No. 6,655. PATENTED AUG. 21, 1849.

E. & J. L. HALL.

FIREFROOF CHEST.

Fig. 2

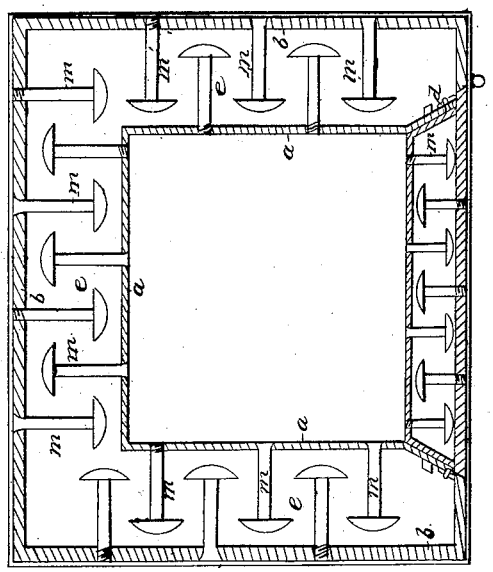
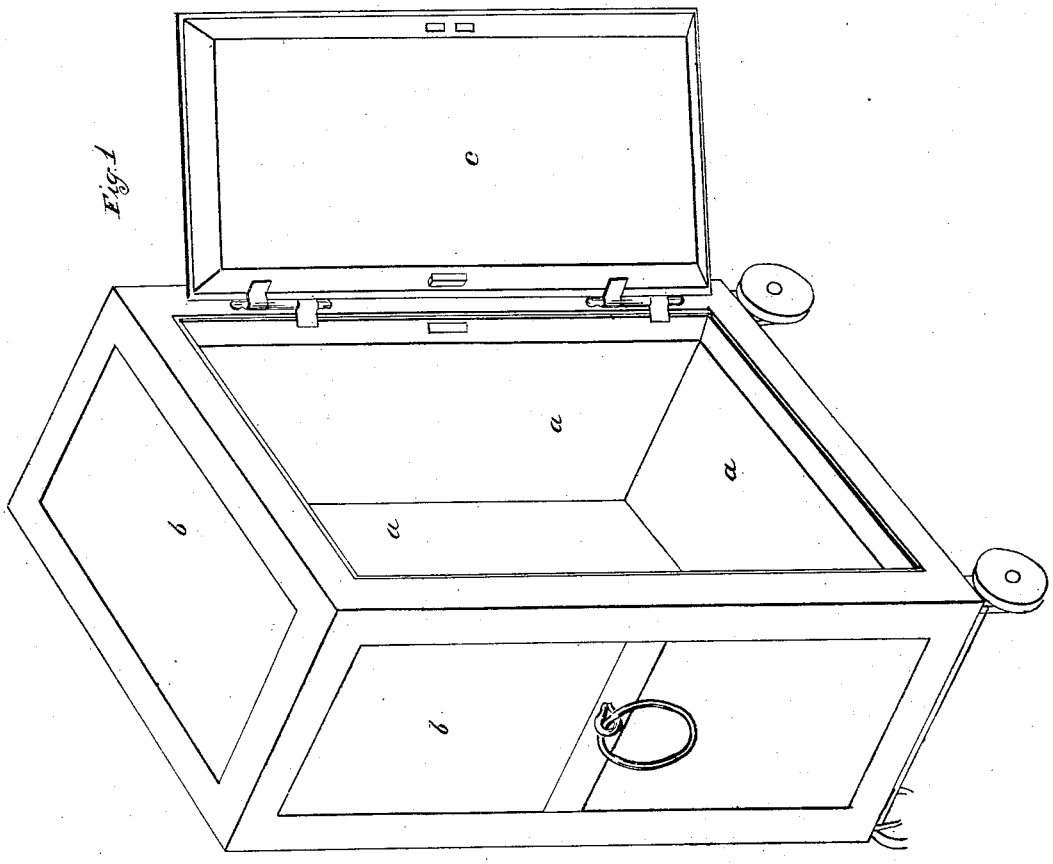


Fig. 1



UNITED STATES PATENT OFFICE.

ED. HALL AND J. L. HALL, OF CINCINNATI, OHIO.

FIREPROOF SAFE.

Specification forming part of Letters Patent No. 6,655, dated August 21, 1849; Reissued December 18, 1849, No. 152.

To all whom it may concern:

Be it known that we, EDWARD HALL and Jos. L. HALL, of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Fireproof Safes, of which the following is a full, clear, and exact description, reference being had to the annexed drawings of the same, making part of this specification, in which—

Figure 1 is a perspective view of the safe, its door being open, and Fig. 2 is a horizontal section the door being shut.

The same letters indicate the same parts in all the figures.

Experience has demonstrated, that the insulating coating of cement which fills the space between the inner and outer casing of fireproof chests, is capable of protecting the contents of the chest from injury by fire, much longer when it consists of a continuous sheet, than when pierced by numerous rivets to connect and bind together the casings, as is the common practice: because the rivets being superior conductors of heat, furnish a medium through which it passes rapidly to the interior. The burglar too, who understands the mechanism of those chests: the inner and outer casings of which are connected by means of through rivets, being armed with a hammer, cold chisel, and punch, can remove the front of a safe with the door and lock attached thereto, in a few minutes—this being a much easier mode of effecting an entrance, than that of picking the lock, or blowing it off with gunpowder.

The object of our invention is to obviate both of these difficulties which exist in the safe, as at present generally constructed, and this object we accomplish in the following manner. The inner chest *a*, outer chest *b*, and door *c* are made in any of the usual modes, and of such size and form as may be required. The inner and outer casings are connected together at the sides of the door, by overlapping flanges, which are riveted together as seen at *d* Fig. 2, leaving a space *e* round the sides, bottom, and top, of sufficient width to receive the insulating coating of cement, which is poured into it in a semifluid state. The metallic connection between the inner and outer casing of both the body of the chest, and the door, may be interrupted by omitting the overlapping flanges shown at *d*. To the interior of the sides, top, and bottom of the outer casing, and to the exterior of the same parts of the inner casing, a quantity of rivets or bolts *m* having large flat heads, are either screwed or riveted, as represented in Fig. 2. The shank with the heads of these rivets project into the space between the cases; so that when the cement is poured in among them, and concretes, they will be firmly embedded therein, whereby the casings will be so effectually interlocked, as to be inseparable by the application of any extraneous force, less than what would rend or break the chest; which being one concrete mass is much stronger than those constructed in the ordinary manner. The heads of the bolts *m* are made broad and flat, to give them a better hold of the cement, and likewise that they may have a broad surface to rest against the cement, which renders them more capable of resisting attempts to punch in their shanks—this resistance being in proportion to the area they rest upon.

We have tried plaster of Paris and various other substances for the insulating material to place between the cases, and the result is decisive in favor of hydraulic lime as well in regard to its nonconducting properties, as its hardness and strength, as a cement; and the latter is by no means an unimportant consideration in the construction of our concrete safe, inasmuch as it directly influences its strength.

Having thus described our improved concrete safe, what we claim therein as new and desire to secure by Letters Patent, is—

1. The manner of joining the interior to the exterior casing by bolts or rivets, embedded in the insulating cement substantially as herein set forth, whereby it is rendered more capable of resisting the action of fire, or external force applied to break it open.

2 We likewise claim the employment, in chests so joined by bolts, of hydraulic cement as the insulating material for fireproof safes or chests, it being stronger when concreted, than other cements, heretofore used for that purpose, and therefore making a safe of superior strength and durability, especially when the same is constructed upon our concrete principle, herein described.

EDWARD HALL.
JOSEPH L. HALL.

Witnesses:
E. SINGER,
JAMES L. SINGER.

[FIRST PRINTED 1913.]