P. M. STEWART.

FLOOR CONSTRUCTION.

APPLICATION FILED SEPT. 10, 1912.

1,068,543. Patented July 29, 1913.

Fig. 1.

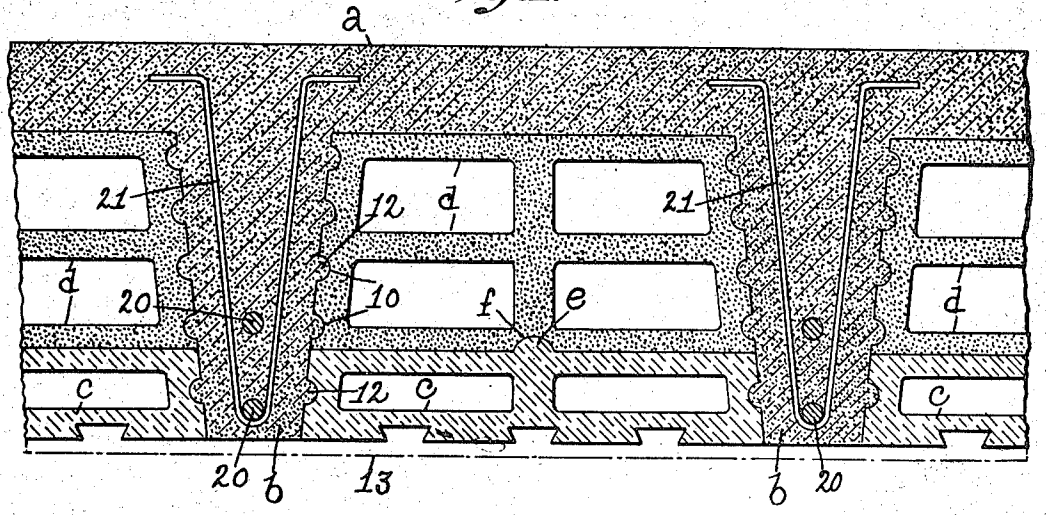
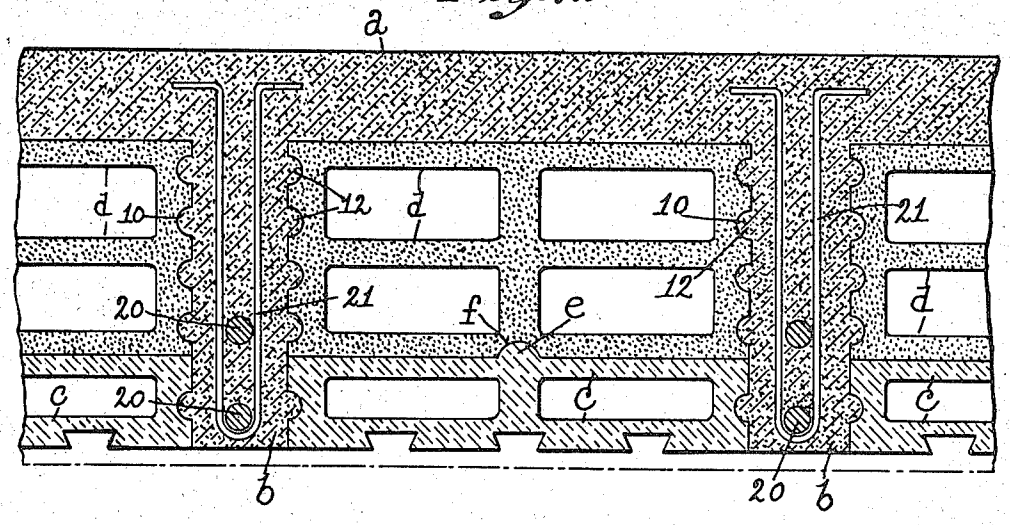


Fig. 2.



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UNITED STATES PATENT OFFICE.

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FLOOR CONSTRUCTION.

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To all whom it may concern:

Be it known that I, PEREZ M. STEWART, a citizen of the United States, and a resident of the borough of Manhattan, city, county, and State of New York, have invented an Improvement in Floor Construction, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to a reinforced concrete floor construction for use in concrete buildings, and has for its object to materially reduce the cost of buildings of the character described. To this end, I employ a plurality of composite blocks, consisting of a fire resisting member and weight reducing member, and arrange said blocks so that they may be used as a form or mold for making a T-beam concrete floor construction, in which the heads of adjacent T-beams are integral and form a continuous floor slab, and with the webs of which beams the composite blocks are bonded. The concrete beams may be reinforced in a manner now commonly practised. These and other features of this invention will be pointed out in the claims at the end of this specification.

Figure 1 is a section of one construction of concrete floor embodying this invention to enable it to be understood. Fig. 2, a section of a modified form of T-beam floor construction embodying the invention.

Referring to the drawings *a* represents the slab and *b* the beams of a reinforced concrete floor construction composed of a plurality of T-shaped beams, whose heads are integral and form a continuous floor slab and whose webs or vertical members are joined together by lighter members, which are bonded or united to the concrete webs as will be described. The lighter members are composed of two parts or members, one of which has fire resisting properties and the other of which has weight reducing properties. The fire resisting part may be composed of terra cotta, which is molded into the form of a hollow block *c* of reduced thickness, and the weight reducing member may be composed of gypsum or like substantially light material, which is molded into the form of a hollow block *d*. The blocks *c*, *d* may be provided with interlocking means shown as a rib or projection *e* on one block entering a groove or recess *f* in the other block. In the present instance the block *c* is provided with the projection or rib *e* and the block *d* with the groove or recess *f*. The blocks *c*, *d*, are designed to be bonded or united with the webs or vertical members of the beams *b*, and for this purpose are provided on their sides with grooves or recesses 10 for the reception of projections or lugs 12 on the concrete beam *b*.

The composite blocks form part of the mold or form in which the concrete beams are shaped, the bottom of which may be represented by the dotted line 13, and said blocks are laid upon the bottom 13 of the form or mold and spaced apart the proper distances to form the beams *b*, after which the concrete in plastic form is poured or placed in the mold to fill the spaces between adjacent blocks and enter the grooves 10 in the sides of said blocks, so as to firmly bond or unite the composite blocks and concrete beams as clearly shown in the drawings. After sufficient concrete has been placed in the mold to form the beams, additional concrete is put into the mold to cover the blocks and form the floor slab *a*.

As the concrete is placed into the mold, the metal reinforcement, both for the beams and slab is placed in the mold, so as to be embodied in the completed floor construction in a manner well understood. In the present instance, only the reinforcing rods or members 20 for the beams *b* and the stirrup 21 are shown, as the metal reinforcement may be of any suitable or well known construction. By reference to the drawing, it will be seen that the fire resisting member *c* of the composite block has its lower surface flush or substantially flush with the bottoms of the beams *b* and is exposed to the action of fire, if one should occur in a building provided with the floor construction herein shown, while the weight reducing member *d* fills the space between the fire resisting member and the floor slab. It will thus be seen, that the weight of the floors of the building is materially reduced without sacrificing the fire proof qualities of the floor construction, and as a result materially lighter steel beams, girders and columns may be used, with a corresponding reduction in the cost of the building.

In Fig. 1, the concrete beams are shown as tapering in cross section, whereas in Fig. 2 they are shown oblong in cross section, and therefore it is not desired to limit the

invention to any particular shape of the concrete beam.

In the present instance, the fire resisting member *c* is shown and described as a terra cotta block, but it is not desired to limit the invention to this particular material, as said member may be made of other fire resisting material, such for instance as asbestos.

Claims:

1. In a reinforced concrete floor construction, in combination, a concrete floor slab having integral with it a plurality of concrete beams, and composite blocks located between said beams and bonded thereto and comprising a fire resisting member and a weight reducing member, the latter being located between the fire resisting member and the floor slab, substantially as described.

2. In a reinforced concrete floor construction, in combination, a concrete floor slab having integral with it a plurality of concrete beams, and composite blocks located between said beams and comprising a fire resisting member of terra cotta and a weight reducing member of gypsum, the latter being located between the terra cotta member and the floor slab, substantially as described.

3. In a reinforced concrete floor construction, in combination, a concrete floor slab having integral with it a plurality of concrete beams, and composite blocks located between said beams and comprising a fire-resisting member bonded to said beams and a weight-reducing member located between the fire-resisting member and the floor slab.

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

PEREZ M. STEWART.

Witnesses:

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