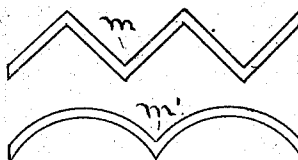
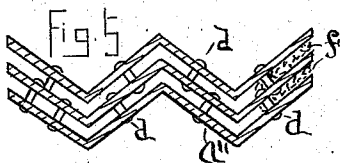
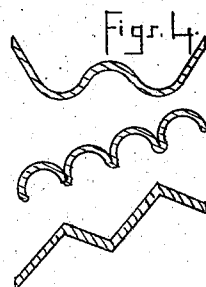
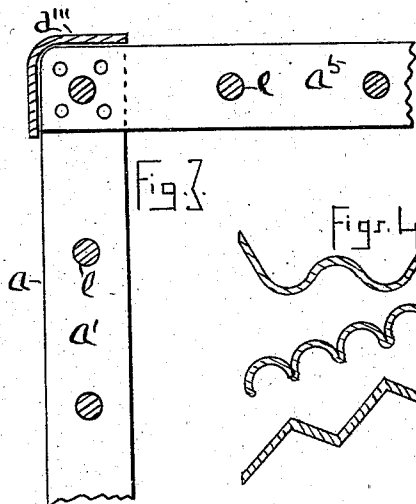
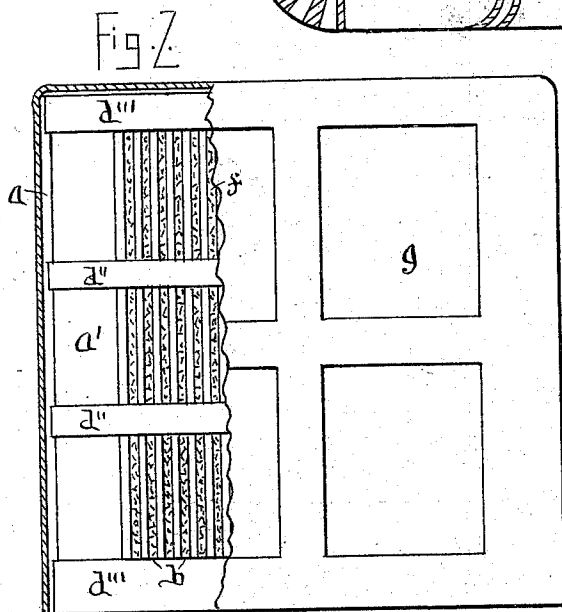
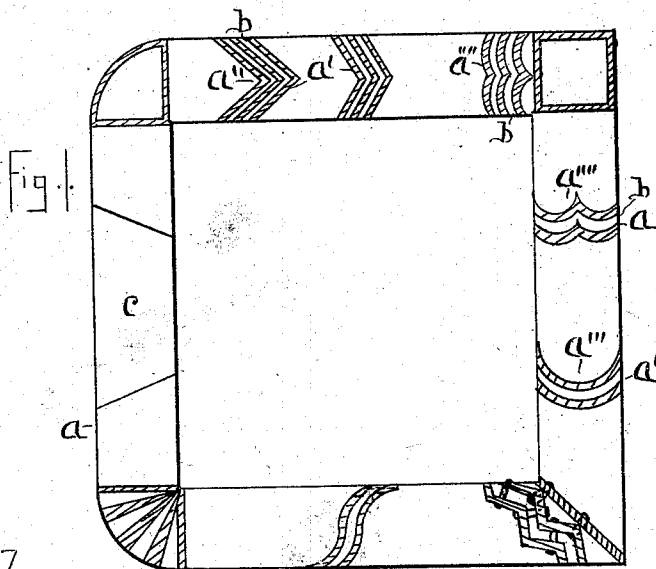


(No Model.)

L. L. TREMAN.
SAFE WALL.

No. 559,112.

Patented Apr. 28, 1896.



Witnesses:

N. L. Hinckley
E. M. Tremain

Inventor:

Lafayette C. Tremain

UNITED STATES PATENT OFFICE.

LAFAYETTE LEPINE TREMAN, OF ITHACA, NEW YORK.

SAFE-WALL.

SPECIFICATION forming part of Letters Patent No. 559,112, dated April 28, 1896.

Application filed November 9, 1895. Serial No. 568,402. (No model.)

To all whom it may concern:

Be it known that I, LAFAYETTE LEPINE TREMAN, a citizen of the United States of America, and a resident of Ithaca, Tompkins county, New York, have invented an Improved Metallic Wall for Bank-Vaults, Safe-Compartments, and Transportation-Chambers for Railways and Like Structures for the Reception of Valuables, of which the following is a specification, reference being had to the accompanying drawings.

In former applications for patents I have set forth the essential feature of my invention, which is the open-work walls of which the safes or compartments are made, sufficiently strong to resist the expansive force of gases of explosives used by burglars or evil-disposed persons, and provided with openings or interstices in them, through which the gases escape without serious injury.

In this application my invention is limited to a certain method of constructing the walls, which consist of metallic plate-bars set transversely across their length, with interspaces, which are the interstices between them, through which the gases of explosives escape freely out of them. These bar-plates are in width the thickness of the walls and are bound to each other by suitable means, and are embossed, corrugated, or otherwise shaped to prevent the introduction of burglars' tools into their interior, the side walls (and when desirable their roofs and floors) being made of these bar-plates, each bar-plate being so shaped that it fits by its curves and prominences the curves, cavities, and projections of the neighboring bars. This, with my invention, will be apparent as I describe and claim my improvement.

Figure 1 is a transverse section of a safe, the section being made a little above the floor of the safe, several varieties of the shapes of plates being shown. Fig. 2 is an elevation of a side of a safe or compartment, a portion of the outside casing being cut away to show the edges of the bar-plates and the intervals between them. Fig. 3 is a side elevation of one of the plates joined by bolts to a roof-plate; Figs. 4, enlarged views of several shapes given the bar-plates out of a very extensive number of such forms that might be shown. Fig. 5 is a view of the manner by which bolts unite

the bar-plates to each other. Figs. 6 are two forms of stay-bars put at intervals between the bar-plates.

In the figures, *a a* are the walls of the safe or compartments, and *a'* the bar-plates with the interstices *b* between them. The plates admit of such shapes as *a''*, which are angularly shaped, and *a'''*, curved, and *a''''*, waved, which sufficiently illustrate the scores of shapes that might be shown. The object of these shapes is to make it difficult, if not impossible, to look into or introduce tools into the safes and yet allow the free escape of the gases of explosives. I confine myself to no one shape, but use in any one safe any one shape desirable, made by corrugation, embossing, or other means of shaping plates. The bar-plates are set transversely across the length of the walls and are securely fastened to each other by any suitable means, such as the bolts or rivets *d*, Fig. 5, or by cross-bars *m*, fastened at intervals between and to the bar-plates, such bars as are shown in Fig. 6, or by binding-bands *d''* and *d'''*, Fig. 2.

The size of the bar-plates vary with the structure to be made. Thus, for example, in a safe whose internal chamber is two feet by three and three feet high they may be made of hardened-iron or steel sheets the thickness of boiler-plates, the thickness of the walls being six or eight inches. In a compartment designed to inclose one or more ordinary or specially-made safes, whose internal dimensions are ten feet wide and fourteen feet long and eight feet high and the walls two feet thick, the cross-section of the plates may be any desirable thickness, and so of other dimensions, the intervals between the plates being suited to the size of the compartment and the stoutness of the plates. In Fig. 1 a doorway *c* is shown, the doors not being indicated; but they are fastened to the bar-plates by any convenient means and the doors made in the usual manner or of my bar-plates.

It will be noticed that the roof-plates *a⁵* of Fig. 3 are bolted to the upright plates, and that with corresponding floor-plates they hold the top and the base and two sides of a structure made after my plan firmly together, but leave the other two sides of the structure detached. I therefore insert in the walls at in-

tervals tie-rods *e*, they passing through the bar-plates of the side walls, roof, and floor-plates and through the top and base binding-plates *d'''*, and thus secure the two sides just
 5 named and the whole structure together. By these rods, and the bolts or rivets *d*, beginning at one place, bar-plate after bar-plate are added to each other, until the structure is completed, and since rectangular safes have
 10 had various appliances to hold their corners and roof and floors to each other I use, when desirable, these or other well-known means of uniting the structures together.

To defend, when desirable, the contents of
 15 the safe or compartment from fire, I put into the spaces or intervals between the bar-plates asbestos or flocculent glass-wool or other suitable incombustible material *f*, Figs. 2 and 5, packing it or filling it in the outer edges or
 20 through the whole length of the interspace in such a manner that the gases of explosives will easily blow it out of the intervals, yet it shall act as fireproof packing.

To the outside and, when desirable, to the
 25 inside of the safe or compartment I attach casings or coverings *g* for the purpose of excluding dust or other substances and to give them the ordinary appearance of safes, rooms, and compartments, the casings being made of
 30 papier-mâché or other light and easily-blown-away materials; and to the roofs of the structures named I attach ceilings and I use floorings that the explosives easily blow out between the plate-bars. The embossing of the
 35 bar-plates may be made so that the rounded or projecting portions made at intervals on side of a plate shall fit the cavities made at suitable corresponding intervals in the adjoining plates, and they stiffen the walls.

The bar-plates may be set obliquely across
 40 the thickness of the walls, and they may be set inclined or in other ways, instead of perpendicularly, as illustrated, and special corner-pieces, such as illustrated in Fig. 1, may
 45 be used, and like variations are consistent with my method of making the described walls. Double or triple walls with spaces between them may be made, in which case, the walls being set at angles with each other, the
 50 bar-plates may be plain, and in structures where thought desirable the bar-plates may be plain or without corrugations.

In Figs. 6 two stay-bars *m m'* are indicated, they being designed to be put at intervals in
 55 between the bar-plates. They are shaped as required by the shape of the bar-plates adopted in the structure to be made, whether angular, curved, or any other shape. When put in, they preferably rest on the bolts *d*,
 60 and when these are tightened they clamp se-

curely these stay-bars, the angles or curves enabling them to stiffen the walls.

Everything else being believed to be apparent, what I claim is—

1. In the described walls for safes, bank- 65 compartments, railway transportation-chambers, and like structures, for safe keeping of valuables; the described metallic wall, consisting of corrugated, embossed or similar-shaped bar-plates, set transversely to the 70 length of their walls, there being open spaces or intervals between the bar-plates for the escape of the gases of explosives, used by burglars or evil-minded persons; as set forth.

2. In combination with the described safes, 75 compartments whose walls are made of corrugated, embossed, or other suitably-shaped plates, set transversely across the length of their walls, and with interstices between the bar-plates, for the escape of the gases of ex- 80 plosives through them; the described incombustible packing placed in the intervals between the plates, as and for the purpose set forth.

3. In combination with the described 85 vaults, safes and like structures, made of the bar-plates, set transversely to the length of their walls, with intervals between them for the escape of the gases of explosives through them; the casings *g*, made of light fragile ma- 90 terial as and for the purpose set forth.

4. In the described safes and like structures made of plate-bars set transversely to the 95 length of the walls and with interspaces between them for the escape of the gases of explosives, the bands put at intervals in their lengths about the outside of the bar-plates, substantially as described.

5. In the described safes and like structures, whose walls consist of bar-plates, set 100 transversely to the walls; and with interspaces between them for the escape of the gases of explosives; the intermediate transverse stay-plates, shaped to suit the form of the corrugations of the bar-plates, of which 10 the walls are constructed, and fixed at intervals, between the plates, as set forth.

6. In the described safes and like structures, whose walls consist of bar-plates set 110 transversely to the walls, and with interspaces between them, for the escape of the gases of explosives; the rods *e*, which transfix, at intervals, the several plates; and thereby stiffen the walls, and bind the several plates of the walls to each other, as set forth.

LAFAYETTE LEPINE TREMAN.

Witnesses:

H. L. HINCKLEY,

E. M. TREMAN.