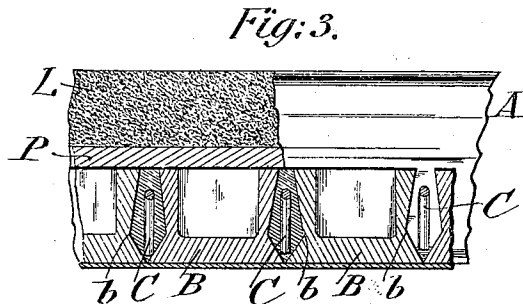
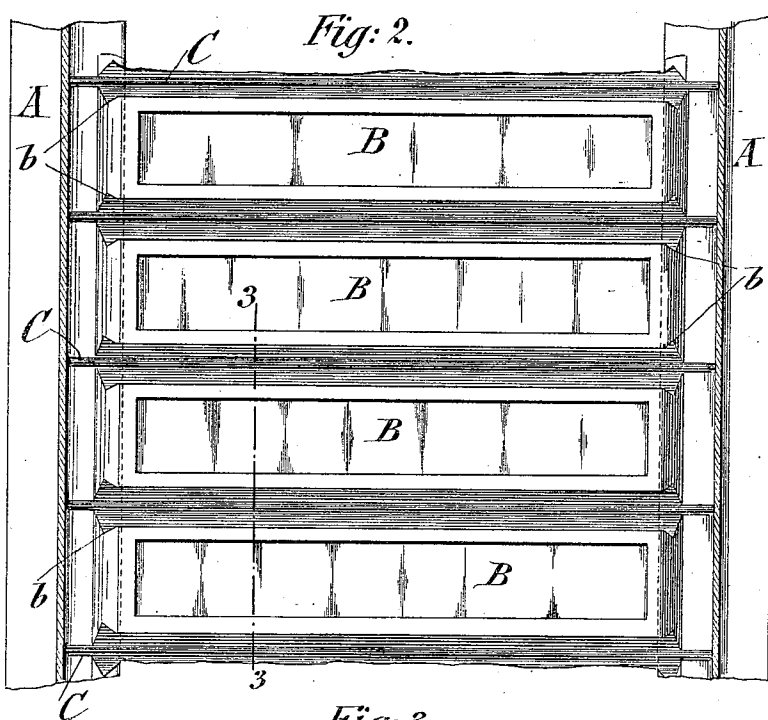
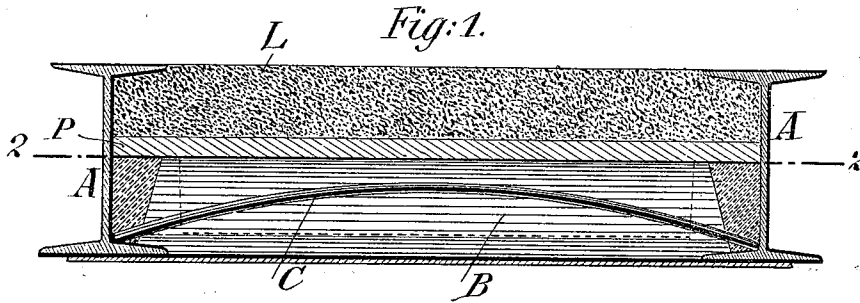


(No Model.)

H. & W. GERAERDTS.
FIREPROOF FLOOR.

No. 562,221.

Patented June 16, 1896.



WITNESSES:

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HUBERTUS GERAERDTS AND WILLEM GERAERDTS, OF NEW YORK, N. Y.

FIREPROOF FLOOR.

SPECIFICATION forming part of Letters Patent No. 562,221, dated June 16, 1896.

Application filed December 11, 1895. Serial No. 571,775. (No model.)

To all whom it may concern:

Be it known that we, HUBERTUS GERAERDTS and WILLEM GERAERDTS, citizens of the Kingdom of the Netherlands, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Fireproof Ceilings and Floors, of which the following is a specification.

This invention has reference to an improved construction of fireproof ceilings and floors in which the space between the metallic floor-beams is closed by blocks of plaster-of-paris or similar plastic material, which are cast in suitable molds, and which are directly placed in position without requiring a special framework for putting them up, said blocks being reinforced by metallic braces, so that a strong fireproof construction of floor is obtained.

Our invention consists of a fireproof ceiling and floor that is composed of filling-blocks that extend transversely between the floor-beams and that abut at their lower side edges, but are provided with side recesses which are filled up by a suitable cement. The filling-blocks are reinforced by transverse metallic braces, which are located in the spaces between two adjacent blocks and embedded in the cement, which is run into the spaces between the blocks. The filling-blocks are covered by plates of preferably the same material, the space above said plates being filled up with suitable non-conducting material, as will be fully described hereinafter and finally pointed out in the claims.

In the accompanying drawings, Figure 1 represents a vertical transverse section of our improved construction of fireproof floors. Fig. 2 is a plan view of a portion of the same, partly in horizontal section, on line 2 2, Fig. 1; and Fig. 3 is a vertical transverse section on line 3 3, Fig. 2.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A A are floor-beams, preferably I-beams, which are arranged at any suitable distance from each other. Between the beams and supported by the bottom flanges of the same are arranged filling-blocks B B, which are made of suitable plastic material, such as plaster-of-

paris, which is mixed with small pieces of coke or other suitable material. The filling-blocks B B are made in molds either solid, as shown at the upper part of Fig. 2, or hollow, as shown at the upper part of the same figure. They are provided with recesses *b* in their side walls and are of less width at the top than at the bottom, so that their bottom edges abut when the filling-blocks are placed side by side. The bottoms of the filling-blocks B B are recessed at their ends, so as to fit over the bottom flanges of the floor-beams. When the filling-blocks are placed side by side, so as to extend across the space between the beams, longitudinal spaces or pockets are formed by the recess of the adjacent blocks, which are filled with suitable cement S, that is run in after the blocks are placed in position. The filling can be made of plaster-of-paris, also of other plastic material which sets and hardens after being cast. The space between the ends of the blocks and the web of the floor-beam is likewise filled up with plastic material, the space above being covered by plates P, made of plaster-of-paris, on which a layer L of ashes or other non-conducting material is spread up to a level with the top flanges of the floor-beams. The planks for the floors are then placed on the floor-beams in the usual manner.

When it is desired to strengthen the floor construction so that the floor is capable to resist extra pressure, there are placed in the spaces between the adjacent blocks transverse braces C, which are made of arc-shaped rods, as shown in Fig. 1. These metallic bars or rods are retained in position by the plastic filling S that is run into the space between the adjacent blocks, said cement filling embedding the braces and holding them firmly in place, the filling acting in the nature of a wedge on said braces, so as to prevent any shifting or dislocation of the same. The ends of the metallic braces are embedded into the plastic mass that is run in between the ends of the filling-blocks and webs of the floor-beams, care being taken that they are of somewhat less length than the distance between the floor-beams, so as to provide for the expansion of the metallic braces. The metallic braces reinforce the filling-blocks

and increase the strength of the floor, so that it is capable of resisting considerable pressure.

As the filling-blocks are made of such a size as to span the distance between the floor-beams, they can be readily placed in position, not requiring any framework between the beams. The reinforcing-braces are then placed in position in the longitudinal spaces between the spaces of the filling-blocks, after which the filling of cement is run in, so as to connect the blocks with the braces and with each other. The covering top plates and layer of non-conducting material are then placed on the blocks, so that a very strong fireproof floor is obtained, which is adapted for distances between the floor-beams up to six feet. When solid filling-blocks are used, the covering-plates may be dispensed with, in which case the filling-blocks are preferably made somewhat thicker. When hollow filling-blocks are used, the covering-plates are necessary, so as to prevent the layer of non-conducting material from filling up the hollow spaces in the blocks. As the blocks are made of a comparatively cheap material and as they are quickly connected in one solid structure by the cement filling between the same, a comparatively cheap yet strong and durable fireproof floor is obtained.

The under sides of the filling-blocks are preferably furrowed, so that the plaster can be spread directly over the same and over the bottom of the floor-beams.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. A fireproof ceiling and floor composed of floor-beams, filling-blocks supported on the bottom flanges of said beams, the filling-blocks being wider at the bottom than at the top and provided with recesses in their side walls, transverse arched braces placed in the spaces between the adjacent filling-blocks, and a cement filling run into the space between the blocks and around the braces, substantially as set forth.

2. A fireproof ceiling and floor composed of floor-beams, transverse filling-blocks supported on the bottom flanges of said beams and being made wider at the bottom than at the top, and provided with recesses in their side walls, transverse metallic braces located in the spaces between the adjacent blocks, a cement filling run into said spaces so as to surround the metallic braces, a cement filling run in between the ends of the blocks and webs of the beams, and covering-plates placed over the filling-blocks, substantially as set forth.

In testimony that we claim the foregoing as our invention we have signed our names in presence of two subscribing witnesses.

HUBERTUS GERAERDTS.
WILLEM GERAERDTS.

Witnesses:

PAUL GOEPEL,
GEORGE W. JAEKEL.