(No Model.)

# O. E. CONVERSE.

## SAFE.

No. 604,894. Patented May 31, 1898.

Fig. 1.

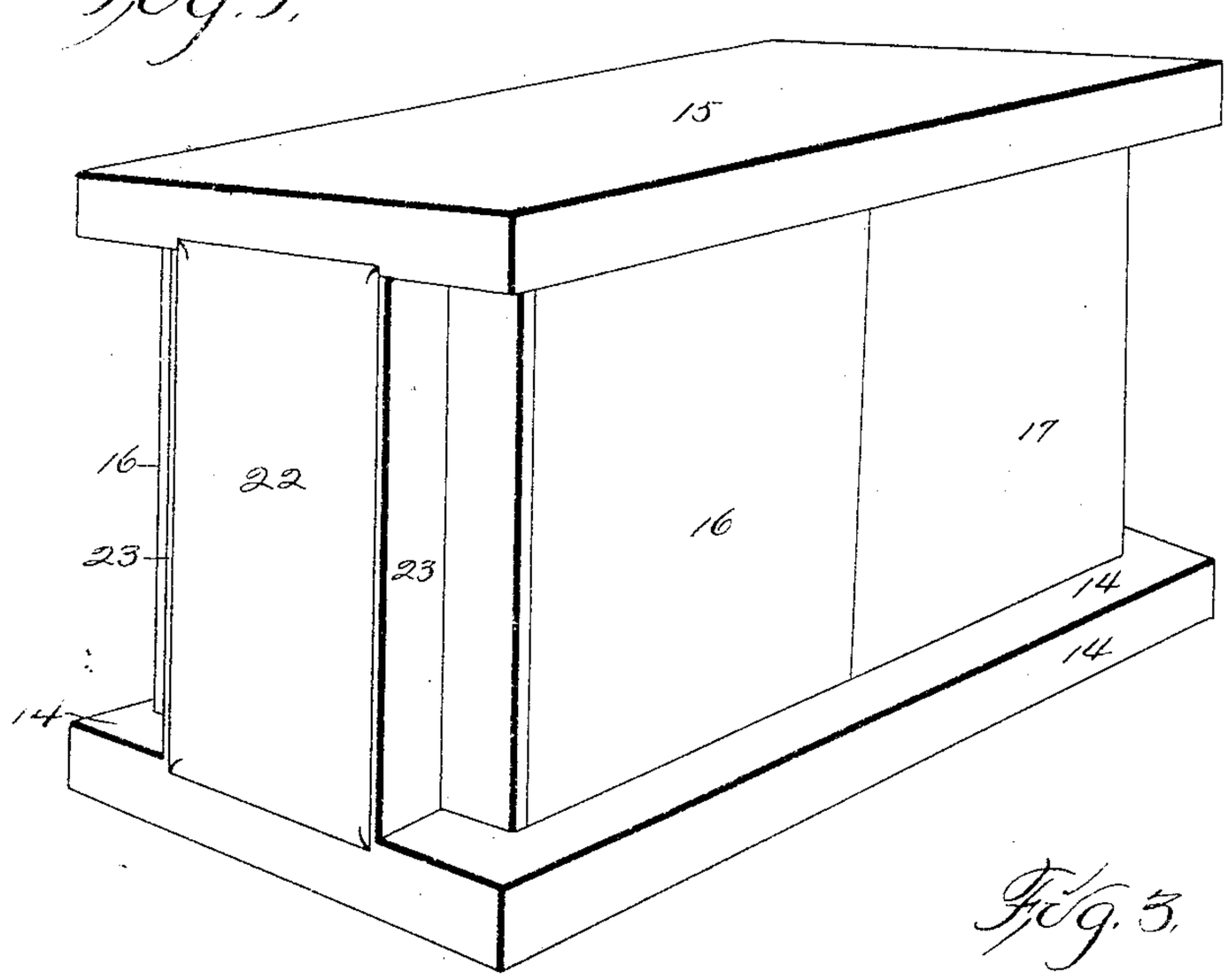
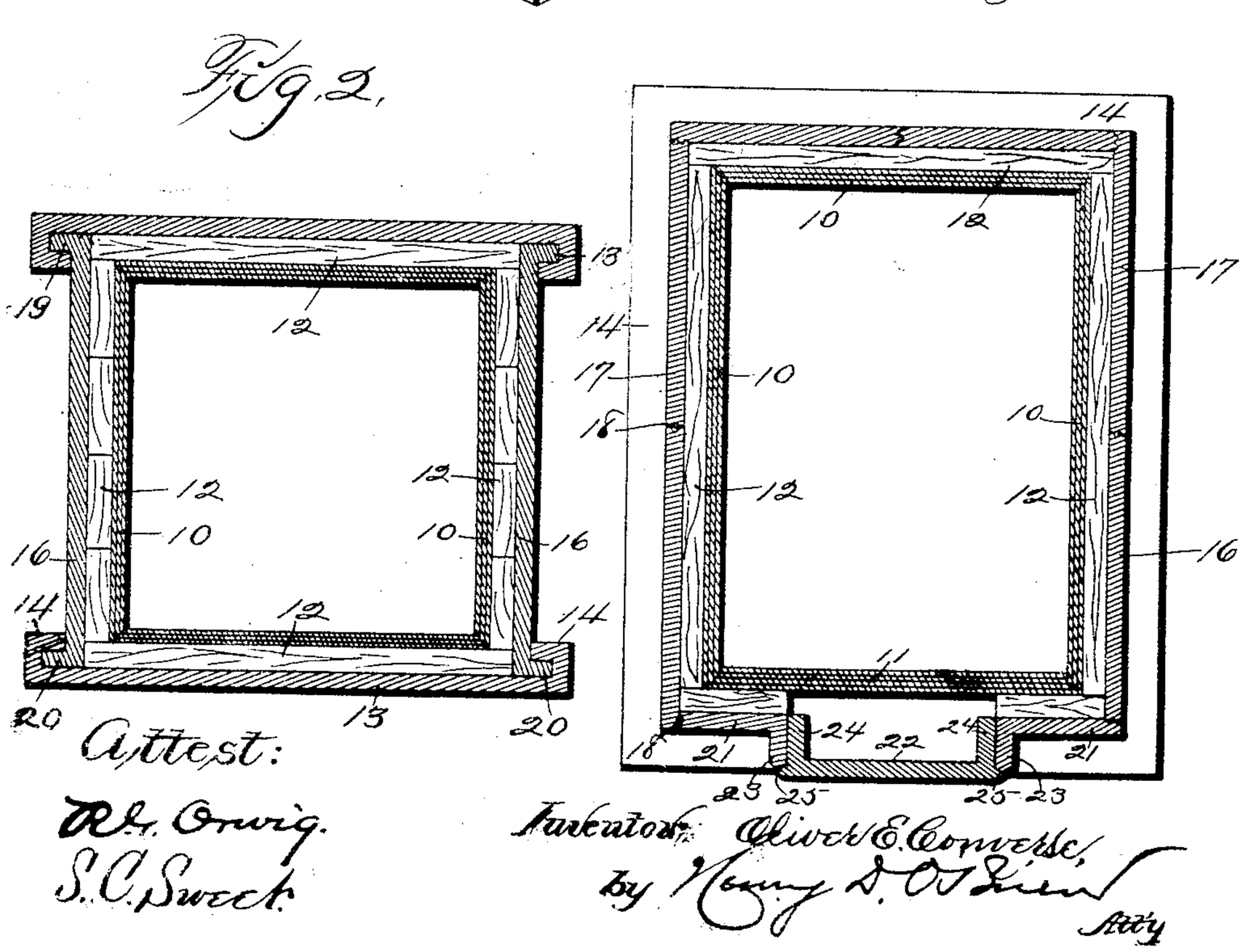



Fig. 5.

Fig. 2.

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# UNITED STATES PATENT OFFICE.

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## SAFE.

SPECIFICATION forming part of Letters Patent No. 604,894, dated May 31, 1898.

Application filed April 12, 1897. Serial No. 631,703. (No model.)

*To all whom it may concern:*

Be it known that I, OLIVER E. CONVERSE, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Safes; and I do declare the following to be a full, clear, and exact description of the invention, such as 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 figures of reference marked thereon, which form a part of this specification.

The object of this invention is to provide an improved construction for money-vaults whereby the same will to a maximum degree be proof against attack from the exterior or interior by either projectiles, electrical appliances, drills, wedges, or explosives.

My invention consists in the construction of a safe or vault having an independent outer casing constructed of "harveyized" or "nickel" steel or other specially-prepared steel known as "armor-plate" and composed of a top and bottom, respectively, formed of a single piece of armor-plate, sides and ends built up of sections of armor-plate and interlocking with flanges on the top and bottom pieces, and the combination, with said casing, of a suitable lining and interior fittings.

My invention consists, further, in the construction, arrangement, and combination of elements hereinafter set forth, pointed out in my claims, and illustrated by the accompanying drawings, in which—

Figure 1 is a perspective of one of my complete vaults. Fig. 2 is a sectional elevation transversely of the vault. Fig. 3 is a sectional plan of the vault.

In the construction of the vault as shown the numeral 10 designates a steel lining or safe laminated in a common manner and provided with a door portion 11 in one end.

The outer casing comprises a bottom 13, forged or otherwise made of a single piece of steel substance and provided with a marginal flange 14 at right angles to the faces of the bottom, the marginal flange being bent or turned inwardly into a plane parallel with the surfaces of the bottom. The top of the vault is identical with the bottom and is inverted relative thereto, being provided with a downwardly-extending marginal flange inturned parallel with the flange 14. The top portion 15 of the vault-casing is located at such an elevation relative to the bottom 13 as to make allowance for the height of the device or room and the sides are mounted therein. The sides of the casing are formed of one or more sections 16 17, which may be tongued and grooved together or double grooved and provided with a rod 18 in said grooves, as shown in Fig. 3. The sections 16 17 are formed with marginal top and bottom flanges 19 20, arranged and so shaped as to enter the spaces between the surfaces of the top and bottom portions of the marginal flanges. The end portions of the vault-casings are formed with top and bottom marginal flanges fitting within the inturned portions of the end flanges of the top and bottom portions. The end portion 21 of the casing is provided with a separate door portion 22. The door-opening in the end 21 is surrounded by an outturned flange 23, and the outer edge of said flange is rounded. The door portion 22 is formed with an inturned marginal flange 24, fitting snugly within the door-opening and between the flanges 23, and a marginal shoulder 25, having a curved inner face, extends from a point of integral jointure to the door over the curved edges of the flanges 23, and the door portion 22, supported and operated on crane, cam, or traverse hinges in an ordinary manner, is secured when closed by boltwork upon the inside, operated by an ordinary automatic device in use for such purpose. The end portions of the casing may be tongued and grooved to the side sections or jointed thereto by grooves and a rod. The different portions of this steel casing or structure are not rigidly connected, but are removable and replaceable, and to sustain the same in position against inward collapse of the sides and ends and to attain the highest degree of efficiency in the construction of the vault, as shown, the said casing is backed on the inside by a complete lining of timbers or planking 12, fitting snugly all around, sustaining the various sections of the outer casing in position, affording the necessary resilience in the event of an attack by projectiles and serving as a circuit-breaker to protect the inner lining of iron or laminated steel 10 from attack by electrical cur-

rents or appliances, the inner lining of iron or laminated steel 10 being built within and fitted closely to the intermediate planking, as shown, so as to rigidly brace and strengthen the entire structure.

The safe or vault is built up by first positioning and leveling the bottom piece 13, then elevating and sustaining by temporary scaffolding or otherwise the top piece 15, then inserting the front end piece, for instance, between the top and bottom pieces and moving the same outwardly relative thereto until its flanges engage within the flanges of the top and bottom pieces, then inserting the rear end piece or pieces in like manner, then inserting one set of side pieces with their meeting edges spaced inwardly from the flanges of the top and bottom pieces and crowding the same outwardly until the side assumes a plane positioning and the margins thereof properly seat in contact with the adjacent marginal portions of the end pieces, and then inserting the remaining side pieces in like manner. The side and end pieces are first positioned vertically between the top and bottom pieces within the spaces inclosed by the flanges thereof and are moved outwardly into the desired planes, whereby the flanges thereof engage the flanges of the top and bottom pieces, as illustrated. If the vault or safe be of large size, it will be necessary to move, position, and operate the pieces or sections by means of cranes or derricks and crowd them into position by jack-screws or similar mechanism for the handling of heavy objects. The lining is then built up within the side and end pieces and nailed, bolted, or otherwise rigidly constructed and the safe or interior metal chamber built up and constructed within the lining in the manner now common and well known of building laminated safes.

I claim as my invention—

1. A safe or vault composed of a bottom formed of a single piece of armor-plate provided with upwardly and inwardly extending marginal flanges, a top formed of a single piece of armor-plate provided with downwardly and inwardly extending marginal flanges, sides and ends built up of sections of armor-plate provided with outwardly-extending flanges at their top and bottom margins fitting within the flanges of the top and bottom pieces and a lining located within the space inclosed by the top, bottom, side and end pieces whereby the casing is restrained against inward collapse.

2. A vault comprising an outer casing composed of a bottom formed of a single piece of armor-plate provided with upwardly and inwardly extending marginal flanges, a top formed of a single piece of armor-plate provided with downwardly and inwardly extending marginal flanges, and sides and ends formed of pieces of armor-plate provided with outwardly-extending flanges at their top and bottom margins fitting within the flanges of the top and bottom pieces, the meeting edges of the side and end pieces being tongued and grooved respectively.

3. A vault comprising a casing built up and composed of a bottom formed of a single piece of armor-plate provided with upwardly and inwardly extending marginal flanges, a top formed of a single piece of armor-plate provided with downwardly and inwardly extending marginal flanges, sides and ends formed of pieces of armor-plate provided with outwardly-extending flanges at their top and bottom margins fitting within the flanges of the top and bottom pieces, the meeting edges of the side and end pieces being tongued and grooved respectively, in combination with a lining mounted within the casing whereby the side and end pieces are restrained against inward movement or collapse.

4. In a safe or vault a side piece having a door-opening and formed with a curved or rounded face on the jambs of said opening, and a door formed with a marginal shoulder having a curved inner face fitting closely to the corresponding curved jambs of the end or side piece.

5. A safe or vault composed of a bottom formed of a single piece of armor-plate provided with marginal flanges, a top formed of a single piece of armor-plate provided with marginal flanges, sides and ends built up of sections of armor-plate and engaging the top and bottom pieces at their top and bottom margins within and interlocking the marginal flanges thereof, and a lining located within the space inclosed by the top, bottom, side and end pieces, whereby the casing is restrained against inward collapse.

In testimony whereof I affix my signature in presence of two witnesses.

OLIVER E. CONVERSE.

Witnesses:
IGNATIA WIEGREFFE,
ANNA SCHOEPF.