

No. 776,071.

PATENTED NOV. 29, 1904.

W. KOHLMETZ.
FLAT FIREPROOF FLOORING CONSTRUCTION WITH IRON BEAMS CONNECTING
THE CARRYING WALLS.

APPLICATION FILED AUG. 7, 1902.

NO MODEL.

Fig. 1.

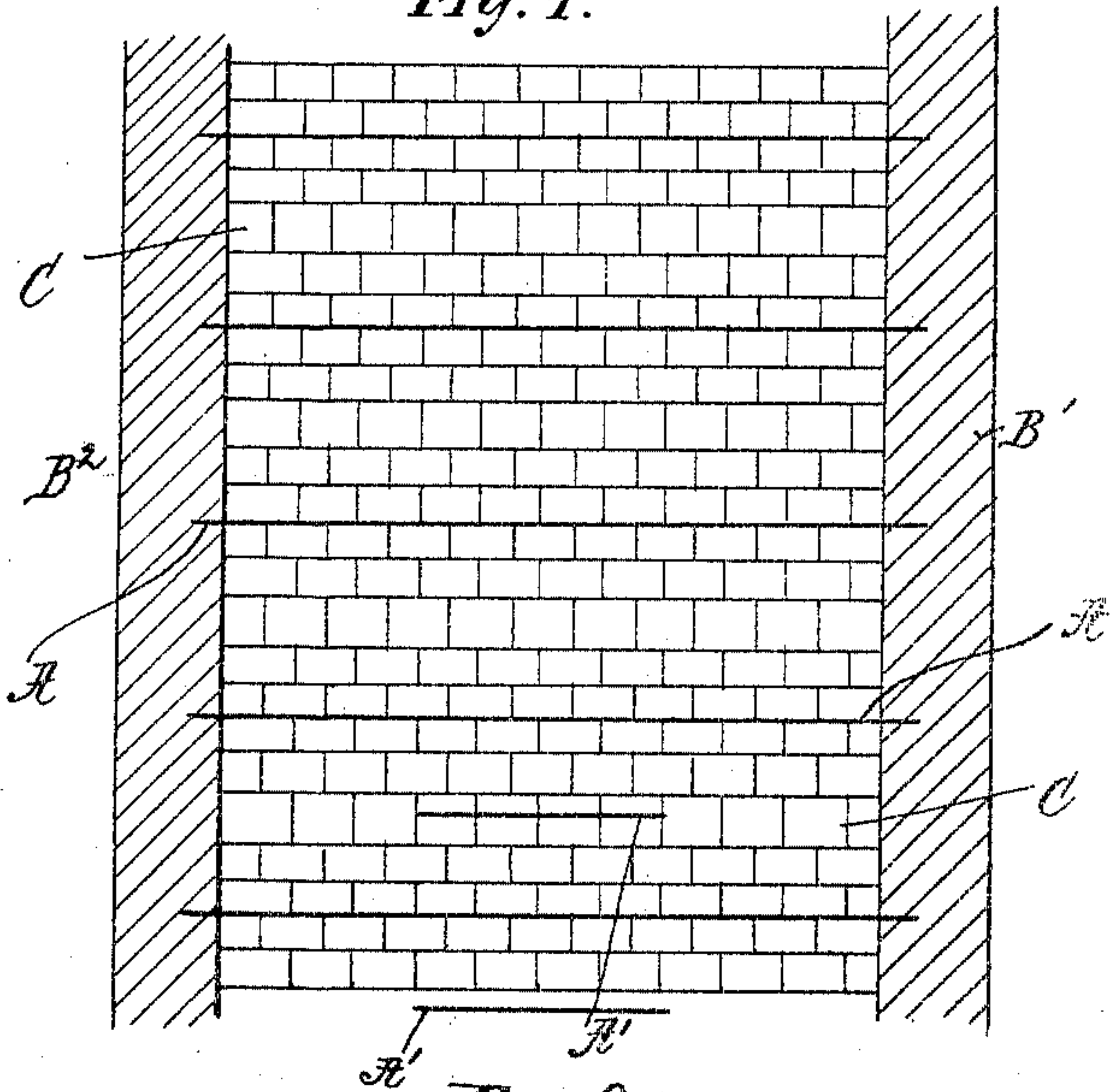


Fig. 2.

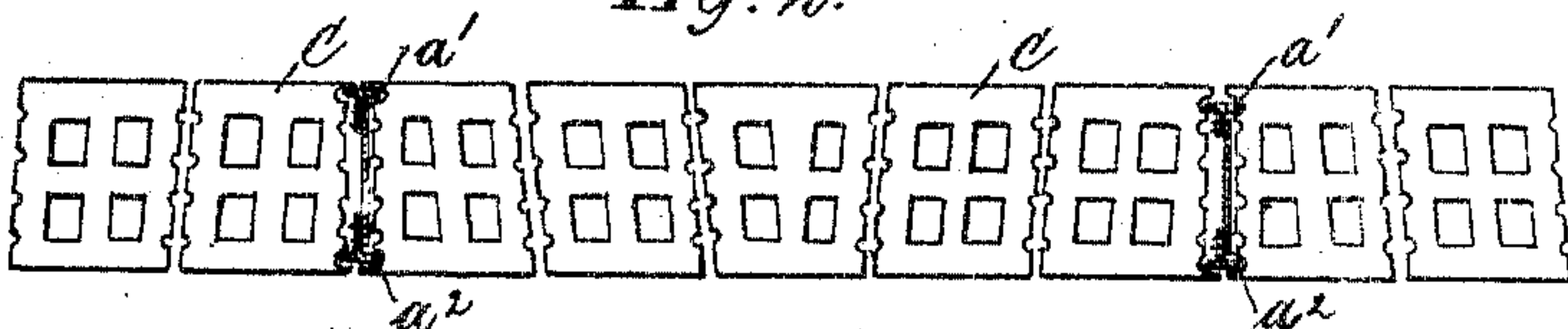


Fig. 4.

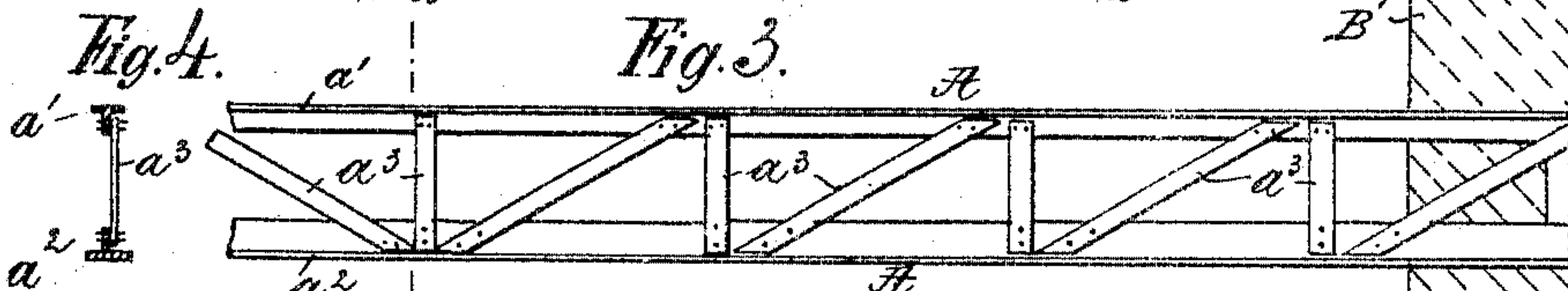


Fig. 3.

Fig. 6.

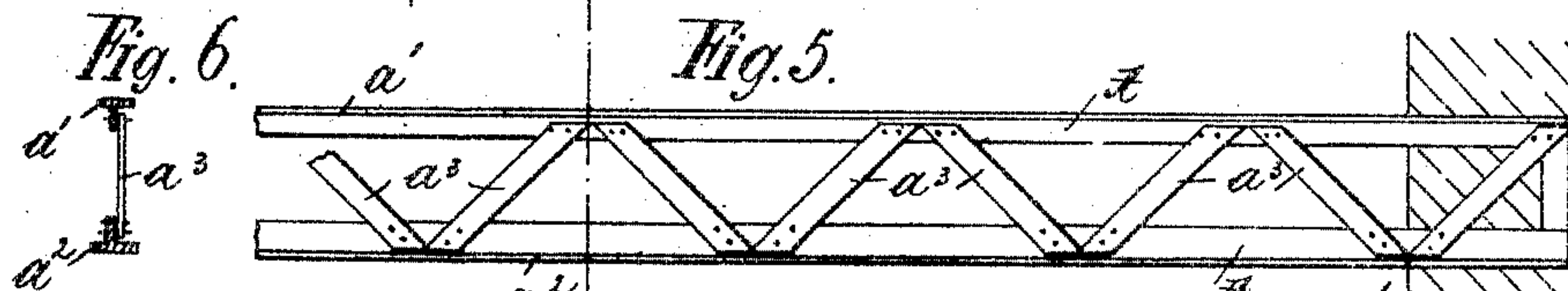


Fig. 5.

Fig. 8.



Fig. 7.

Witnesses
Herbert G. Greene
Herbert G. Greene

Inventor
Willy Kohlmetz
by Dickerson, Brown,
Rogers & Birney
Attorneys

UNITED STATES PATENT OFFICE.

WILLY KOHLMETZ, OF FRANKFORT-ON-THE-ODER, GERMANY.

FLAT FIREPROOF FLOORING CONSTRUCTION WITH IRON BEAMS CONNECTING THE CARRYING-WALLS.

SPECIFICATION forming part of Letters Patent No. 776,071, dated November 29, 1904.

Application filed August 7, 1902. Serial No. 118,812. (No model.)

To all whom it may concern:

Be it known that I, WILLY KOHLMETZ, architect, a citizen of the German Empire, residing at 55 Fürstenwalderstrasse, Frankfort-on-the-Oder, Germany, have invented a new and useful Improvement in Flat Fireproof Flooring Constructions with Iron Beams Connecting the Carrying-Walls, of which the following is a specification.

My invention relates to flat fireproof flooring constructions with iron beams connecting the carrying-walls.

The invention consists in a new form of the iron beams adapted to give a high strengthening effect to the flooring or ceiling and in the manner in which the iron beams are combined with the filling material.

The invention is represented on the drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of the flooring. Fig. 2 is a transverse section of a part of same on a larger scale in the direction parallel to the carrying-walls. Figs. 3 and 4 are a side elevation and a sectional view of an iron beam used in connection with the flooring construction. Figs. 5 and 6 and 7 and 8 show two modified forms of iron beams in side elevation and in sectional view.

A represents the iron beams, which connect the carrying-walls B' B'' with one another and which are rigidly secured in the masonry of same. Each iron beam A has an upper enlargement a' and a lower enlargement a'' , the latter having a larger cross-section than the former. The two enlargements a' a'' of the beams A are rigidly connected together in any suitable manner, either by ties, such as a^3 , riveted to the said enlargements a' a'' , or by forming them in one piece, as indicated in Figs. 7 and 8 of the drawings. Various forms of ties and means for connecting them with the upper and lower beams will readily suggest themselves to those skilled in the art, and the invention is therefore not restricted to the forms shown. The beams A are entirely embedded in the filling material. The filling material of the flooring construction is shown on the drawings as consisting of bricks or plates C.

A' represents supplementary iron beams parallel and intermediate the said beams A and intermediate the carrying-walls B' B'' . The auxiliary beams A' are likewise entirely embedded in the stony filling material.

In Figs. 7 and 8 I have shown a modified form of iron beam in which the smaller upper enlargement and stronger lower enlargement are formed in one piece with the connecting network. This form of beam is used in the same manner as those represented in Figs. 2 and 3 to 6.

In order to perform my invention, I preferably proceed in the following manner: The carrying-walls B' B'' are built up as usual. In the height of the ceilings or flooring constructions the iron beams A are set and rigidly secured in the walls, as is customary to do with wooden rafters or with I-beams. When the walls of the building are finished and the roof is brought up, the space intermediate the beams is filled up with bricks or concrete in such a manner that the beams are entirely embedded in the mass. The auxiliary iron bars A', running parallel to the primary bars A, are set when the spaces intermediate the primary bars are filled up with bricks or concrete. These auxiliary bars may have any suitable form and are likewise entirely embedded in the stone mass of the construction. These auxiliary beams take up part of the stress in the flooring construction, so that the primary beams may be of lighter weight and construction. However, the auxiliary bars may be dispensed with.

I obtain by my new flooring construction considerable advantages over known constructions. The principal advantages are the following: The walls of the building may be built up without any delay caused by the flooring-work in the several stories, the iron beams tying the walls during this period so the building can quickly be roofed. By employing iron beams the upper enlargements of which are lighter than the lower enlargements or flanges the required weight of iron is highly reduced. A further reduction of the required iron weight is obtained by the fact that the iron beams are entirely embedded in the stone mass and by the network con-

struction of the web enabling the stony filling on one side of the web to be connected to that on the other side through openings in the web. In the case of concrete being employed to fill
5 the space between beams it will naturally pass into the openings from either side, and in case stone plates are employed the cement usually employed to connect them will form the medium of connection through the open-
10 ings in the web. By this construction a stone-iron plate is produced in which the lateral stresses are supported partly by the stone material, partly by the iron beams, especially the lower enlargements of same, whereas in
15 such instances where the stone filling rests on the beams the beams must support substantially the whole weight and stress of the flooring.

It is easily to be seen that any modifications
20 of the new flooring construction may be suggested especially with regard to the form of iron beams and to the stony material filling the spaces intermediate the beams. Therefore, I do not desire to be limited to the pre-
25 cise forms of construction shown on the drawings and described in the specification.

Having now particularly described and as-
certainated the nature of my said invention and in what manner the same is to be performed,
30 I declare that what I claim is—

1. In a flat fireproof flooring construction or ceiling the combination of iron beams which connect carrying-walls and are rigidly secured therein, enlargements on the upper and on the lower side of said beams, the lower enlarge- 35 ments being larger than the upper ones, a layer of stony material filling the spaces intermediate the said iron beams and entirely embedding same and auxiliary beams embedded in the stony material intermediate the 40 beams aforesaid and intermediate the carrying-walls.

2. In a flat fireproof flooring construction or ceiling, the combination of iron beams connecting the carrying-walls and rigidly secured 45 therein, each beam consisting of an upper beam and a lower beam of larger cross-section than the upper beam, said upper and lower beams being rigidly connected by spaced ties, and a layer of stony material filling the spaces 50 intermediate said beams and entirely embedding the same, substantially as and for the purposes set forth.

In testimony whereof I have signed this specification in the presence of two subscrib- 55 ing witnesses.

WILLY KOHLMETZ.

Witnesses:

WOLDEMAR HAUPT,
WILLIAM MAYNER.