snugly fitting the steps of the jambs E. These parts have always been made of metal, and when a safe is exposed to fire the heat tends to find its way to the interior, following the metal of the jambs and of the door along the seam between the door and the jamb, aided by the conductive properties of these parts. To prevent this, I provide for intercepting the course of the heat, and for this purpose I make the jambs E around the door of the paper substance, as by molding the same from pulp; or of paper plates cut and joined or otherwise. The border F of the safe-door G is also made of the same material, and the jambs E are arranged to abut against the paper book-case so as to be united thereto. The outer plate, *a*, of the door G is of metal, strengthened by a marginal frame, *b*, within which the border or rim F is secured. The inside face, *c*, of the door is also formed of paper in any convenient manner. One way is to mold the whole border F and face *c* in one piece or part.

To complete the book-case of paper by adding a door of the same material, I prefer to apply an extra face or plate, *d*, to the inner side of the door, the same being set off slightly, leaving an air-space between it and the door. When the door is shut, this plate *d* will set into and close the book-case front; but the safe-door itself will answer, since the face *c* thereof is of paper board or plate, and the book-case door may be otherwise made and applied.

The solidified paper substance is tough and strong, as required for the door border and jambs, and is practically unaffected by heat when iron is red-hot, so that the conveyance of heat by way of the jambs and seam around the door is prevented by the paper door-border and door-frame jambs, instead of being aided, as is the case when these parts are of metal. The paper substance is advantageous for the inner case or shell from the readiness with which the outer surface is more or less saturated by the vapors from the filling material when the safe is exposed to great heat, thus further enhancing its fire-resisting properties when used in this connection; but I

make no claim to paper substance of any sort, as the filling or fireproofing for a safe; but for such filling I rely wholly on those fire-repellent compounds the principle of whose action is to oppose the effects of fire by emitting moisture when attacked by heat.

If desired, the paper substance can be treated with salts of soda, sulphate of iron, sulphate of magnesia, salts of alumina, or any of the chemicals used to render fibrous material incombustible.

I claim—

1. In a fire-proof safe, the combination of an outer shell and frame of metal, an inner shell or book-case, a fire-repellent filling, as described, and door-frame jambs E, formed wholly of paper substance, as set forth.

2. In combination, the metal outer shell, a fire-repellent filling, the jambs E of paper substance, the inner shell or book-case of paper, and a book-case door also of paper.

3. In combination, the metal outer shell, the fire-repellent filling, the jambs E of paper, the inner shell or book-case of paper, and a metal safe-door containing a like filling and having its border F also of paper substance.

4. The combination, with a safe containing a fire-repellent filling, a paper inner shell or book-case, of a safe-door having a border, F, of paper substance and carrying a plate of paper for closing the book-case.

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