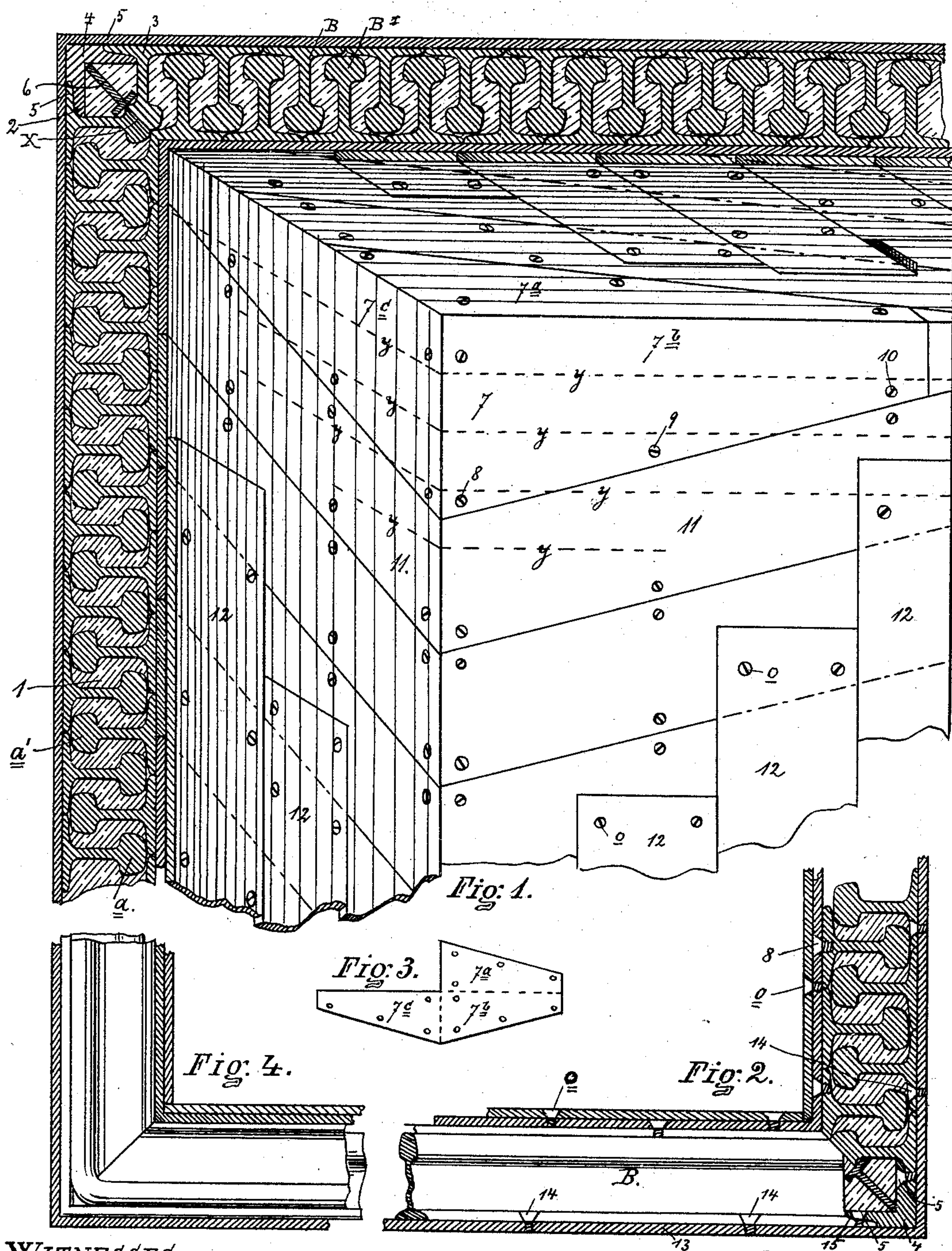


(No Model.)

C. O. YALE.
SAFE.

No. 488,803.

Patented Dec. 27, 1892.



WITNESSES.
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Application filed March 25, 1892. Serial No. 426,354. (No model.)

To all whom it may concern:

Be it known that I, CHARLES O. YALE, of the city, county, and State of New York, have invented certain new and useful Improvements in Burglar-Proof Safes; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form part of this specification.

My present invention relates to improvements in burglarproof vaults, and more particularly to that class of vaults which are formed of railroad iron, although this particular form of iron is not essential.

Similar letters and numerals of reference refer to the same parts in the several figures.

Figure 1 shows in perspective, the inside upper corner of a vault constructed according to my plan and illustrating the present improvements. The figure also shows a cross section of a portion of the top and side of the vault. Fig. 2 shows a section of the wall and top or bottom (the construction being the same) taken on a line at right angles to the lines on which the section portion of Fig. 1 is taken. The line on which the section is taken follows the contour of the rails through the top or bottom, as the case may be. Fig. 3 shows on a smaller scale, a blank from which a corner piece, illustrated in Fig. 1 is formed, the blank being bent at right angles on the dotted line to form the corner pieces. Fig. 4 shows a horizontal section of a corner of the vault, the section line following the contour of the rail through the wall showing the rail in plan view from the side.

Referring more specifically to the reference letters and numerals marked on the drawings, A and A' indicate the rails of which the side walls are formed, having the webs of the rails toward the outside and inside of the walls respectively.

B, and B' are the rails of which the top is formed having the web portion of the rail to the outside and inside of the vault respectively. The vault may be built with its side walls starting directly from a suitable foundation, or the vault may be provided with a bot-

tom constructed in the same manner as the top, therefore the description will be made of the top only. The side walls are constructed with rails A, and A' which are laid up with the heads of the rails projecting alternatively in opposite directions, the rails being bent at the corners, or angles of the vault, as shown in Fig. 4 thus forming a strong corner without joints in the horizontal plane of the vault. The rails of the walls are laid up with cement or some suitable composition or material as illustrated in the open section lines at 1 which completely fills all the spaces between the rails. The roof of the vault is formed similarly to the side walls by like rails having their heads projecting in alternately opposite directions and having intervening spaces filled with cement, as described with reference to the walls. The rails 2 and 3 adjacent to the corner of the vault have their heads lying inward and the web to the outside and the heads are mitered as shown at x forming a complete joint.

Between the webs of the rails 2 and 3 is provided an angular corner piece 4 which is provided with webs extending to the rails 2 and 3 respectively, and adapted to engage on the inner face of the web of the rails and preferably conform in shape thereto. The flange or web of the corner piece is secured to the flange or web of the rail by screws inserted from the inside as shown at 5 (Fig. 2).

Between the angle of the corner piece 4 and the mitered heads of the rails 2 and 3 is introduced a T-shaped bracing rail 6, the web of which engages in the angle of the corner piece and the head on the sides of the heads of the rails 2 and 3.

On the inside corner formed by two adjacent sides and the top of the vault, is provided an angular bracing plate 7 which consists of the portions 7^a, 7^b, and 7^c bent to form a corner and one of which parts lies on the ceiling or top, one on one of the walls, and the other on the other wall. The portions 7^a, 7^b and 7^c of the corner piece are cut preferably on the diagonal and are wide enough at the ends adjacent to the corners to engage three of the rails A', A' or B' B', as will be observed from the dotted lines y, y in Fig. 1, which show the sides of the rails A' and are secured to the rails by screws 8, 9 and 10. The angular

bracing plate 7 forms a portion of the first layer of lining which is continued by plates as 11, 11 which may be placed diagonally on the sides of the vault or horizontally or vertically, as may seem best. Over the first layer of plates may be provided an inner layer composed of plates as 12, 12 which are preferably made to run crosswise, or substantially so, of the other layer. The layer of plates 11 is secured to the rails by screws extending from the inside of the vault outward and the plates 12 are secured to the plates 11 by screws extending from the inside outward. On the outside of the vault is provided one or more layers of plates, preferably of iron or steel welded, as shown at 13, which plates or covering are preferably bent at the corners and are secured to the rails forming the body of the walls, by screws as 14, 14 inserted through openings in the flanges of the rails A' and B' and engaging from the inside in screw-threaded openings in the plates.

These several courses of laminated plates may be provided on the outside of the vault as well as on the inside.

Around the whole vault is preferably constructed a covering of masonry in the usual manner. That portion of the wall of the vault which engages on the ends of the rails B and B' forming the top of the vault is fitted thereto by having the ends of the rails B and B' cut with a projecting lip as shown at 15 (Fig. 2), to adapt the rail to engage with the corner piece 4. It will be observed that the alternate rails A and A' of the sides and B and B' of the top do not extend through from the plating of the inside to the plating of the outside but that the heads of the rails interlock and are so held by the cement filling the interstices between the heads and webs of the rails.

What I claim as new and desire to secure by Letters Patent, is;—

1. The combination in a safe vault having the walls thereof formed of bent headed in-

terlocking T-shaped rails, of the corner rails thereof having the inwardly projecting heads contiguous to and adapted to engage each other, an outside corner or truss piece having projecting webs adapted to engage and be secured to the web of the rails, a bracing piece between the angle of the corner piece and the heads of the corner rails and inside corner plate having three integral portions adapted to engage two or more of the rails of the three adjacent sides to the corner and forming a portion of the inside casing and the outside casing, the outside and inside casings being secured to the compiled rails by screws introduced from the inside through the web of the rails and through the casings, substantially as set forth.

2. The combination in a safe vault formed of interlocking metal rails having the heads of the rails adjacent to the corners engaging each other, an angular truss corner piece having its webs conforming in outline to and engaging on the inner surface of the webs of the corner rails and secured thereto and a bracing piece introduced between the engaging heads of the corner rails and the truss corner piece, substantially as set forth.

3. The combination in a safe vault having its walls composed of compiled rails of an inside corner piece formed of one sheet of metal and having three tapering portions bent to engage the three adjacent walls of the corners and secured to the rails and forming a portion of the inside casing composed of plate or sheets fitting onto the tapering wings or portions of the corner piece and secured to the compiled rails, substantially as set forth.

In witness whereof I have affixed my signature in presence of two witnesses.

CHARLES O. YALE.

Witnesses:

JONATHAN MARSHALL,
JOHN H. AMES.