

No. 636,569.

Patented Nov. 7, 1899.

F. SELBY.

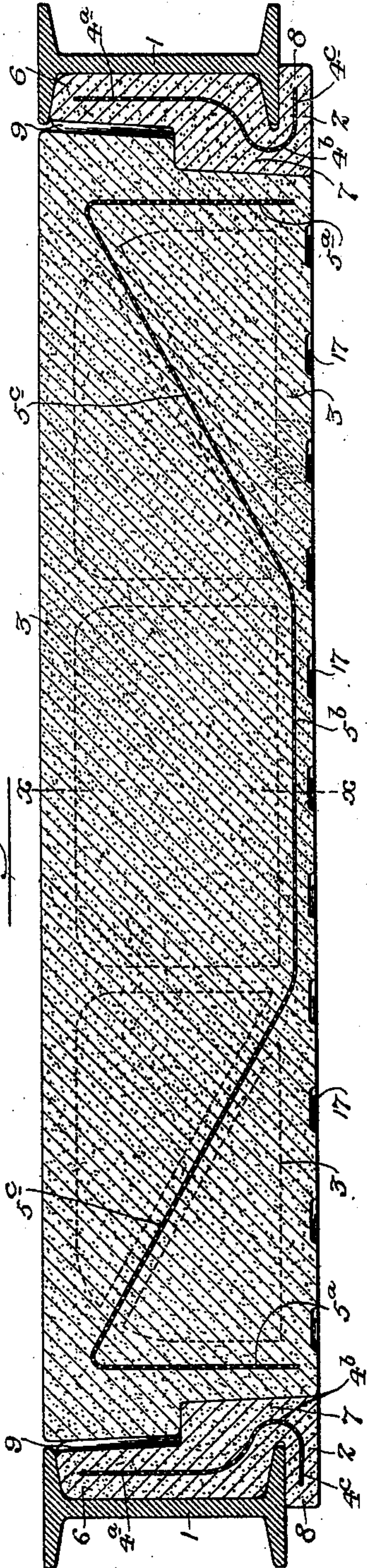
FIREPROOF FLOOR CONSTRUCTION.

(Application filed Feb. 15, 1899.)

(No Model.)

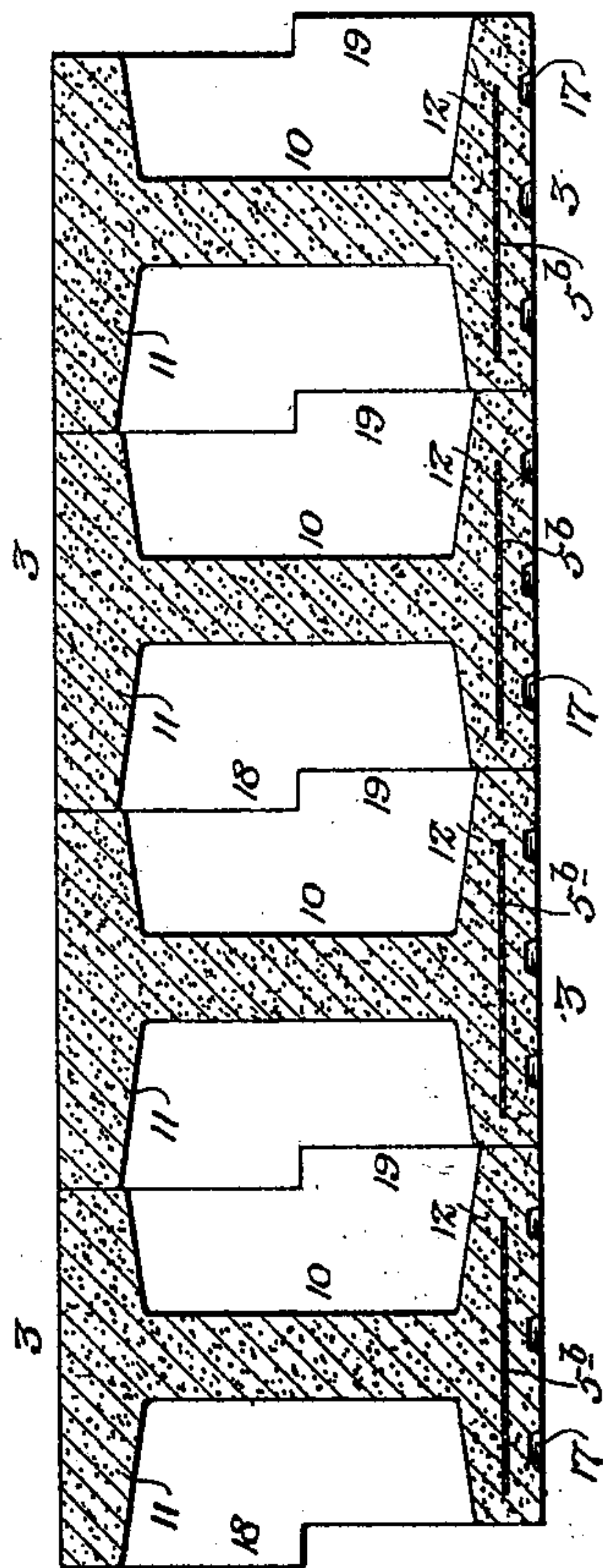
2 Sheets—Sheet 1.

Fig. 1.



Witnesses:-
M. M. Boyer
Louis M. Whitehead.

Fig. 2.



Inventor:-
Frederick Selby
by his Attorneys:-
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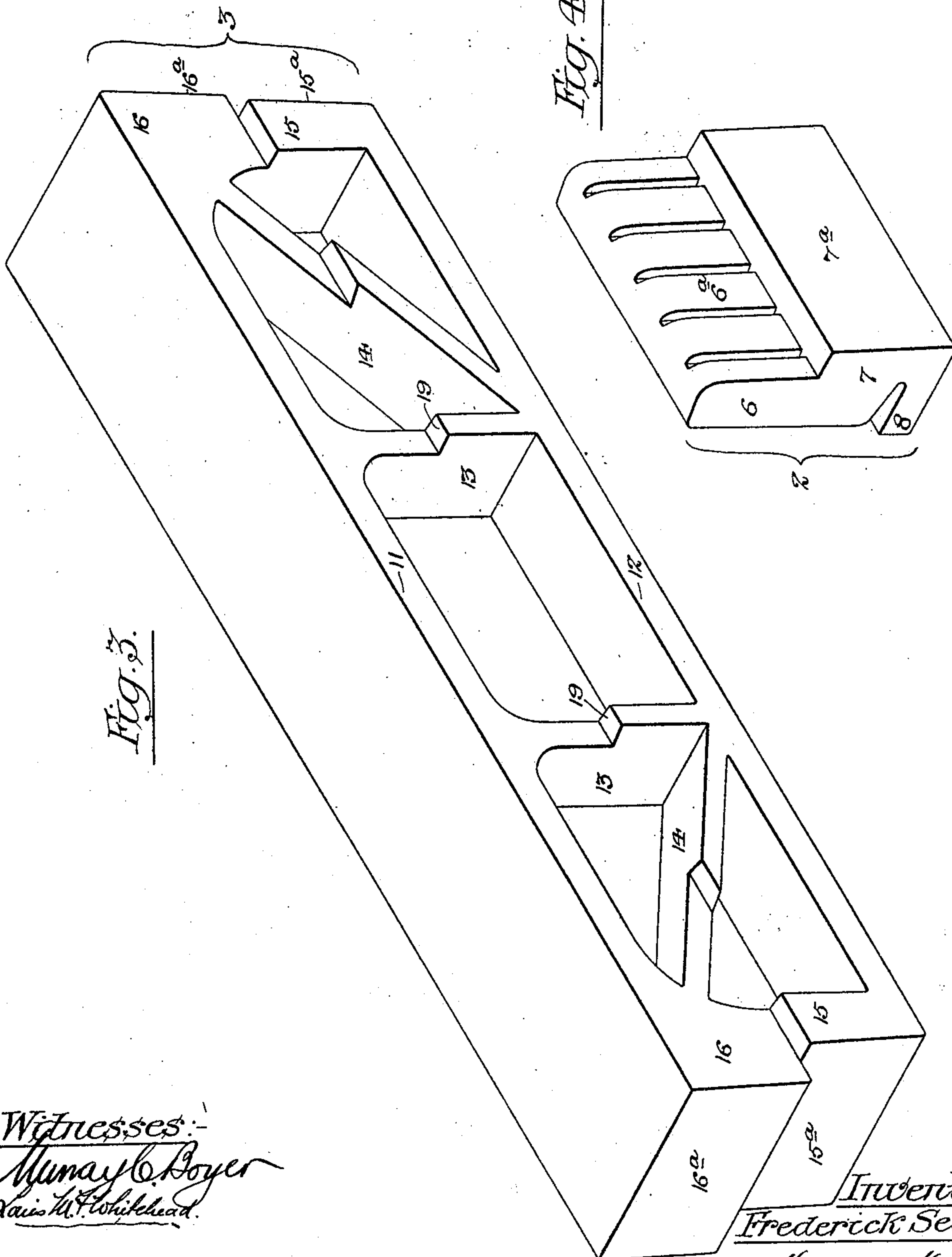
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Mumay C. Boyer
Charles H. Whitehead.

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UNITED STATES PATENT OFFICE.

FREDERICK SELBY, OF CHESTER, PENNSYLVANIA, ASSIGNOR TO JAMES C. FENDER, OF SAME PLACE.

FIREPROOF-FLOOR CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 636,569, dated November 7, 1899.

Application filed February 15, 1899. Serial No. 705,530. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK SELBY, a citizen of the United States, and a resident of Chester, Delaware county, Pennsylvania, have
5 invented certain Improvements in Fireproof-Floor Construction, of which the following is a specification.

My invention relates to fireproof flooring for buildings in which the floor-supports are
10 in the form of the usual metallic I-beams. The space between these beams is usually filled in with some form of masonry or with blocks of fire-brick or other plastic material,
15 the blocks which span this space being so arranged as to be supported on the flanges of the beams.

My invention comprises certain improvements in the form and character of blocks made of plastic material, preferably calcined
20 plaster, and is fully illustrated in the accompanying drawings, in which—

Figure 1 is a cross-section of a portion of a floor structure, showing the I-beams and skewbacks fitting the same, with filling-blocks
25 of the same material resting on offset portions of the skewbacks. Fig. 2 is a cross-section of the filling-blocks, taken on the line $x x$, Fig. 1. Fig. 3 is a perspective view of one of the filling-blocks, and Fig. 4 is a perspective
30 view of one of the skewbacks.

My invention consists in combining with both the skewbacks and the filling-blocks molded from plastic material, preferably calcined plaster, a metallic reinforce in the shape
35 of a sheet of expanded metal (metallic lathing) or a perforated plate of sheet metal, either flat or corrugated, or a strip of wire-gauze or other reticulated structure in such manner that said reinforce will add to the strength of
40 the blocks at the points where strength is most needed.

The blocks forming the subject of my invention are cast in suitable molds, and the sheet of metal forming the reinforce, previously bent into the required shape, is laid in
45 the molds preparatory to pouring in the plastic material. The blocks thus formed serve as a fireproof filling for the space between

the I-beams of the floor structure. In filling this space both forms of the block are used, 50 the skewbacks on either side conforming to and fitting against the I-beams snugly and being provided with shoulders or steps, the outer faces of the skewbacks being inclined and the filling-block being adapted to fit between the skewbacks and having projecting 55 portions adapted to rest on the shoulders or steps of the skewbacks, the faces of the offset ends of the filling-block also being inclined so as to fit the skewbacks. 60

In the drawings, 1 1 represent the floor-beams of a building, platform, or other permanent structure designed to be fireproof. 2 2 are the skewbacks, fitting against these floor-beams, and 3 is the filling-block, closing 65 the space between the beams and adapted to rest on and hold the skewbacks in place. Both the skewbacks and filling-block are provided with metallic reinforces. The skewbacks are shaped so as to fit the beams, the upper part 6 of the same (the narrowest portion) 70 being slightly wider than the projecting flange of the beam and the lower portion 7 being extended in the shape of an offset upon which the ends of the filling-blocks rest. The lower 75 part of the skewback fits over the bottom flange of the beam, and a portion 8 extends under the same, being of a sufficient length to meet a similar portion of a skewback located on the other side of the beam, thereby 80 entirely closing the bottom flanges of the beam by the skewbacks. I find by actual experiments that the exposed surface of the blocks of calcined plaster when subjected to a high degree of heat recalcines and forms a 85 skin or flake of powder of a depth of about one-quarter of an inch, which will cling to the rest of the material of which the block is made and will act as a perfect non-conductor of heat, preventing the further burning or 90 calcining of the blocks, thereby protecting from heat and preventing the distortion of the beams inclosed by the skewbacks.

The metallic reinforce of the skewback is continuous and comprises the vertical portion 4^a in the upper part of the same, the 95

curved portion 4^b in the lower part, and the flat portion 4^c, extending under the lower flange of the beam. The upper part 6 of the skewback is provided with grooves 9 on its outer face, that face against which the end of the filling-block abuts, and these grooves are for the reception of a liquid mixture of the plastic material composing the skewbacks and filling-blocks, so that they may be united in a homogeneous mass. The faces 6^a and 7^a of the skewbacks are slightly inclined, so that the filling-blocks, which have correspondingly-inclined faces at their ends, will act as keys when set in place.

The filling-blocks 3 are I shape in cross-section, comprising the central web 10 and top and bottom flanges 11 and 12. Connecting the top and bottom flanges at regular intervals throughout the length of the filling-blocks are vertical ribs 13, and extending from the upper opposite ends of these blocks to the point where the ribs 13 join the base-flanges 12 are inclined ribs 14, for a purpose to be hereinafter specified. The filling-blocks are provided with solid rectangular ends 15, including overhanging projections 16, adapted to rest on the steps or offsets of the skewbacks. The two faces 15^a and 16^a of the ends of the filling-blocks are inclined to correspond with the inclined faces of the skewbacks 2. The metallic reinforce in the filling-blocks 3 is of the shape shown in the sectional view, Fig. 1, comprising the vertical end portions 5^a, the portion 5^b, located in the lower flange of the blocks, and the inclined portions 5^c, connecting the vertical and horizontal portions, as shown, said inclined portions being embedded in the inclined ribs 14 of the filling-blocks, so that the reinforce follows the lines of strain to which the filling-block is subjected. The under surface of the filling-blocks is provided with a series of shallow depressions 17, which serve to hold the ceiling-plaster placed thereon.

The filling-blocks 3 are provided at the sides with opposite offsets portions 18 and 19, top and bottom, as shown in the sectional view, Fig. 2, and the perspective view, Fig. 3. This construction permits the blocks to overlap each other when laid in place and provides for mutual support of the blocks one by another.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. The combination with a molded block of fireproof material, of a metallic reinforce consisting of a sheet of perforated or reticulated metal, said sheet being nearly the same width as the molded block and bent in the shape of an inverted truss with vertical extensions adjacent to the ends of said blocks, substantially as described.

2. The combination with a molded block of fireproof material, of a metallic reinforce con-

sisting of a sheet of perforated or reticulated metal in the shape of an inverted truss with vertical extensions adjacent to the ends of said block.

3. The combination with a molded block of fireproof material, of a metallic reinforce consisting of a continuous sheet of perforated or reticulated metal arranged within the same, said sheet being bent in the shape of an inverted truss with vertical extensions adjacent to the ends of said block, adapted to follow the lines of strain to which the block will be subjected when built in the floor structure.

4. The combination in a fireproof-floor structure, of the floor-beams, a series of skewbacks adapted to fit the contour of said beams and rest on the same and having angular offsets, a metallic reinforce in each of said skewbacks bent to conform to the shape of the same with a filling block or blocks adapted to fill the space between the skewbacks and rest on the offset portions of the same, said filling-blocks also having metallic reinforces, so arranged in said blocks as to take up the strain to which they will be subjected, substantially as described.

5. The combination in a fireproof-floor structure, of the floor-beams, a series of skewbacks adapted to fit the contour of the same and having angular offsets, metallic reinforces located in said skewbacks and serving to stiffen the same in the offset portions, with a filling block or blocks adapted to fill the space between the skewbacks and having portions adapted to rest on the offset portions of the same, said filling-blocks being provided with metallic reinforces so arranged in said blocks as to follow the lines of strain to which the blocks will be subjected when built in the floor structure, substantially as and for the purpose set forth.

6. As a new article of manufacture, a filling-block for fireproof-floor construction, comprising a molded block of suitable material, substantially I shape in cross-section and having a series of vertical and inclined ribs springing from the central web of the block, the upper and lower flanges of the block and the ribs having offset portions top and bottom on opposite sides, substantially as and for the purpose described.

7. In a fireproof-floor structure, a filling-block adapted to fit in the space between the floor-beams, said block having solid ends, a central web, upper and lower flanges connected by the same, a series of ribs arranged on either face of said web connecting the top and bottom flanges, some of said ribs being inclined, with a metallic reinforce disposed in the solid ends, the inclined ribs and a portion of the base-flange of the block, substantially as shown and described.

8. The combination in a fireproof-floor structure, of the beams, skewbacks having angular offsets adapted to said beams, and a

series of filling-blocks adapted to rest on the offset portions of said skewbacks, said filling-blocks being substantially I-shaped in cross-section with offset portions top and bottom on
5 opposite sides, and so arranged in the structure as to form substantially air-tight spaces between the central webs of the same.

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

FREDERICK SELBY.

Witnesses:

MURRAY C. BOYER,
JAMES C. KRAYEY.