(No Model.)

J. T. WILSON.

CONSTRUCTION OF BUILDINGS.

No. 563,530. Patented July 7, 1896.

FIG. 1.

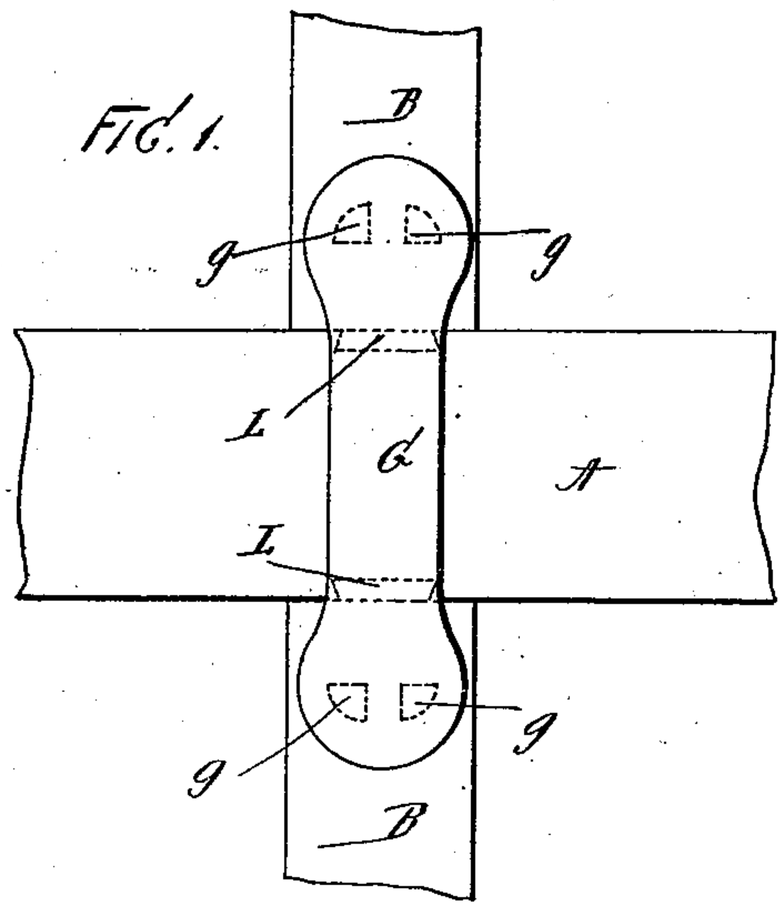


FIG. 2.

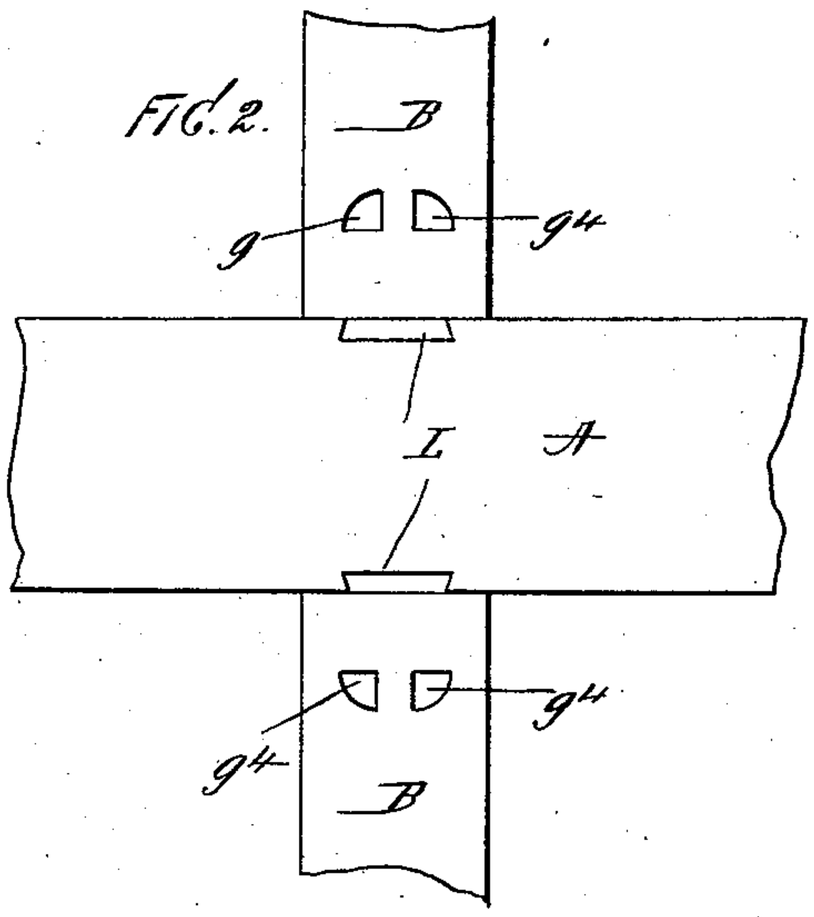


FIG. 3.

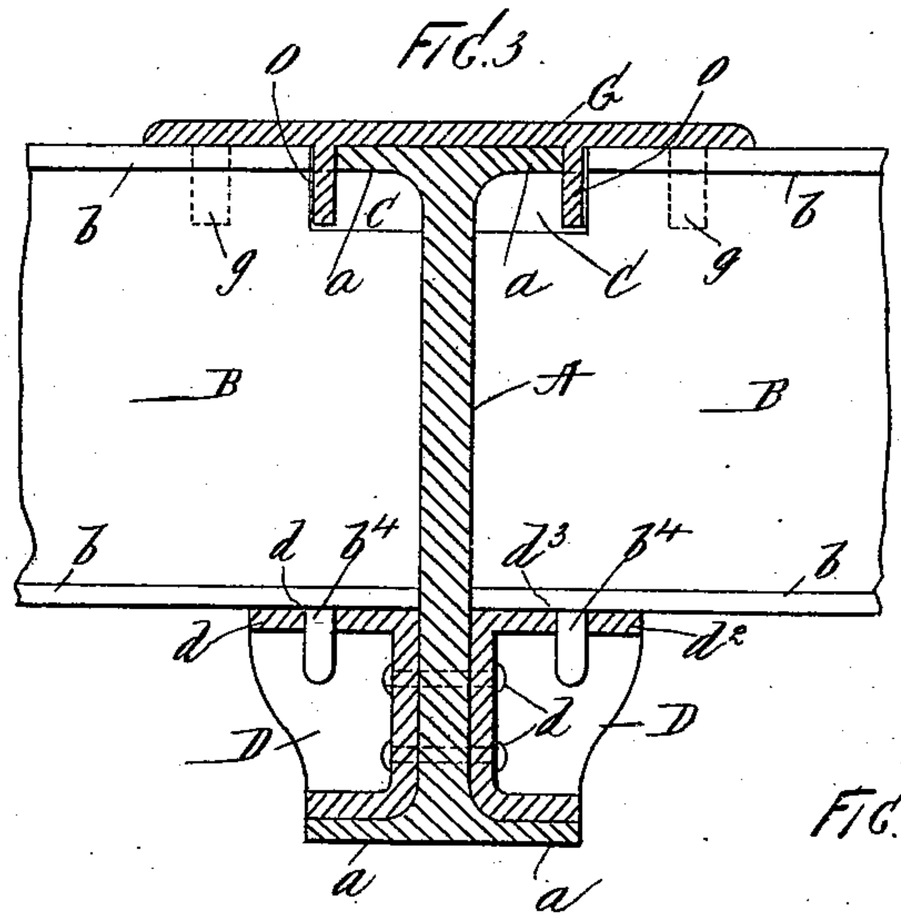


FIG. 4.

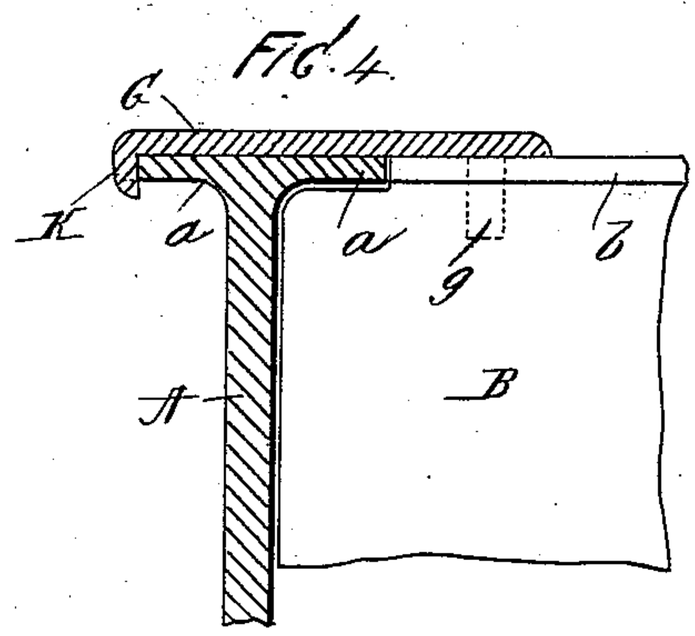
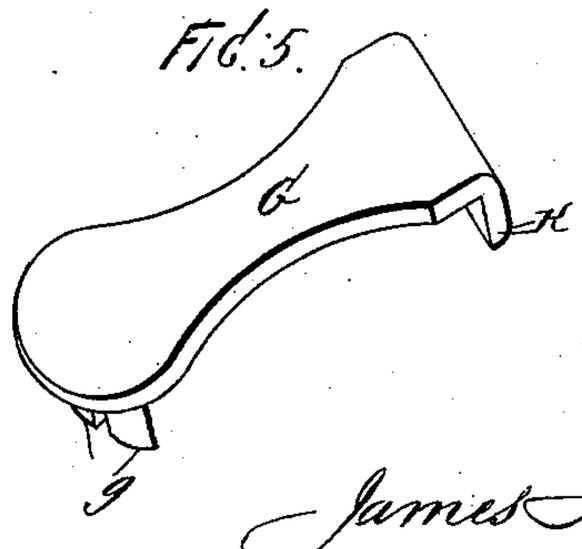


FIG. 5.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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CONSTRUCTION OF BUILDINGS.

SPECIFICATION forming part of Letters Patent No. 563,530, dated July 7, 1896.

Application filed February 25, 1896. Serial No. 580,736. (No model.)

To all whom it may concern:

Be it known that I, JAMES THOMPSON WILSON, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in the Construction of Buildings, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar letters of reference indicate corresponding parts.

This invention relates to the construction of buildings in which iron or steel frames are employed; and it consists of an improvement on the construction shown and described in application for Letters Patent, Serial No. 570,260, filed by me November 27, 1895.

In the application above referred to I described and claimed an iron or steel frame for buildings comprising main posts or supports and the main beams or girders which connect therewith; and the object of this invention is to provide means for connecting supplemental beams or girders with the main beams or girders, said supplemental beams or girders being such as are usually employed in buildings of the class referred to for flooring and other purposes; and with this and other objects in view the invention consists in the construction, combination, and arrangement of parts herein shown and described.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 is a plan view of a section of a main beam or girder of the iron or steel frame of a building, showing also two supplemental beams or girders connected therewith and my improved means for locking the same together; Fig. 2, a similar view of the main and the supplemental girder with the locking means or attachment removed therefrom; Fig. 3, a transverse section of the main beams and also of the means by which the supplemental beams or girders are connected therewith; Fig. 4, a similar view showing one of the supplemental beams or girders, and Fig. 5 a perspective view of one form of the attachment or locking device which I employ.

In the drawings forming part of this specification, A represents one of the main beams or girders of the iron or steel frame of the building, and B the supplemental beams or girders, such as are usually employed for flooring and other purposes, and the main beam or girder A is provided with the usual flanges *a* at the top and bottom thereof, and the supplemental beams or girders are also provided with similar flanges *b* at the top and bottom thereof.

The construction and operation of my present improvement are best shown in Figs. 1, 2, and 3, and in this construction I secure to the main beam or girder A angular brackets or supports D, which are secured in position by rivets *d*, or in any desired manner, and said brackets D are provided with top plates d^2, in which are formed apertures or holes d^3, and the base or bottom flanges of the supplemental beams or girders B are provided with pins b^4, which are adapted to enter said holes or apertures, and the upper portions of the ends thereof are cut away, as shown at C, to provide room for the flanges at the top of the main beam or girder, and I also employ a tie or lock G, which is of the form shown in Figs. 1 and 3, when it is desired to connect two of the supplemental beams or girders at the same point, and which is of the form shown in Fig. 4 when only one of such connections is necessary. This tie or lock in the form shown in Figs. 1 and 3 consists of a plate provided at each end with depending lugs or projections *g*, which are shown in dotted lines in Figs. 1 and 3, and which are adapted to enter corresponding holes or apertures g^4, formed in the top flanges of the supplemental beams or girders, as clearly shown in Figs. 1 and 2.

In the construction shown in Fig 4, one end of the tie or lock G is provided with a depending hook or jaw K, which is adapted to engage with one of the side flanges of the main beam or girder, and the opposite end thereof is provided with the pins or lugs *g*, which are adapted to enter the top flange or plate of the supplemental beam or girder, as clearly shown in said figure, and I may also, as shown in Figs. 1 and 2, connect the upper flanges of the main beam or girder, and the upper flanges of the supplemental beams or girders by means of tongue-and-groove joints, as shown at L, said construction being shown in full lines in Fig. 2 and in dotted lines in

Fig. 1. The brackets D are not absolutely essential in this construction if the supplemental beams or girders be made wide enough to rest upon the bottom flanges of the main beam or girder, but I prefer to employ them, as it is not frequently necessary that the supplemental beams or girders be of such width as to rest upon the bottom flanges of the main beams or girders and extend to the top thereof. By means of this construction the beams or girders and the supplemental cross beams or girders may be securely locked together, and the separation of these parts so common in cases of fire is avoided under ordinary conditions.

It is also well known that buildings of this character frequently settle so as to disconnect the parts of the frame, and especially to disconnect the supplemental or cross girders or beams from the main beams or girders, and the application of my improvement will also prevent this disconnection of the parts and thus frequently avoid serious accidents which sometimes result in the destruction of buildings and in the loss of life.

Instead of providing the tongue-and-groove coupling between the top flanges of the main and supplemental girders or beams, as shown at L, and as hereinbefore described, I may form the tongue which constitutes part of this coupling on the under surface of the tie or lock G, as shown at O in Fig. 3, and this tongue may be passed through the slot which is formed in the sides of the flanges of the main beam or girder, as shown at L in Fig. 2, and this construction will operate to bind the parts together in the same manner as hereinbefore described.

Having fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The herein-described means for connecting the supplemental cross beams or girders with the main beams or girders of an iron or steel frame for buildings, which consists in a tie or lock which is adapted to be placed crosswise of the main beam or girder, and which is provided with lugs or projections adapted to enter corresponding holes or apertures formed in the top flanges of the supplemental beams or girders, substantially as shown and described.

2. The herein-described means for connecting the supplemental cross beams or girders with the main beams or girders of an iron or steel frame for buildings, which consists in a tie or lock which is adapted to be placed crosswise of the main beam or girder, and which is provided with lugs or projections adapted to enter corresponding holes or apertures formed in the top flanges of the supplemental beams or girders, said tie or lock being also provided with means by which it is connected with the main beam or girder and being detachable therefrom, substantially as shown and described.

3. The herein-described means for connecting the supplemental cross beams or girders with the main beams or girders of an iron or steel frame for buildings, which consists in a tie or lock which is adapted to be placed crosswise of the main beam or girder, and which is provided with lugs or projections adapted to enter corresponding holes or apertures formed in the top flanges of the supplemental beams or girders, said tie or lock being also provided with means by which it is connected with the main beam or girder and being detachable therefrom, and said supplemental beams or girders being also provided with lugs or projections secured to or formed on their bottom flanges which are adapted to enter corresponding holes or apertures formed in the supports thereof, substantially as shown and described.

4. The combination with the main beams or girders of a building, provided with the usual top and bottom flanges of brackets secured upon the bottom flanges and provided with top plates having holes or apertures therein, and supplemental beams or girders the ends of which are placed upon said brackets, and provided with lugs or projections which are adapted to enter said holes or apertures, and a tie or lock which is adapted to be placed crosswise of the main beam or girder and which is provided with lugs or projections at its ends which are adapted to enter corresponding holes or apertures formed in the top flanges of the supplemental beams or girders, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 24th day of February, 1896.

JAMES THOMPSON WILSON.

Witnesses:

C. GERST,

C. G. MILLIN.