

No. 797,963.

PATENTED AUG. 22, 1905.

F. KALWEIT.
BUILDING CONSTRUCTION.
APPLICATION FILED JAN. 24, 1903.

2 SHEETS—SHEET 1.

Fig. 1.

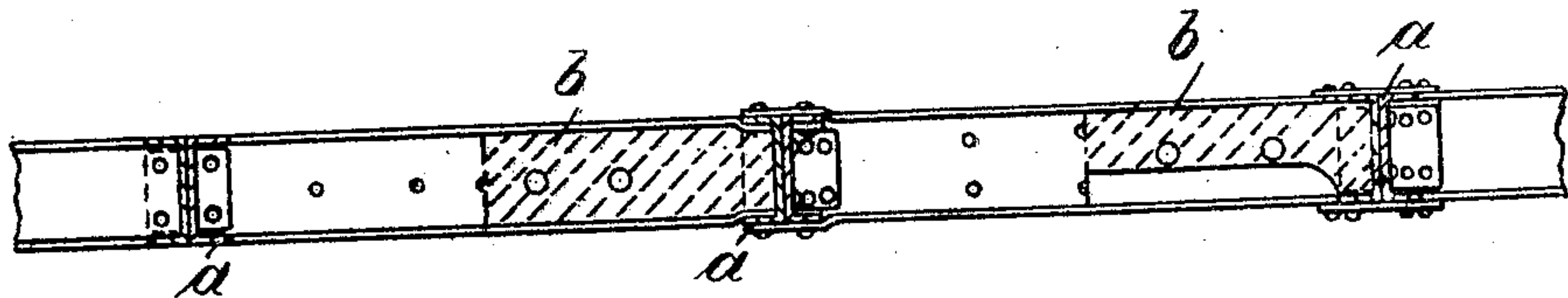


Fig. 2.

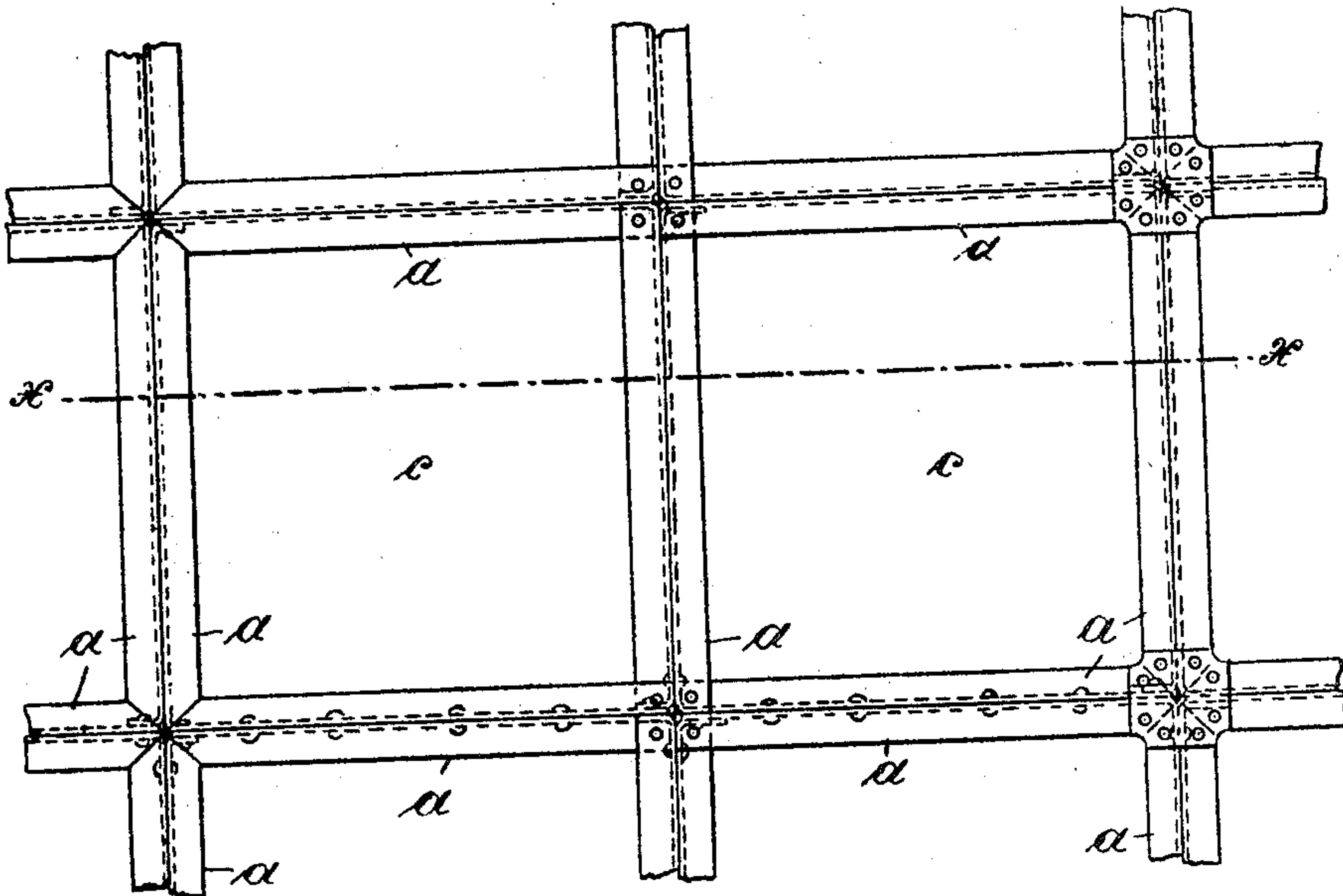
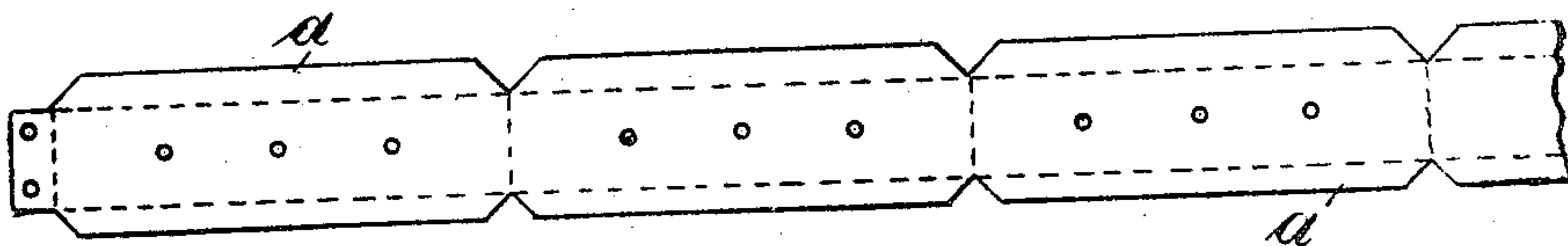


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 4.

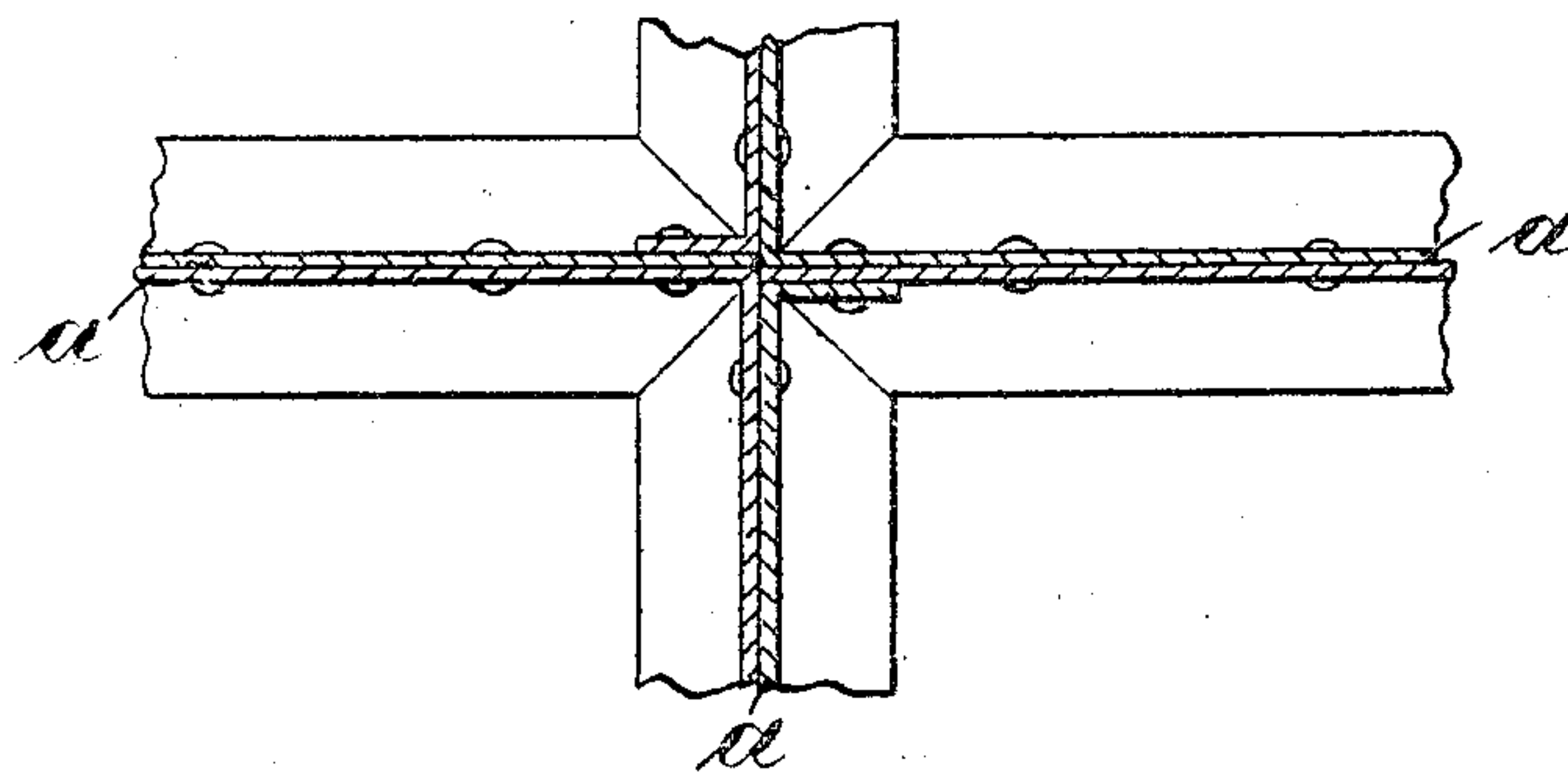


Fig. 5.

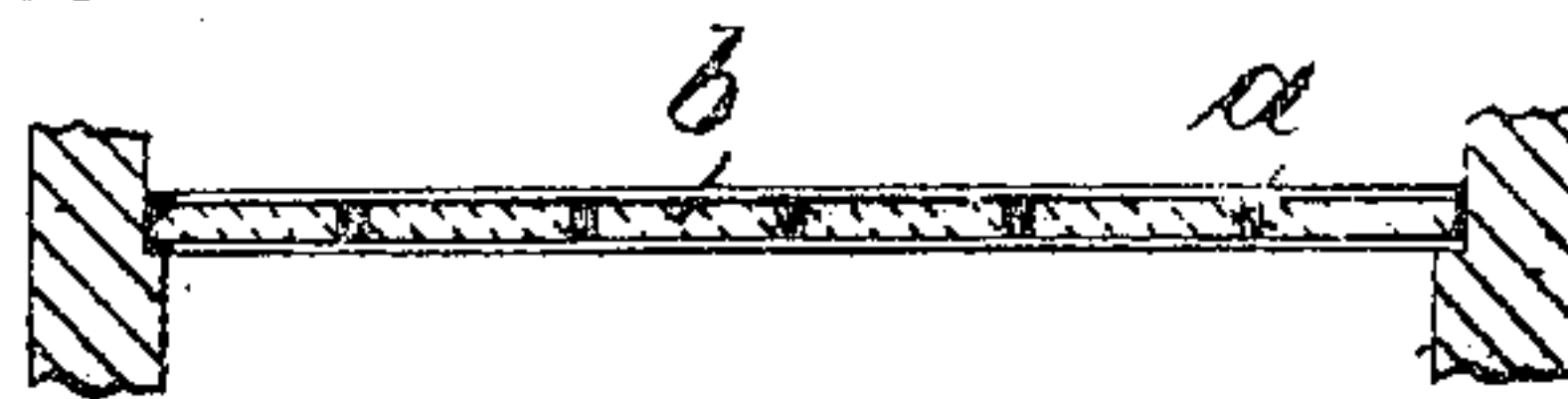


Fig. 6.

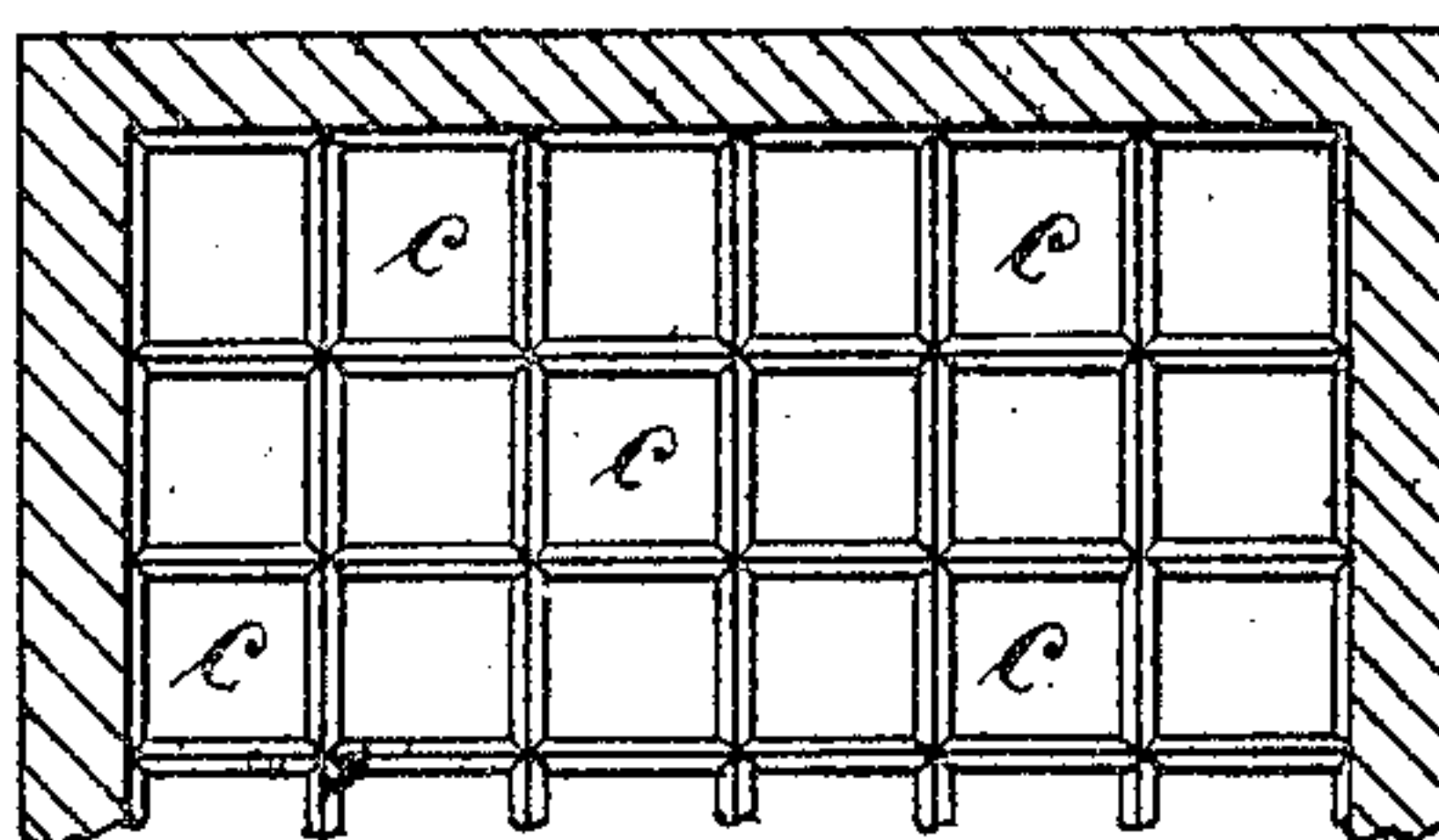
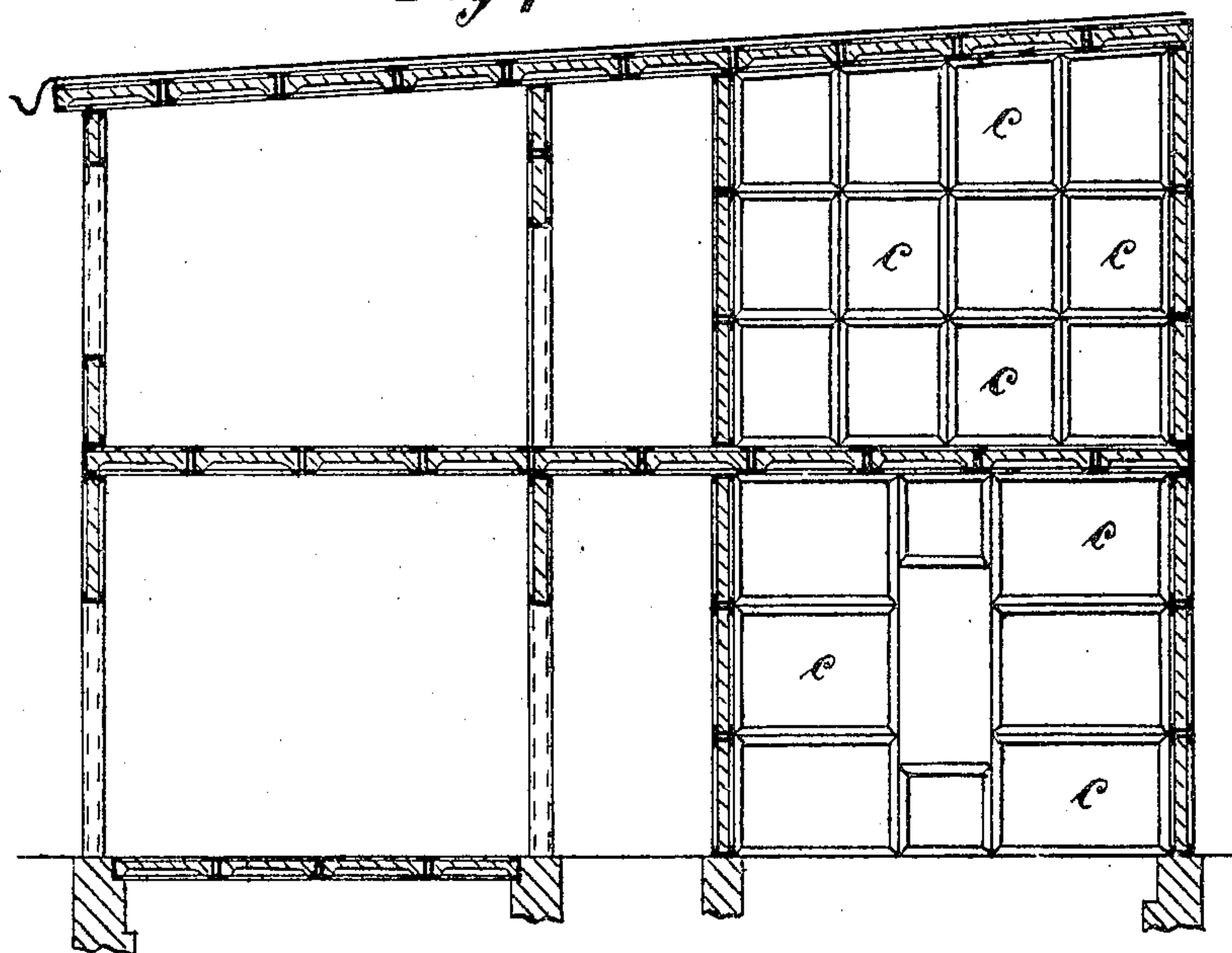


Fig. 7.



Witnesses:

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Inventor:

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UNITED STATES PATENT OFFICE.

FERDINAND KALWEIT, OF STRASSBURG, GERMANY.

BUILDING CONSTRUCTION.

No. 797,963.

Specification of Letters Patent.

Patented Aug. 22, 1905.

Application filed January 24, 1903. Serial No. 140,442.

To all whom it may concern:

Be it known that I, FERDINAND KALWEIT, a subject of the German Emperor, residing at Strassburg, in the Province of Alsace, in the German Empire, have invented new and useful Improvements in Building Constructions, of which the following is a specification.

My invention relates to structures in the form of a number of metal frames, which may be of iron of channel or other section and which after they have been set together at the place of erection are stamped full of a mass of suitable material. Such frames are adapted for general building purposes, for floors, framed work, and roofing. To secure the individual frames together, bolts or rivets may be employed.

The annexed drawings illustrate one form of my invention, the frames here shown being of iron of channel section.

Figure 1 is a cross-section, taken on the line *x x* of Fig. 2, of a portion of a wall built according to this invention. Fig. 2 is a side elevation of the same. Fig. 3 shows a partly-spread-out frame in elevation. Fig. 4 is a sectional view illustrating the manner in which four frames may be joined together. Fig. 5 is a vertical section of a floor constructed according to my invention. Fig. 6 is a plan view of Fig. 5. Fig. 7 is a vertical section of a building constructed according to my invention, illustrating in particular the manner of providing for doors and windows.

The frame *a* in the example shown is of iron of channel section and may be stamped out in the form of a strip, as shown in Fig. 3, being then bent to rectangular form and the ends riveted. Instead of a single strip the frame may consist of several parts. Cement *b* is stamped into such frames.

The corners of several such frames can be joined in various ways, depending upon the load. In Fig. 2 three different methods of forming such joints are shown, one of which is illustrated in detail in Fig. 4.

The height of the lateral flanges depends upon the load and may vary between ten and twenty-five centimeters. The thickness of the wall of the frame may be from two to four millimeters, according to the load and the size. Holes are provided in the cement blocks to enable better connection and fastening. The corners and also the walls of the frames may be riveted, as shown in Fig. 4, or held together by bolts. By reason of the rectangular form the cement can be stamped into minimum

thickness, whereby waste of material is obviated.

In Fig. 1 one of the frames is shown filled from top to bottom with cement, while the other is only partially so filled.

In building according to my invention a uniform distribution of load is rendered possible, not only on two walls, as is the case with beams, but on all the outside walls, whereby great security is afforded to the buildings.

By the employment of my invention the following further advantages are secured. The structure is considerably cheaper than other kinds, since good-value cement can be used solely. There is no waste of metal, and since for most purposes square frames of a definite size are desirable they may be manufactured as a wholesale article, so that the price can be set very low. The thickness of floors is much less than of floors constructed with beams. Such floors are also lighter than those of the latter kind. As already mentioned, by reason of the rectangular form the cement can be stamped to a minimum thickness, whereby material is economized.

In roofing all kinds of covering material may be employed, especially wood-cement. In the case of tile or slate roofs it is necessary to lay the battens at a suitable distance apart on the metal framework, which in this case should not be filled out with cement.

My new structures are extremely fireproof. Plaster-of-paris and other insulating material may be applied to the iron to protect against cold, heat, or noise.

Edifices built according to my invention meet all demands as to rigidity and carrying power.

Having thus described my invention, what I claim as new is—

1. A building construction consisting of a plurality of independent iron frames of channel-shaped cross-section and suitably connected together and filled with a mass of appropriate material.

2. A building construction composed of a plurality of independent rectangular frames of channel-iron suitably connected together and filled with a mass of appropriate material.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

FERDINAND KALWEIT.

Witnesses:

GUSTAV SCHWEISS,

MARTHA L. BRITAIN.