E. GRUWE.

Metallic-Frames for Buildings.

No. 169,101. Patented Oct. 26, 1875

Fig. 1.

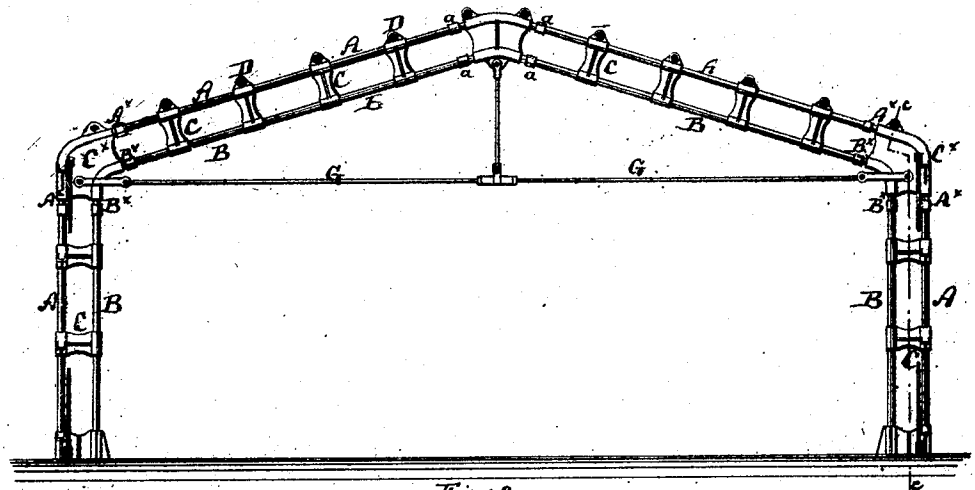


Fig. 2.

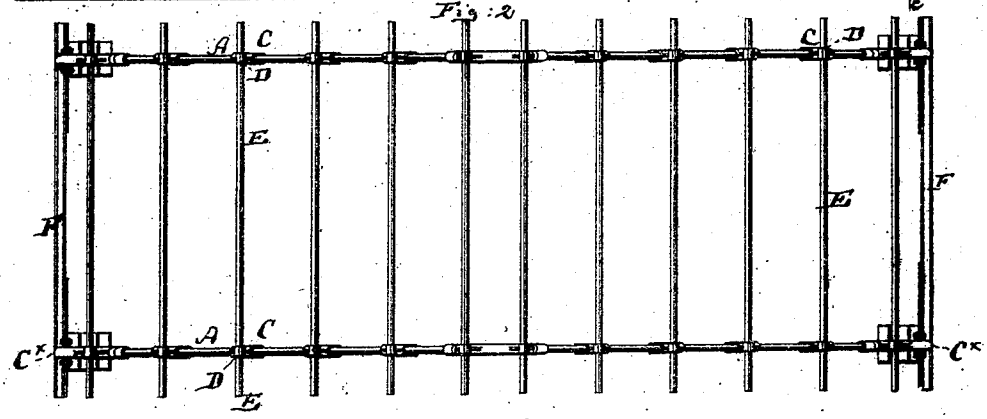
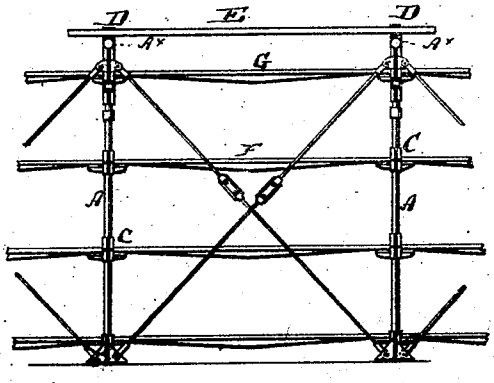


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

EMIL GRUWÉ, OF HOBOKEN, NEW JERSEY, ASSIGNOR TO SCHWEIZER & GRUWÉ, OF NEW YORK, N. Y.

IMPROVEMENT IN METALLIC FRAMES FOR BUILDINGS.

Specification forming part of Letters Patent No. **169,101**, dated October 26, 1875; application filed September 2, 1875.

To all whom it may concern:

Be it known that I, EMIL GRUWÉ, of Hoboken, in the county of Hudson and State of New Jersey, have invented a new and Improved Metallic Building and method of constructing the same, of which the following is a specification:

This invention has for its object to produce a hollow metallic frame-work for houses and other buildings, in such condition that the same may be readily and conveniently fitted to its place in the structure; and the invention consists in the new combination of cast blocks, metal tubes, and supporting-pieces, as hereinafter more fully described.

In the accompanying drawing, Figure 1 represents a face view of the frame of a building constructed according to my invention. Fig. 2 is a top view of the same, and Fig. 3 a vertical section on the line *c c*, Fig. 1.

Similar letters of reference indicate corresponding parts in all the figures.

As already stated, the frame of this building is to be mainly composed of metallic tubing, and I propose to make each post, beam, and supporting part in fact of the main frame of two or more parallel tubes, A B, and to connect these two or more tubes by cast blocks or braces C, and to form on several of these cast blocks tubular sockets D for receiving cross-tubes E, by which the several beams, and, if desired, also the posts of the frame of the structure, may be connected. In order to facilitate the putting together of a structure thus made, and to avoid confusion and delay in the setting up of the same, I cast the four, five, more or less, connecting-blocks C C, that are to be put onto each length of section of parallel tubes A and B, on these two or more tubes by putting there two or more tubes in proper molds, in which recesses are made for forming the cast blocks C C C, each of said blocks having, where necessary, especially on the roof part, a transverse socket, D, for receiving the cross-tubing E. These transverse sockets are not requisite on all parts of the building—for instance, along the uprights, as shown in Fig. 1, where instead, the blocks C C have flanges formed on them for receiving metallic flat beams F F. The piece of tubing A B cast with these four, more or less, blocks C C will then constitute a compact and unchangeable beam for the structure, and can be joined to the other beams by right and left nuts *a a* or otherwise, as may be desired, so that thus the several parts or beams can be readily joined together when they have been transported to the place where the structure is to be put up. The blocks $C^{\times}$ that join the post-tubes to the roof-tubes, as in Fig. 1, are also cast with their short pipes $A^{\times}$ $B^{\times}$ for connection with the roof and upright tubes, as shown.

The complete building may be furthermore strengthened by wrought iron or other braces G G in any suitable way, which does not form a part of this invention. The buildings to be put up on this plan are chiefly to be sent from this country to, and used in, South America, and where skillful labor is difficult to obtain, and where, in consequence, it is desirable to obtain the parts of a structure to be put up in as complete a form as it is possible to ship them.

I claim as my invention—

The combination of the tubes A B, with the connecting-blocks C C, which have projecting flanges formed on them for receiving and supporting the connecting-beams F F, substantially as herein shown and described.

EM. GRUWÉ.

Witnesses:

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