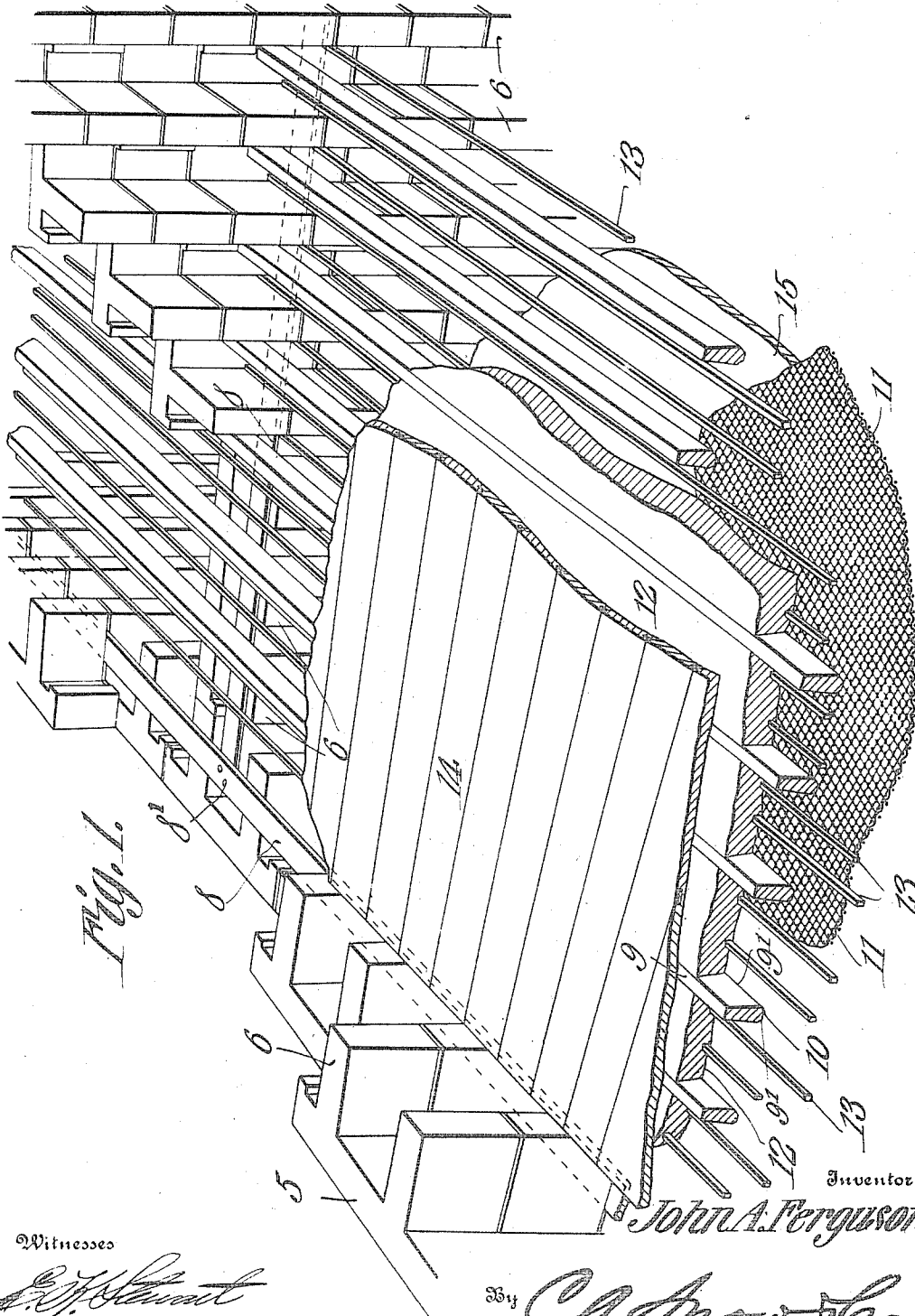


J. A. FERGUSON.
 CONCRETE FLOOR CONSTRUCTION.
 APPLICATION FILED APR. 30, 1909.

1,051,376.

Patented Jan. 21, 1913.

3 SHEETS—SHEET 1.



Witnesses

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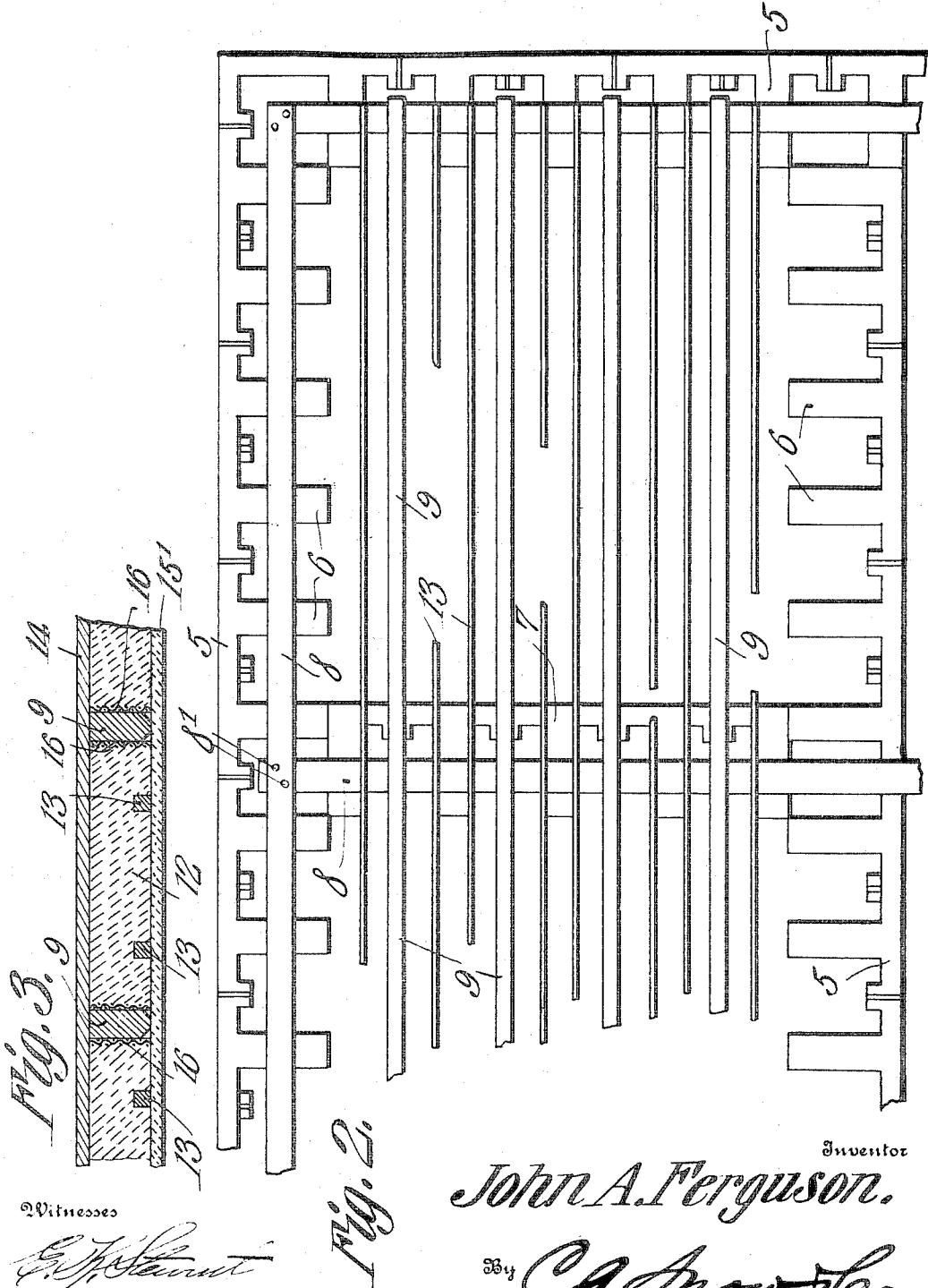
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3 SHEETS—SHEET 2.



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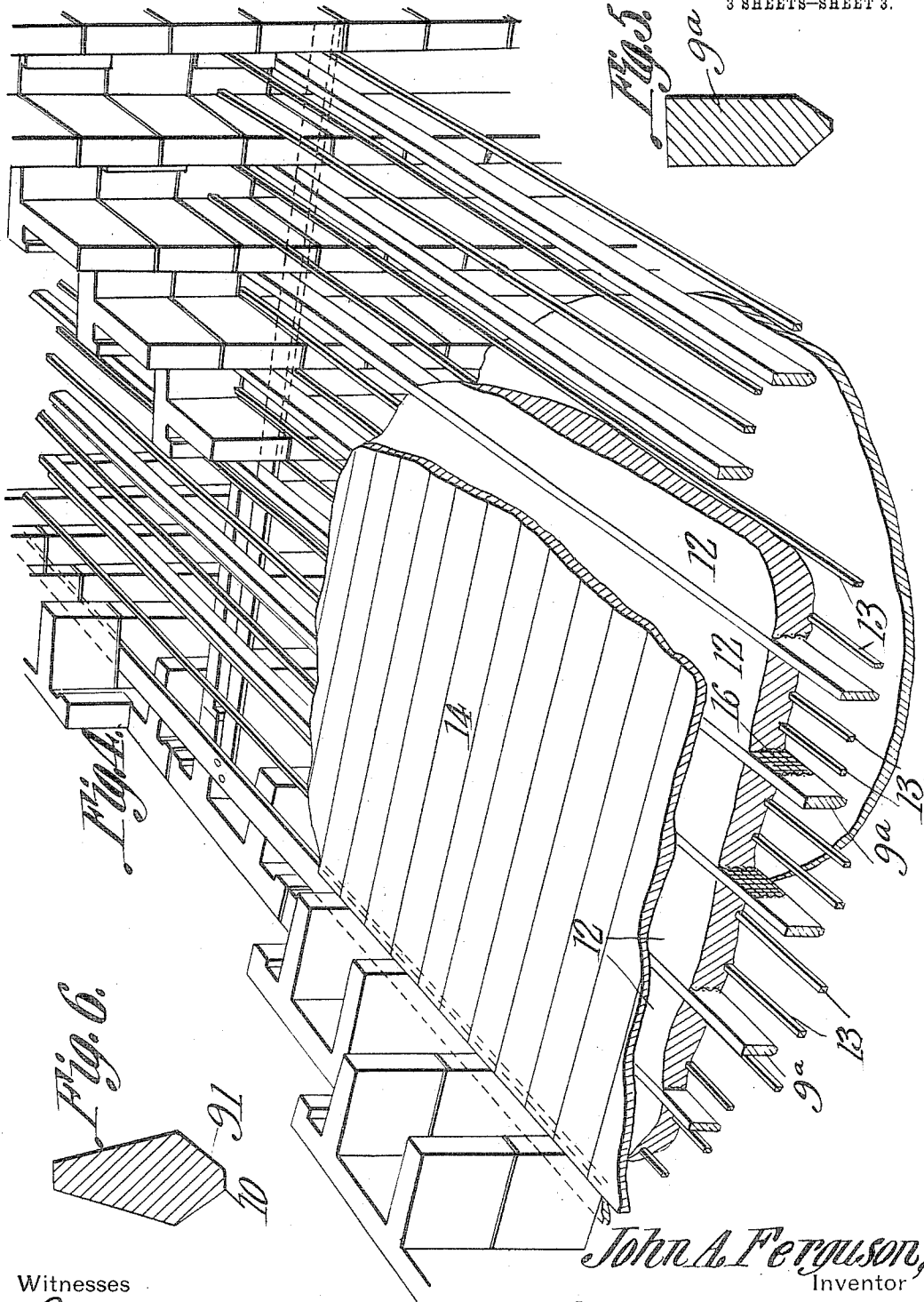
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

JOHN A. FERGUSON, OF DENVER, COLORADO.

CONCRETE FLOOR CONSTRUCTION.

1,051,376.

Specification of Letters Patent.

Patented Jan. 21, 1913.

Original application filed August 14, 1908, Serial No. 448,600. Divided and this application filed April 30, 1909. Serial No. 493,163.

To all whom it may concern:

Be it known that I, JOHN A. FERGUSON, a citizen of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented a new and useful Concrete Floor Construction, of which the following is a specification.

This invention relates to concrete floors for use in artificial stone, brick, or other masonry structures and it is more particularly a division of an application filed in the United States Patent Office by me on August 14, 1908, Serial No. 448,600.

The object of the invention is to provide a concrete floor in which the supporting joists are effectually anchored to the side walls of the building and are maintained in spaced relation by an intermediate filling of cement or other similar plastic material.

A further object is to reinforce and strengthen the floor by the provision of spaced transverse bars which are embedded in the concrete between the joists.

With these and other objects in view the invention consists in certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings Figure 1 is a perspective view partly in section of a portion of a building provided with a floor constructed in accordance with the present invention, parts of the floor being broken away to more clearly illustrate the construction thereof. Fig. 2 is a top plan view. Fig. 3 is a transverse section through a portion of a modified form of floor. Fig. 4 is a view similar to Fig. 1 and showing said modified form of floor. Fig. 5 is an enlarged transverse section through one of the joists shown in Fig. 4. Fig. 6 is an enlarged transverse section through one of the joists shown in Fig. 1.

Similar numerals of reference indicate corresponding parts in all of the figures of the drawings.

The improved floor construction forming the subject matter of the present invention may be used in connection with brick, stone or other masonry structures and by way of illustration is shown in connection with a building in which the side, partition and end walls thereof are formed of artificial

stone building blocks 5, the inner face of each of which is provided with spaced inwardly extending wings or lugs, indicated at 6.

Surrounding the walls of the building and also the partition 7 is a binding member 8 consisting of a plurality of metallic bars or strips preferably interposed between the wings 6 of adjacent bricks or blocks and having their adjacent ends riveted or otherwise rigidly united at the corners of the building, and at the partition 7, as indicated at 8', thereby to reinforce and strengthen the building and assist in binding the side, partition and end walls of the latter together. The flat metallic strips constituting the binding member 8 are preferably spaced inwardly from the inner faces of the blocks 5 to form supports for the terminals of the joists 9, as best shown in Fig. 2 of the drawings.

The joists 9 are preferably formed of wood and are each inclined or beveled in opposite directions to form a relatively narrow bearing surface 10 at the lower longitudinal edge thereof for engagement with the laths or with a strip of wire gauze, netting or other foraminous material, indicated at 11. Interposed between the joists 9 is a concrete filling 12 and embedded in the concrete between each of the joists are a plurality of spaced reinforcing bars or rods 13, the opposite ends of which rest upon the adjacent flat bars constituting the binding member 8. The concrete filling 12 is preferably troweled off flush with the upper longitudinal edges of the joists 9 so that tongue and grooved boards or other suitable floor finish 14 may be nailed or otherwise rigidly secured thereto. The side walls of the joists 9 are preferably inclined or beveled at 9' to form substantially V shaped pockets for the reception of a cement or concrete filling 12, the inclined walls of said joists serving to prevent accidental displacement of the concrete filling.

In constructing the building the blocks 5 are disposed in superposed courses and arranged to break joint, with the wings 6 of the several blocks disposed in alinement to form a series of vertical flues around the inner face of the building. At each floor or story of the building, or at other spaced intervals one or more binding members 8 are placed upon the wings 6 of the blocks con-

stituting the side, end and partition walls, and the blocks of the next succeeding course placed in position thereon, as best shown in Fig. 1 of the drawings, the mortar between the wings of mating blocks serving to assist in preventing accidental displacement of the binding member. The joists 9 are then placed in position with the opposite ends thereof resting on the binding member 8 and the laths or plaster supporting material 11 nailed, stapled or otherwise fastened to the beveled edges of said joists, the reinforcing rods being subsequently placed in position between the joists with the opposite ends of the rods resting on the binding member. A temporary sheathing or flooring is then nailed to the lower or inclined edges of the joists 9 and the concrete 12 introduced between the joists and tamped in the usual manner, the upper surface of the concrete being troweled off flush with the joists so as to permit the tongue and grooved boards or other suitable floor finish to be positioned on the upper longitudinal edges of said joists. The lower portion of the concrete will rest upon the supporting material 11 and be properly supported thereby. After the concrete has sufficiently set the temporary floor or sheathing is removed and the lower surface of the floor structure coated with a layer of plaster or cement indicated at 15, the wire netting 11 serving to assist in retaining the plaster in position on the lower face of the floor structure and also to assist the joists in holding the concrete in place. If desired, however, the wire netting 11 may be omitted and the plaster applied directly to the concrete, as indicated at 15' in Fig. 3 of the drawings.

When joists 9^a having oppositely disposed parallel faces are employed in the construction of the floor, suitable strips of expanded metal, wire netting or the like may be applied to opposite faces of the joists, as indicated at 16 in Fig. 3, in order to assist in retaining the concrete within the pockets formed between said joists.

By beveling the lower portions of the joists shown in Figs. 1 and 4, very narrow edges are presented to the temporary ceiling or flooring used in the construction of the concrete floor and, when the concrete is placed upon this temporary ceiling it conceals the greater portion of the lower edge of each joist, only the narrow space between the two beveled faces being exposed. The joists are thus considerably reinforced by those portions of the concrete extending under the beveled faces thereof and are locked

against buckling downward under the weight of the concrete or of a load placed upon the floor.

In some cases the joists may be supported directly on the bricks or blocks constituting the side, end and partition walls of the building.

A floor erected in accordance with the present invention is strong and durable in construction and is not only capable of sustaining enormous weight but also assists in reinforcing and strengthening the side walls and prevents bulging or spreading thereof.

It is of course to be understood that the structure herein described can be used in the formation of roofs as well as floors, the only difference being that in lieu of the so-called floor finish, a covering of roof tiles, shingles, or any other suitable material may be employed and by the use of the term "floor finish" it is intended to cover any such material.

What is claimed is:

1. In building construction, the combination with walls and binding members supported thereby, of floor supporting joists resting on said members and each having its lower longitudinal edge inclined or beveled in opposite directions to form a relatively narrow bearing face, a concrete filling interposed between the joists, spaced reinforcing bars embedded in the concrete filling but resting on the binding members, concrete supporting material secured to the joists, a plaster coating upon the bearing faces of the joists, and a floor finish secured to the upper longitudinal edges of the joists and covering the concrete.

2. In building construction, the combination with walls and binding members supported thereby, of joists resting on said members and each having upwardly converging side portions forming a relatively narrow bearing face therebetween, a concrete filling interposed between the joists, spaced reinforcing elements embedded in the concrete filling but resting on the binding members, concrete supporting material secured to the joists, and a finish secured to the upper longitudinal edges of the joists and covering the joists and concrete.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JOHN A. FERGUSON.

Witnesses:

KARRIE FERGUSON,
KATE QUIGLEY.