

(No Model.)

2 Sheets—Sheet 1.

A. S. WILEY.
VAULT OR STRONG ROOM.

No. 424,664.

Patented Apr. 1, 1890.

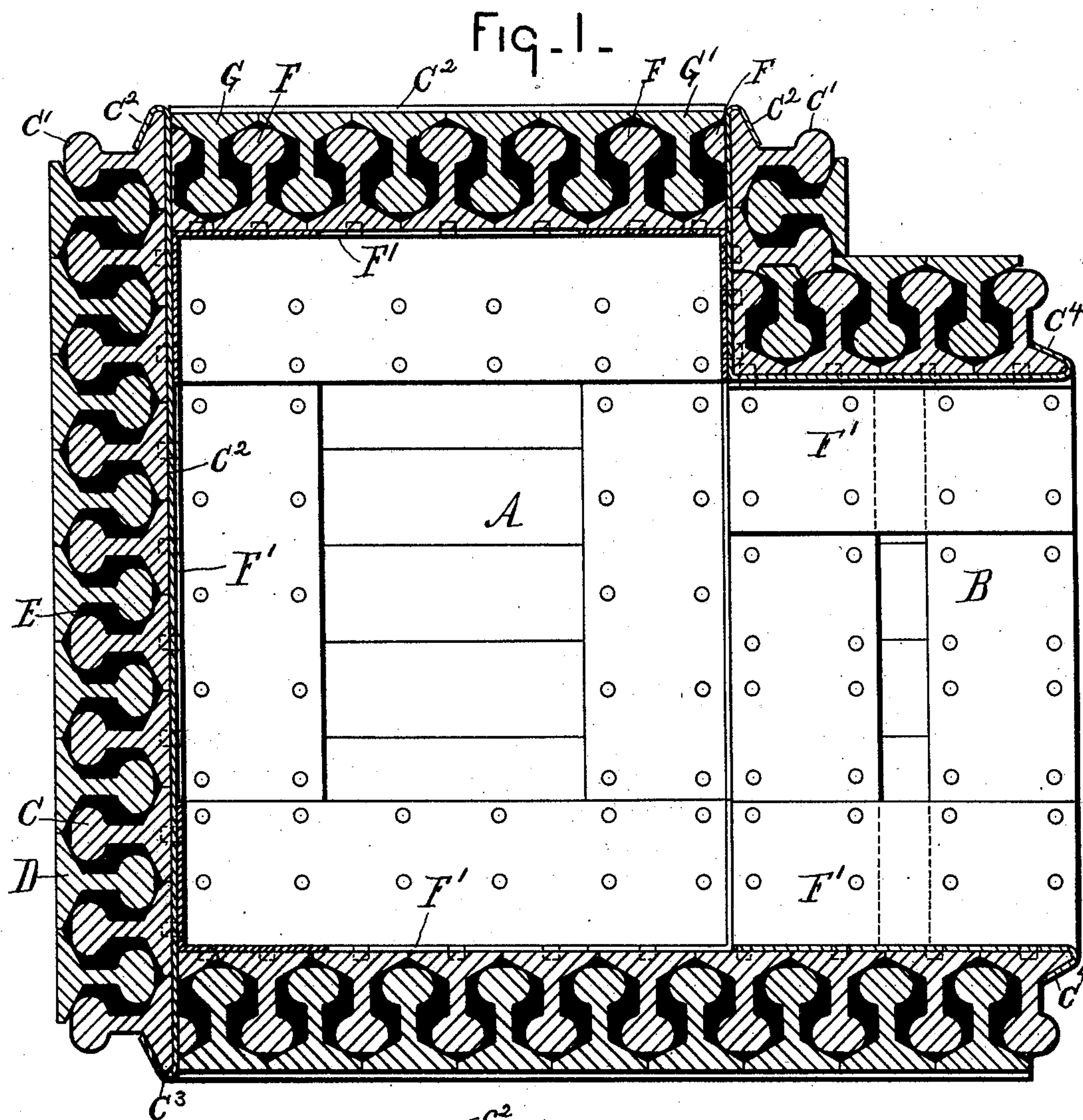
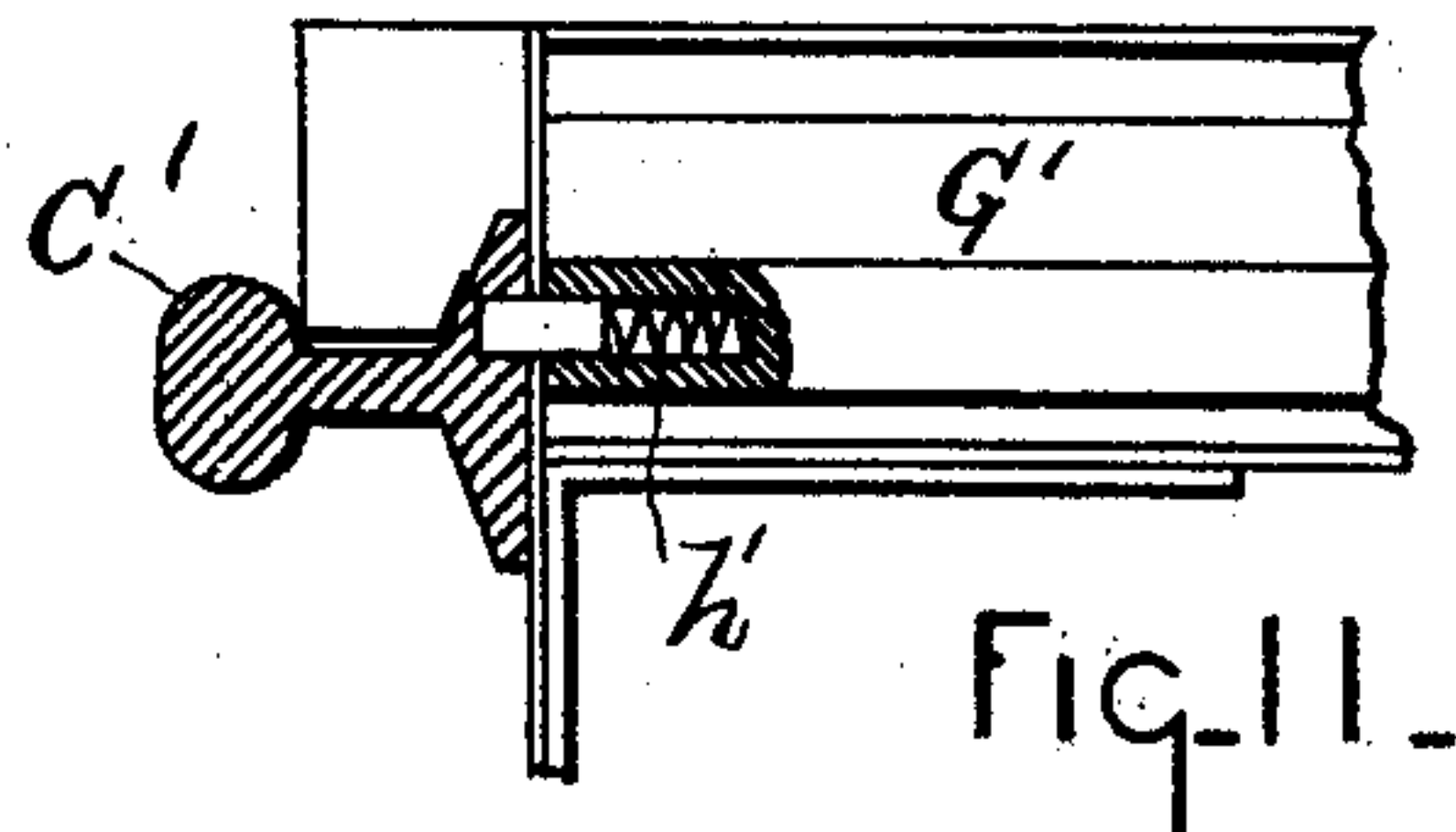
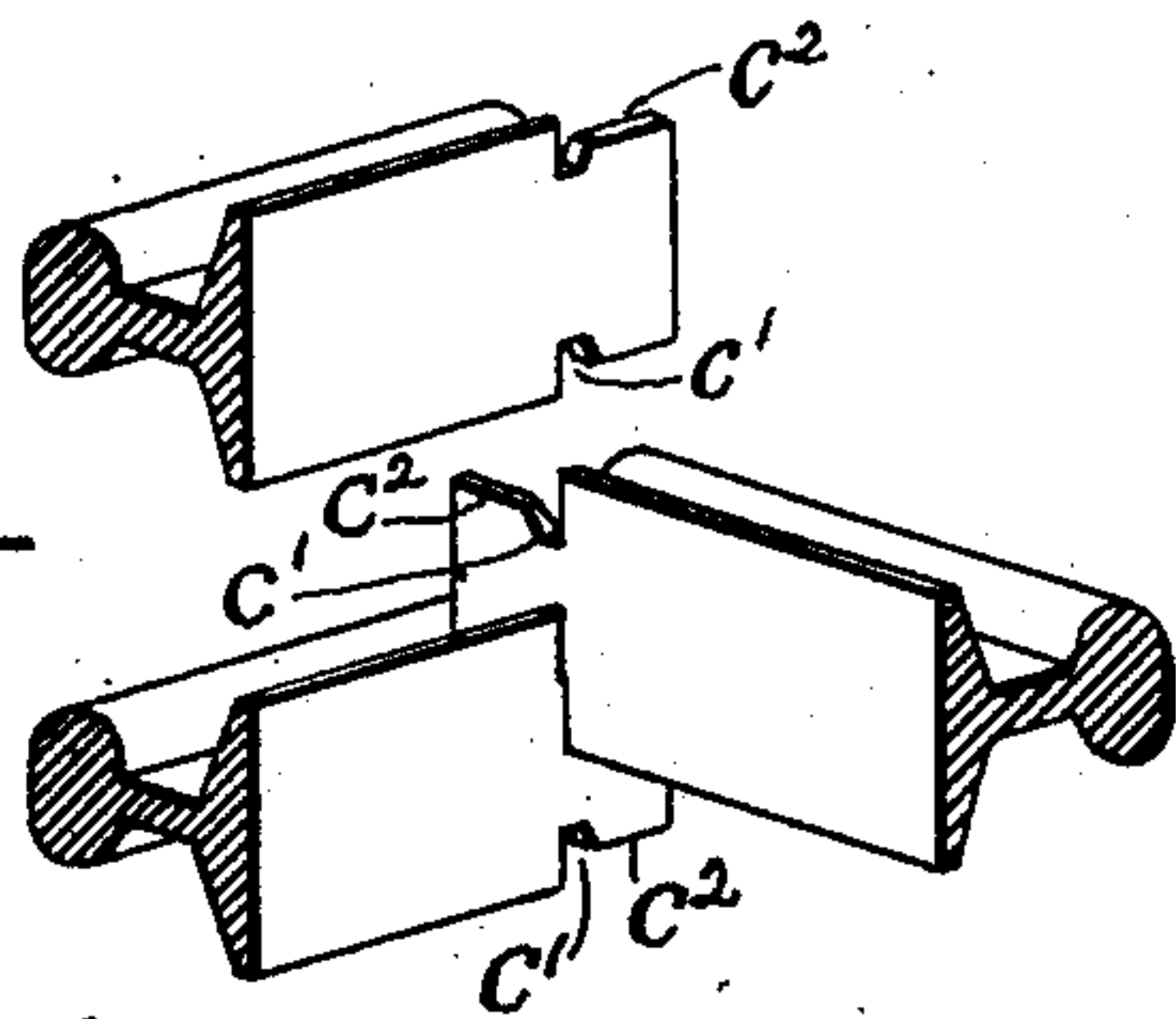


Fig. 10-



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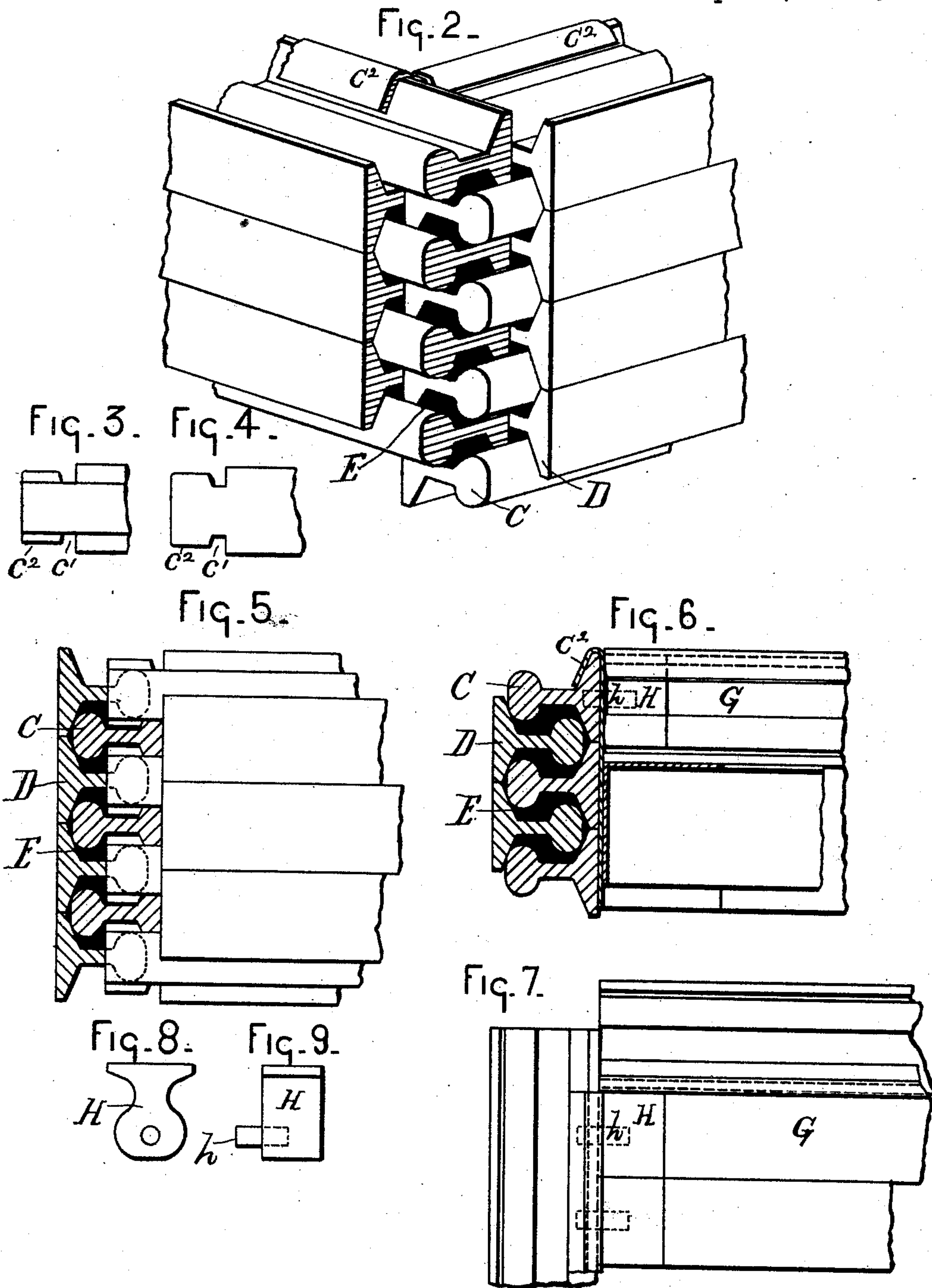
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2 Sheets—Sheet 2.

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VAULT OR STRONG ROOM.

No. 424,664.

Patented Apr. 1, 1890.



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UNITED STATES PATENT OFFICE.

ABRAHAM S. WILEY, OF DETROIT, MICHIGAN.

VAULT OR STRONG ROOM.

SPECIFICATION forming part of Letters Patent No. 424,664, dated April 1, 1890.

Application filed December 14, 1889. Serial No. 333,723. (No model.)

To all whom it may concern:

Be it known that I, ABRAHAM S. WILEY, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in the Construction of Vaults and Strong Rooms; and I 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 pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

In the drawings, Figure 1 represents a section by a vertical plane passed centrally from front to rear of the vault. Fig. 2 is a perspective view showing the arrangement of the rails at the corner of the vault. Fig. 3 is a plan view looking down on the end of one of the rails, showing how it is dressed away at its extremity to make the joint. Fig. 4 is the same, viewed from the under side of the flange. Fig. 5 is a side elevation of the construction shown in Fig. 2. Fig. 6 is a sectional view illustrating how the top rails are joined with the end rails or side rails of the vault. Fig. 7 is a plan view of the construction shown in Fig. 6. Figs. 8 and 9 are front and side elevations of the filling-blocks and their dowels. Fig. 10 is a view illustrating how the meeting rails are locked at the corners. Fig. 11 shows how the last rail is put in from the top and secured by a spring dowel-pin.

It is the purpose of my invention to improve the construction of vaults or strong rooms where the same are walled with railway-iron or equivalent iron or steel bars, the prime object being to produce a structure which shall be practically proof against the tools of a burglar or cracksman within the period during which such a party would have to work; and my invention consists, essentially, in a peculiar construction and arrangement of the rails, whereby they are each locked to the adjacent rail by the material of the rails themselves, as well as by connecting-plates of metal.

In carrying out my invention, A in Fig. 1 represents the body of the vault or strong room, and B its door-space. The upright sides and ends of the vault are each formed of two tiers of rails arranged horizontally, each alternate rail turned with its head in a direction

opposite to that of the adjacent rails, as indicated by the letters C and D in the different drawings, and the spaces are filled in with hydraulic cement or other similar filling material, as shown by the heavy black portions in the different figures at E. Each of the interior rails C has the flange notched at c' and dressed away at c^2 , as shown in Figs. 3 and 4, so as to be locked to the inner rails of the series which crosses them at right angles, as shown in Fig. 10. That portion c^2 is shaped to fit between the webs of the two adjacent rails, between which it projects, while the notches c' engage with corresponding notches on the crossing-rails, so that these crossing-rails may in each series lie edge to edge, as indicated in Fig. 10.

F and G represent the corresponding rails, which constitute the top of the vault. These rails are ranged in like manner as the side rails. Those adjacent to the interior of the safe are riveted or bolted to a plate F'. As they are put into place, however, there is first placed one rail F. Then there is inserted at each end one of the blocks H, (shown in Fig. 8,) with its dowel-pin h entering the base of the adjacent rail C, as shown in Fig. 6. Then a rail G is inserted, as shown in Figs. 6 and 7. Then another rail F is fastened in place, followed by another series of blocks H and another rail G until the top of the vault is complete down to the last rail G'. It is apparent that this rail cannot be inserted as the other rails G were inserted. Its head is therefore dressed away, as in Fig. 1, so that it may be inserted directly down between the heads of the two adjacent rails F. It may then at its ends be locked to the top rail C' by a dowel-pin, as shown in Fig. 11. The dowel-hole in the end of the rail is in this case made sufficiently deep to permit of a spiral spring h' being located back of it, the purpose being to force the dowel-pin entirely into the hole when the rail is being inserted in place. Then, when the rail is in position, the dowel-pin is permitted to shoot out under the action of the spring into the corresponding hole in the rail C', thus locking this last rail G' firmly into its place. The interstices are then filled with hydraulic cement, the same as the interstices at the sides of the vault. The bottom of the vault may be made in like manner. These

blocks H are preferably made to fit snugly the space between the adjacent rails, and so add greatly to the strength and rigidity of the structure. The dowel-pins also, which enter the top side rail C', add greatly to the strength of the structure at this point in guarding effectually against the liability of removing the said side rail C'. As a further precaution against the removal of the said top and bottom side rails, a plate C² passes up and down upon the interior of the vault and is clamped over the flanges of the said end rails, as shown in Figs. 1, 2, and 6. Similar plates C² engage the flange of the top rails C', that extend along the other sides of the vault. Similar plates C³ and C⁴ engage the outer rails at the bottom of the vault and about the door.

It is apparent that in a construction of this character it is impossible to gain access to the vault or to open it up at the corners, except by starting at the top rails and removing rail by rail, while the safeguards provided to prevent the removal of the top rails are such as to effectually prevent their being stripped or removed, except by the expenditure of labor and time more than a cracksman would have in which to operate. Moreover, each rail is locked to the adjacent rails by being notched thereto, so that in the attempt to strip any rail is resisted by the adjacent rails. The same principle of construction might be followed by arranging the side walls so that the rails should stand vertically instead of horizontally, and the rails be locked at their points of intersection in the same manner.

What I claim is—

1. A vault or strong room the walls of which are composed of railway-rails or similar bars

arranged in reverse order alternately in each wall, the rails constituting one wall locked to the meeting rails of the adjacent walls by notching the successive rails of one wall with the rails of the other wall, substantially as and for the purposes described.

2. A vault or strong room the walls of which are composed of railway-rails or similar bars, four of said walls formed of rails lying in continuation of each other and locked together by notched engagement at their points of intersection, the remaining walls formed of rails extending between the interiors of two opposite walls and locked thereto by blocks and dowels H h, substantially as and for the purposes described.

3. A vault or strong room composed of rails C D, locked with meeting rails in the contiguous walls, in combination with rails F G and doweled blocks H h, and in connection therewith plates riveted or bolted to the rails upon the interior of the vault or strong room and bent over the flange of the extreme outer rails, substantially as and for the purposes described.

4. The combination, with the rail G', adapted to be entered between the heads of the two adjacent rails, of the dowel-pin h and spring h', whereby the rail may be inserted into place and the dowel be sprung into its seat, substantially as and for the purposes described.

In testimony whereof I sign this specification in the presence of two witnesses.

ABRAHAM S. WILEY.

Witnesses:

W. H. CHAMBERLIN,
MARION A. REEVE.