No. 786,820. PATENTED APR. 11, 1905.

J. KAHN.

LINTEL CONSTRUCTION.

APPLICATION FILED DEC. 21, 1903

2 SHEETS—SHEET 1.

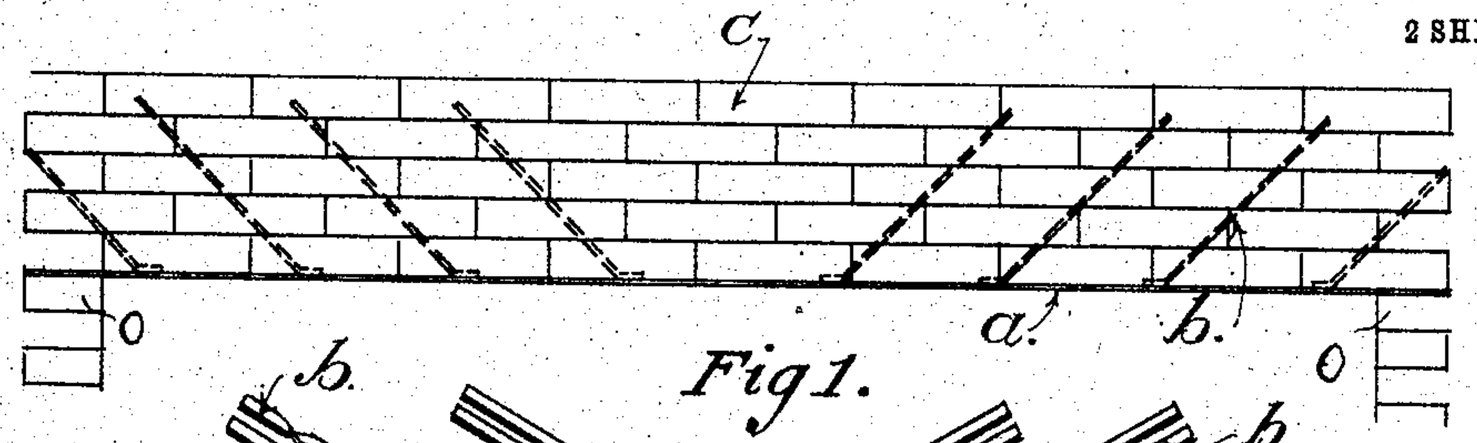



Fig 1.

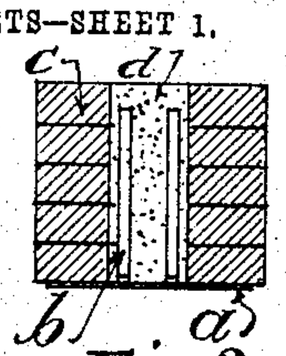
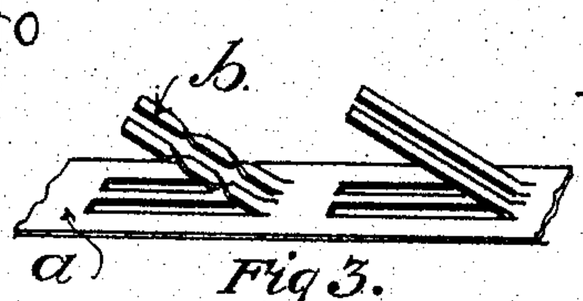



Fig 2.

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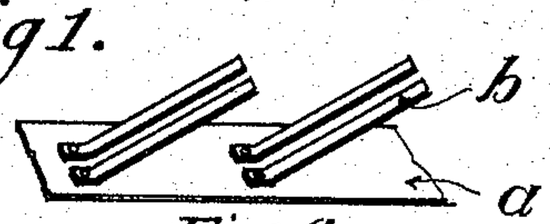



Fig 4

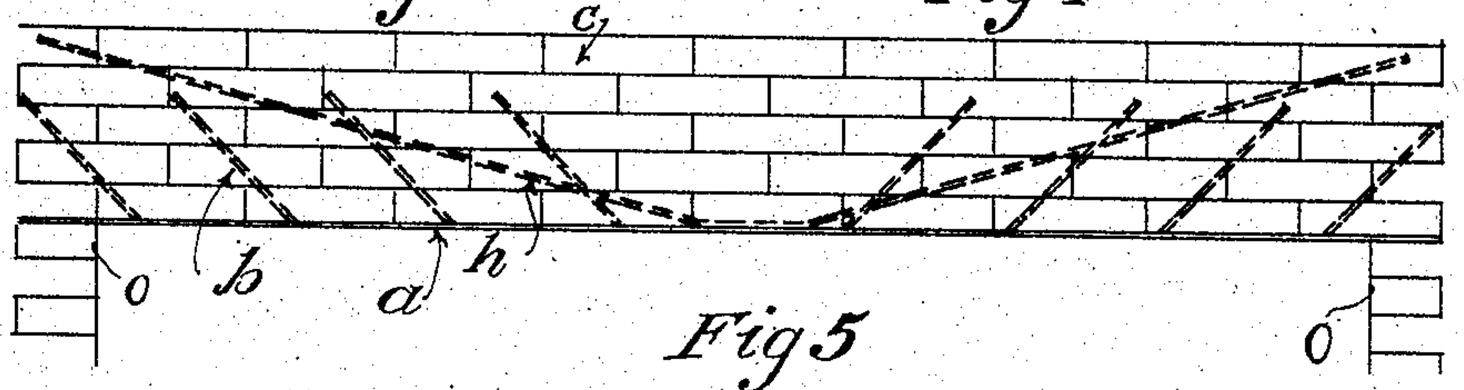
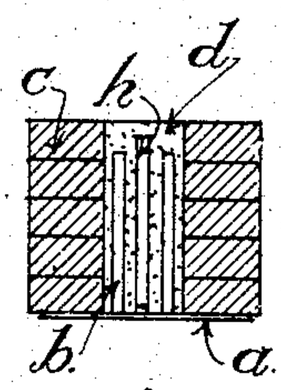



Fig 5

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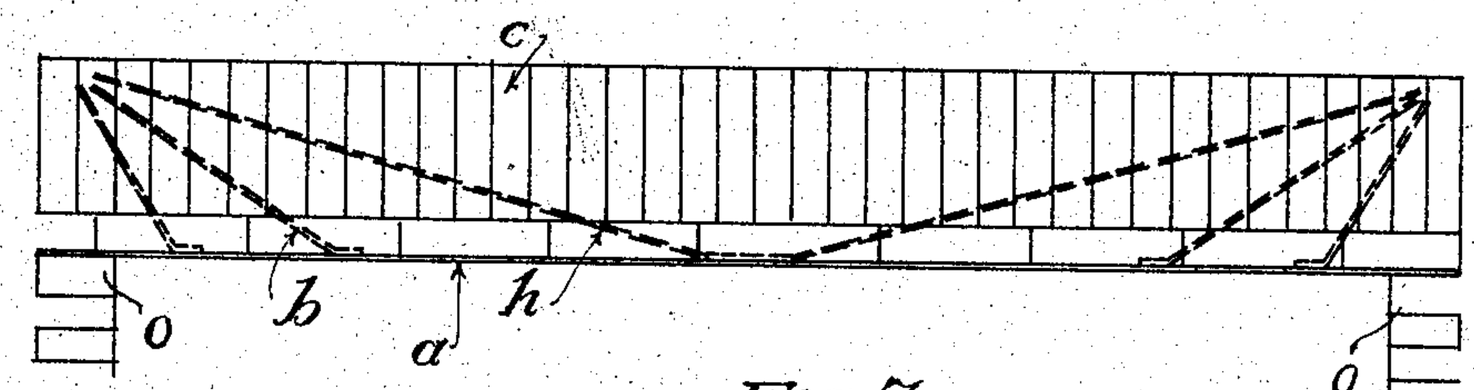


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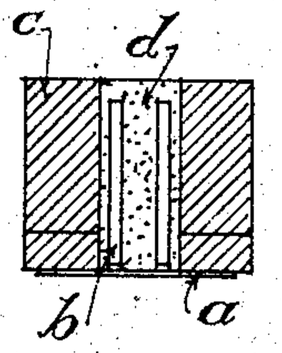


Fig 8.

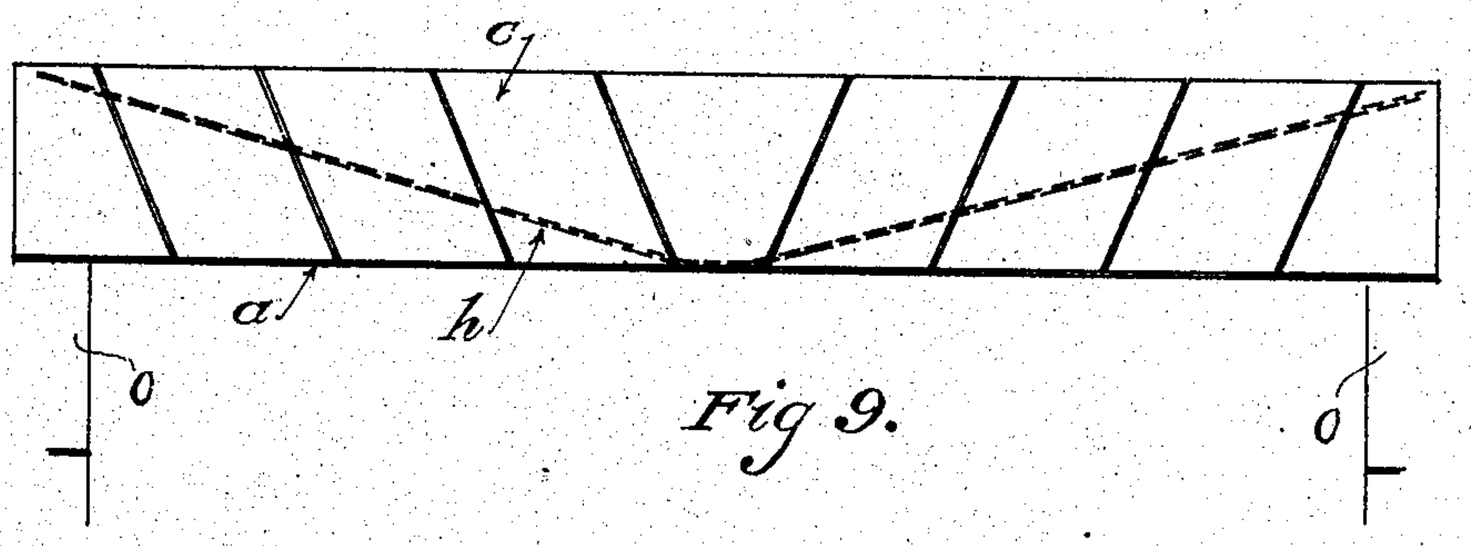


Fig 9.

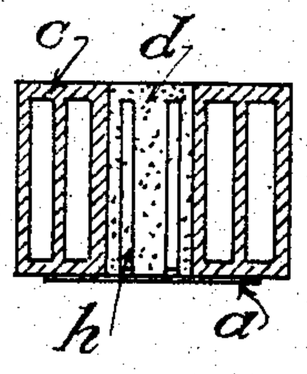


Fig 10.

WITNESSES.

F. W. Langley.

M. Goldenberg.

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2 SHEETS—SHEET 2.

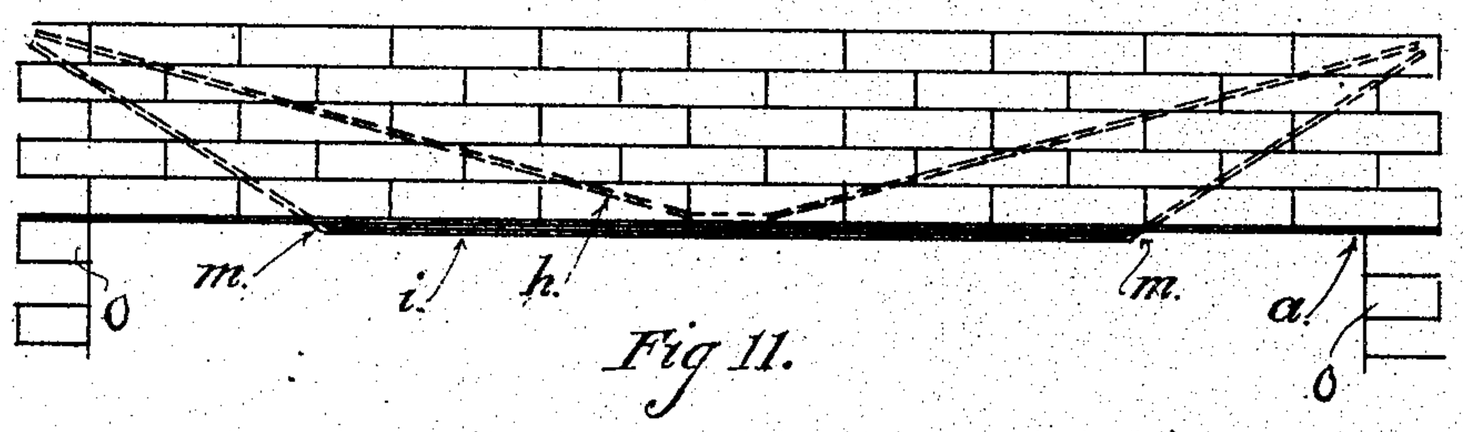


Fig 11.

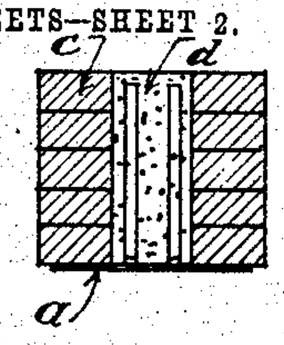


Fig 12.

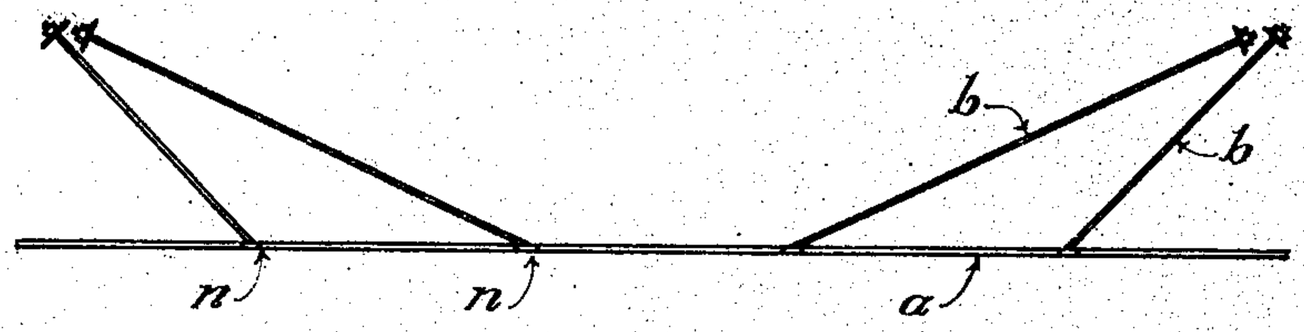


Fig 13.

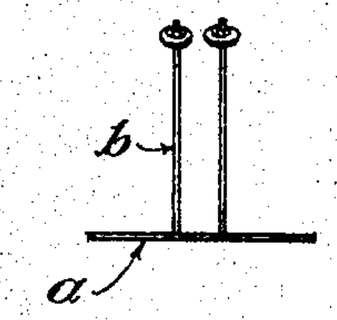


Fig 14.

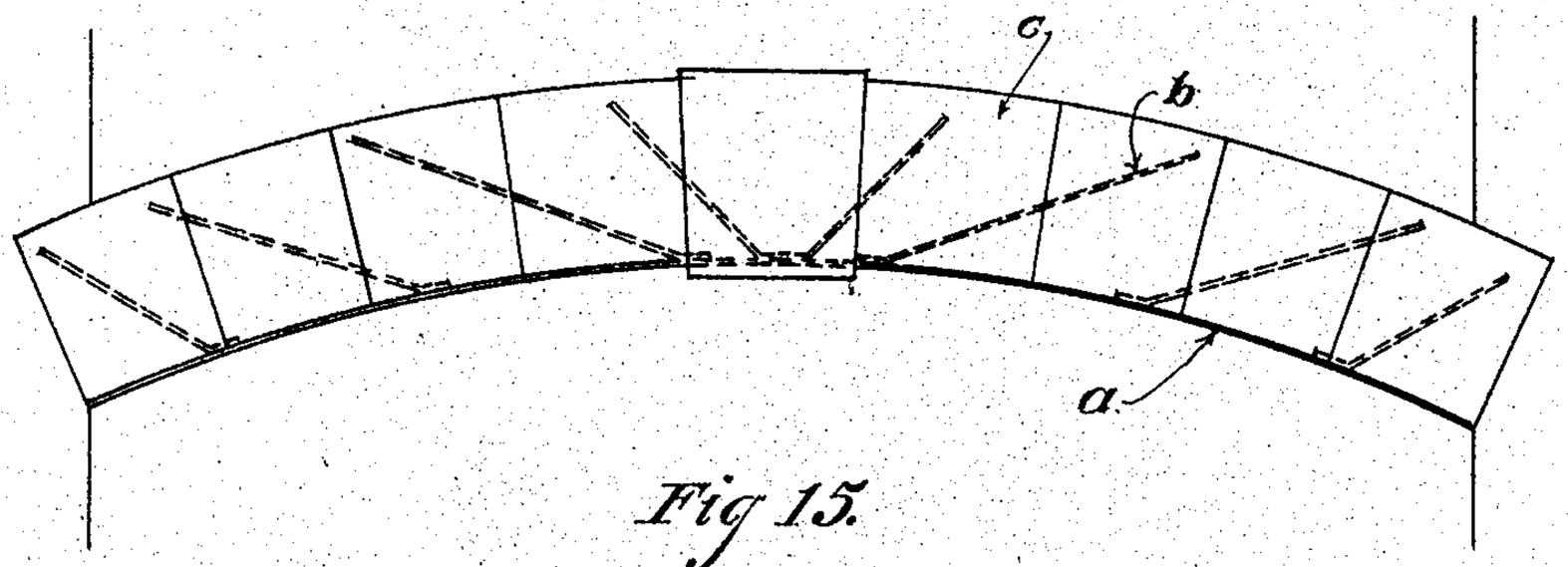


Fig 15.

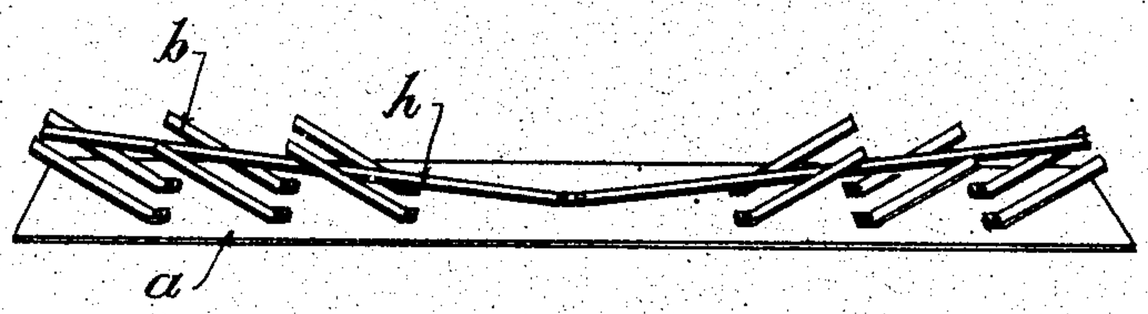


Fig 16.

WITNESSES.

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No. 786,820. Patented April 11, 1905.

# UNITED STATES PATENT OFFICE.

JULIUS KAHN, OF DETROIT, MICHIGAN.

## LINTEL CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 786,820, dated April 11, 1905.

Application filed December 21, 1903. Serial No. 186,146.

*To all whom it may concern:*

Be it known that I, JULIUS KAHN, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Lintel Construction, of which the following is a specification.

This invention relates to lintels to be used over window, door, and other openings, and pertains especially to a trussed form of construction by means of which a relatively small amount of metal, in connection with concrete or other cementitious substance, is made to possess great sustaining power. This general trussed construction of steel and concrete I have embodied in Letters Patent No. 736,602, heretofore granted to me, and in subsequent applications.

A further object of this invention is to provide a lintel which can be cheaply and easily manufactured and be readily erected into place in the building.

The gist of the invention consists of a main longitudinally-disposed metal portion of such shape, preferably flattened, upon the edges of which the wall can be supported, and one or more upwardly-extending arms secured to the main portion and embedded in a body material of concrete, which forms the compression member of a trussed beam.

In the annexed drawings, illustrating this invention and constituting a part of this specification, Figure 1 is a front elevation of my invention, showing the edge of the flattened metal plate and the arms in outline. Fig. 2 is an end view of the same and shows the concrete body material between the brick or block wall construction. Figs. 3 and 4 are perspective views of the metal member differently constructed in accordance with my invention. Figs. 5 and 6 show a modified form in which an auxiliary arm is employed. Figs. 7, 8, 9, and 10 represent the use of the metal member in connection with various building material. Figs. 11 and 12 show a modified form of connecting the arm members to the main flattened plate. Figs. 13 and 14 show still different construction of the metal member. Fig. 15 shows the application to curved or arched lintels, while Fig. 16 is a perspective view of a general form of my lintel.

Similar letters refer to like parts throughout the different views.

*a* is the main longitudinally-disposed metal member, preferably flat, though it may be otherwise shaped, except that along the sides it is required to have sufficient horizontal surface to receive the wall *c*. Secured to this main portion *a* are the upwardly-extending arms *b*, which may be varied in number, size, length, and position. These arms are preferably inclined obliquely outward from the middle of the main plate, but may be perpendicular thereto without departing from the intended scope of my invention. They may be of uniform lengths and make uniform angles with the bottom plate or may be of different lengths and be differently inclined.

*h* in Fig. 5 is an auxiliary arm secured near the middle of the plate and extending outward over the points of support designated by *o*.

The arms *b* may be struck up from the plate *a*, as shown in Fig. 3, or may be secured thereto by riveting or similar means, as represented in Fig. 4. Other means may be employed of securing the arms to the plate, the gist of the invention being to provide a direct and positive attachment, so that the stresses developed in the arms will be transmitted to the main longitudinal portion.

*d* is a body material of concrete or other cementitious material and embeds and adheres to the arms *b* and *h* and forms the compression portion of the completed truss or lintel.

As shown in Fig. 11, the rods forming the arms have a central portion *i* in the same plane as the plate *a* and pass through it at the points *m*. The advantage of this form of construction is the obtaining of additional metal at the middle section of the lintel.

In Figs. 13 and 14 the arms *b* are represented hooked and countersunk in the plate *a* at the points *n*. Still other means of construction may be employed without departing from my invention, which I claim and desire to secure, broadly, as covering a lintel construction having a main or bottom portion so shaped as to carry a part of the wall and form-

ing the tension member of a trussed beam, the remainder of the beam being made up of the arms attached to the bottom plate and the cementitious material embedding them.

In erection the metal lintel, as shown in Fig. 16 or in different modification, is placed in position upon the end supports *o* and held by ordinary centering. The facing of brick or blocks, indicated by *c*, is then built up in the same manner as the remainder of the wall, after which the central and back portions are filled in either entirely of concrete or with that material embedding the arms, and the inner surface of the wall made up of masonry.

What I claim, and desire to secure by Letters Patent, is—

1. In a lintel construction, the combination with a metallic part-truss consisting of a main longitudinally-disposed member and one or more upwardly-extending arms directly attached thereto, of a cementitious body material embedding said arms but allowing the edges of the main member to project beyond said body material, of one or more blocks of terra-cotta or similar material disposed upon the projecting edges of the metallic member and supported thereby, substantially as described.

2. In a lintel construction, the combination of a metallic part-truss consisting of a main longitudinally-disposed portion, of a plurality of upwardly-extending arms attached to the main portion at points intermediate its ends, of an auxiliary arm secured to the main portion at or near the middle and extending upward and outward from said middle point, the principal and auxiliary arms embedded in a cementitious body material to form a trussed beam, the edges of the main longitudinal member projecting beyond the cementitious body material to support a facing of brick, terra-cotta, or similar material, substantially as described.

3. In a lintel construction, the combination with a longitudinally-disposed flattened plate, of one or more upwardly-extending arms directly secured to said plate, of cementitious body material embedding said arms and forming the compression member of a trussed beam, the front or outer edge of said plate projecting beyond the body material, and a facing of brick, terra-cotta or the like resting upon said projecting edge, substantially as described.

4. In a composite building construction, a metal tension member comprising main and auxiliary tension members, a cementitious body molded upon the main and around the auxiliary tension members, and a facing-wall resting upon the main metal member and against the cementitious body.

5. In a composite building construction, the combination of a flat longitudinal metal tension member, auxiliary tension members secured thereto, a cementitious compression member molded upon the flat member and around the auxiliary members, and a facing-wall of other building material resting upon the flat metal member and against the cementitious member.

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

JULIUS KAHN.

Witnesses:
R. N. DYAR,
A. M. GREGORY.