969,314.

H. H. VOUGHT, Jr.

FLOOR CONSTRUCTION.

APPLICATION FILED SEPT. 14, 1909.

Patented Sept. 6, 1910.

2 SHEETS—SHEET 1.

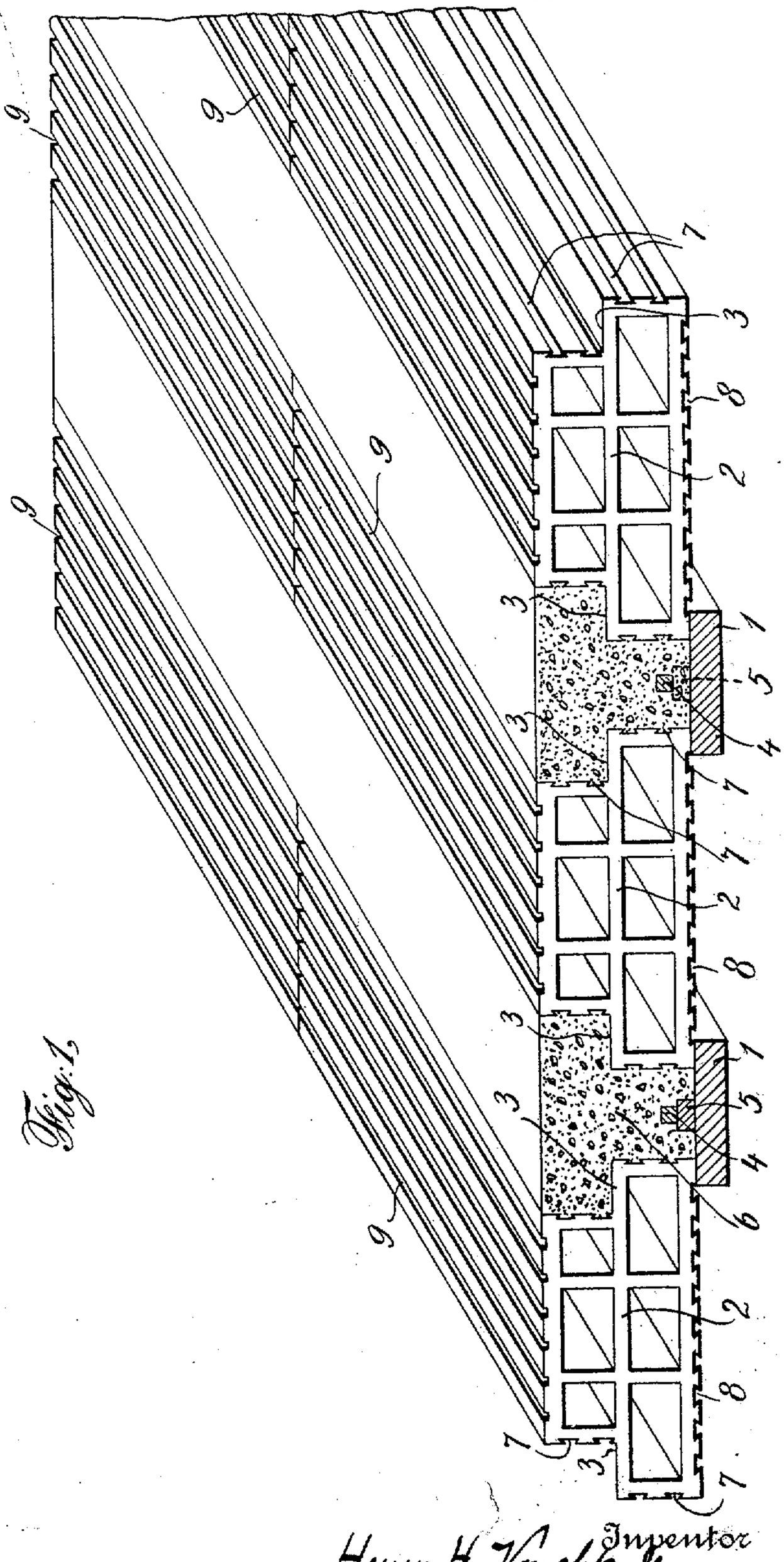

Fig. 1.

Witnesses:
Max B. A. Doring.
F. M. Dearbach

Inventor
Henry H Vought Jr.
By his Attorney
Phillips Abbott.

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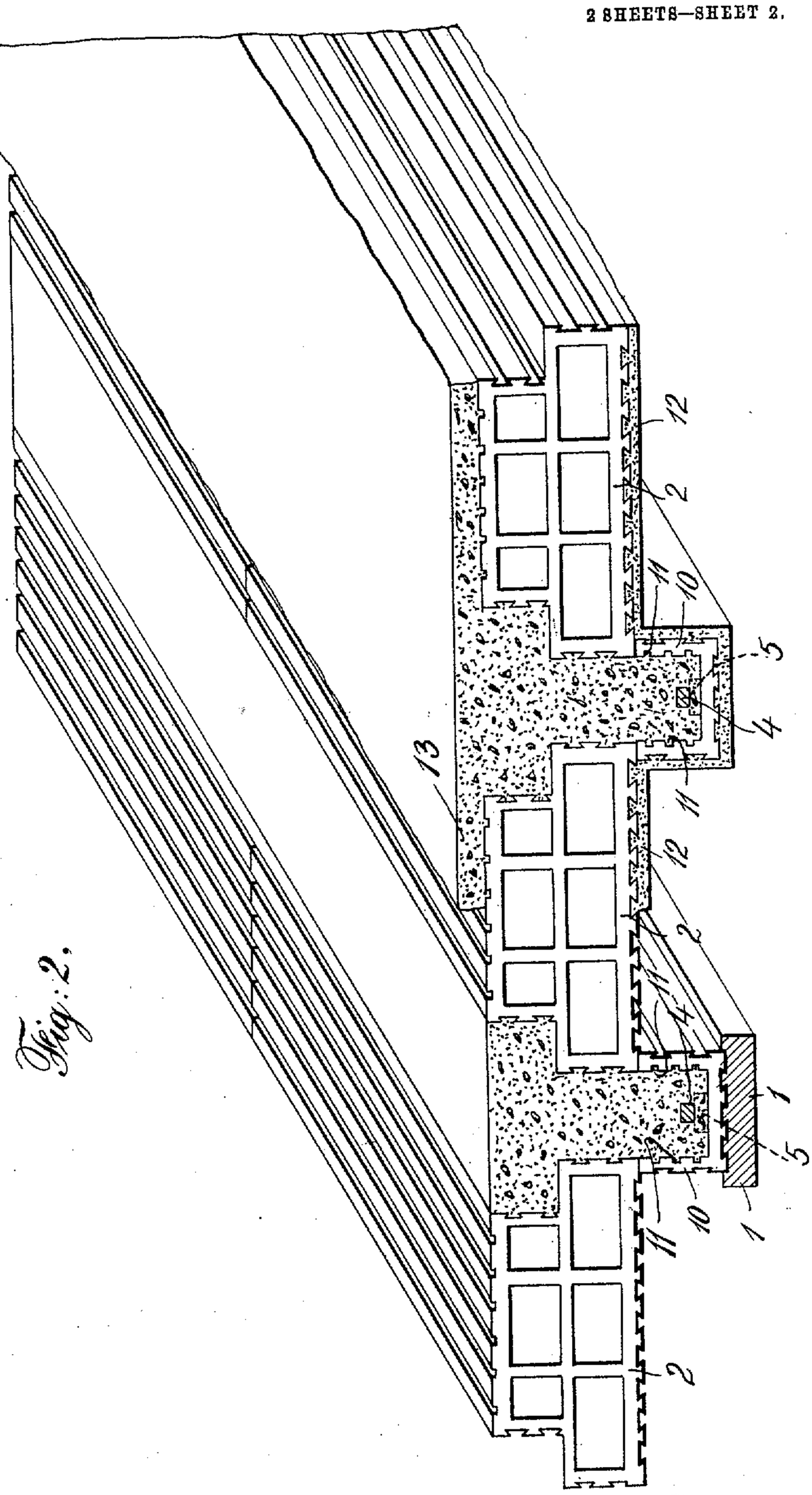

Fig. 2.

Witnesses:
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UNITED STATES PATENT OFFICE.

HENRY H. VOUGHT, JR., OF NEW YORK, N. Y.

FLOOR CONSTRUCTION.

969,314. Specification of Letters Patent. **Patented Sept. 6, 1910.**

Application filed September 14, 1909. Serial No. 517,573.

To all whom it may concern:

Be it known that I, HENRY H. VOUGHT, Jr., a citizen of the United States and a resident of Bronxwood Park, Williams Bridge, county of Westchester, city and State of New York, have invented a new and useful Floor Construction Embodying Tile or Building Blocks in Connection with Concrete Beams, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 illustrates a perspective view of the parts involved in the invention and their coöperative arrangement; Fig. 2 illustrates a perspective view of a modified form of the invention.

In the construction heretofore of fireproof flooring a large part of the expense has been necessitated by the amount of time and material required for the erection of the so-called "centering", in other words, the frame-work upon which the floor is built; also by the large amount of metal required for the reinforcing and finally by the large amount of concrete work necessarily employed therewith.

It is the purpose of this invention, therefore, to provide a construction whereby economy may be realized in all the above respects, since it requires the minimum of centering, of metal reinforce and of concrete aggregates, and which will have large carrying capacity and will be capable of use in long spans.

Referring now to the drawings, the method and the parts employed by me are as follows:

1, 1, represent ordinary two inch planks, preferably ten or twelve inches in width and of the desired length. They are erected upon suitable supports, as, for example, ordinary two by four studding, and run in the direction in which it is desired to have the concrete T beams run. After the planks have been accurately leveled, the floor tile, or construction blocks, 2, 2, are arranged in straight lines upon the centering plank, so that the edges of the tile rest upon the edges of the plank, as illustrated. The distance between the sides or edges of the tile, in other words, their separation from each other, will depend upon the desired width of the vertical member of the concrete T beam between them. These tile may be vitrified, salt glazed, or porous, and of such length and width as preferred and they may be hollow as illustrated, or solid. I prefer in ordinary cases that they should be about twenty four inches wide, although they may have greater or less width, and of such length as desired, preferably as long as they can conveniently and safely be made. It is not necessary that the voids or hollow spaces within the floor tile should be exactly as illustrated, although that is a good form in which to make them. The voids may be of any preferred shape and number, or the tile may be solid. I prefer, however, for well known reasons, that they should be hollow; but the tile should be recessed at their upper corners, as shown at 3, 3, so as to afford space in which the concrete may extend laterally to form the upper or horizontal member of the T beam.

After the tile have been accurately placed as stated upon the centering timber work, a reinforcing metal rod 4, is dropped into place about midway between the edges of the floor tile, as shown at 4, and in order that it may be embedded in the concrete, I prefer to support it upon broken bits of tile or brick or equivalent material 5, which will properly bond in with the concrete when it is supplied. The parts being in this position, the concrete 6 is then poured into the mold or channel formed by the sides of the floor tile, having the plank centering as its bottom. The concrete is preferably made quite fluent, so that it will flow (especially if tamped) into all the corners and into the dovetailed or similar locking surfaces 7 of the tile, and will also flow about and inclose the reinforcing metal, filling all the vacant spaces and corners throughout all of these surfaces.

I prefer to provide the floor tile on their under surfaces with dovetailed or similarly shaped recesses 8, so that the ceiling material may be more securely held thereto and also with grooves, corrugations, or other roughenings 9, on their upper sides, whereby the flooring cement will be more securely and firmly held thereto.

In Fig. 2 I show a construction which is substantially the same as that above described and the same numbers of reference apply to the same parts. In this construction, however, I illustrate a method in which the depth of the vertical member of the T beam may be increased, thus materially adding to its strength. This is effected as follows: Trough shaped tile 10, which are pref-

erably made as long as the floor tile 2 and the open troughs in which are preferably as wide as it is desired to have the vertical member of the concrete, are placed in a row down the middle of the centering plank, as shown at the left in Fig. 2. The floor tile are then laid along upon the upwardly presented edges of the trough-like tile, as shown, so that the inside of the open or trough-like space in the tile 10 and the line of the sides of the floor tile 2 will coincide. Thereupon the reinforcing material 4, supported upon suitable supports 5, as before, is introduced, and then the concrete is supplied, as before. I prefer, when erecting this construction, to at the same time lay the concrete upper floor (not including of course the finishing or skin coat), so that all the concrete being applied at the same time, it will thoroughly bond itself together into a monolithic structure.

I prefer to provide the inner surface of the trough-like tile 10 with recesses or corrugations 11, into which the concrete will enter, whereby the trough-like tile will be immovably, and permanently held in position.

At the right hand of Fig. 2, I illustrate at 12 the ceiling finishing coat and at 13 the rough floor of concrete.

It will be seen that under my method of construction, the tile may be made of any desired width, within reasonable limits, (I prefer in ordinary cases that they shall be from twenty to thirty inches); also all that is necessary to secure an accurately laid and true floor is to properly locate and support the centering plank, which is an extremely simple, inexpensive and quickly performed operation; because these planks thereafter during all the operations serve not only as an accurate and reliable guide, properly determining the positions of all the parts, but likewise afford means whereby the reinforcing material may be properly located and finally, in conjunction with the opposed sides of the floor tile, the centering plank constitute a mold of such shape that the concrete, when applied, will automatically and without any thought on the part of the craftsman or laborer, form itself into a T beam and at the same time will flow about and inclose the metal reinforce, and also flow into the dovetailed locking surfaces on the sides of the tile, whereby they will be immovably and permanently held in position, the result being a floor having large carrying capacity, adapted for use in long spans and which is constructed with the least amount of centering material, the least amount of steel and concrete and with a minimum of labor. Moreover, since the tile are hollow, and constitute a much larger percentage of the total floor than heretofore possible, the structure when completed has the minimum of dead load present in the floor itself.

It will be obvious to those who are familiar with such matters that various modifications may be made in the details above described and illustrated. I therefore do not limit myself to such details.

I claim:

A fire-proof floor, comprising parallel rows of hollow tiles with an intervening T-shaped space between each two rows, each tile being in the form of an inverted T, and T-shaped concrete beams filling the space between the rows of tiles having a dovetailed locking connection therewith and extending from the upper plane of the tiles to a plane below the bottom thereof and a row of trough-shaped tiles arranged beneath each beam and inclosing that part of the beam which is arranged below the tiles.

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

HENRY H. VOUGHT, Jr.

Witnesses:

PHILLIPS ABBOTT,

EDWIN F. VALENTINE.