No. 620,187. Patented Feb. 28, 1899.

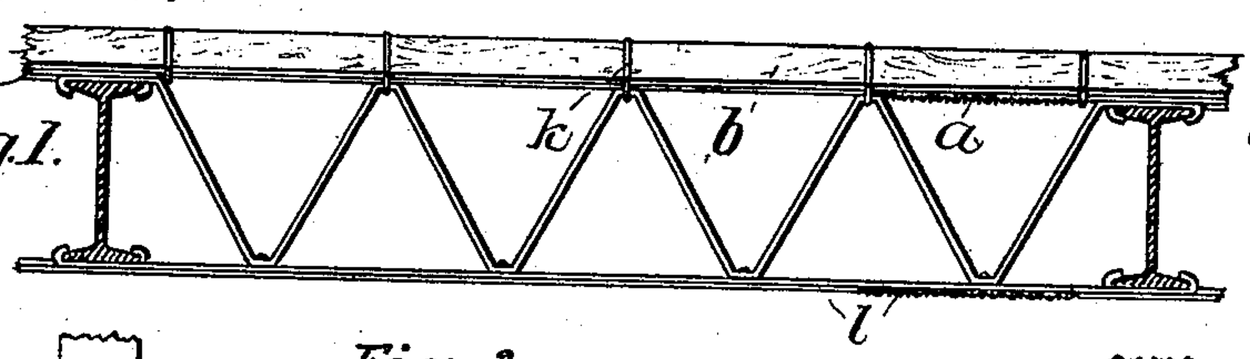
F. W. SETTAN.

FIREPROOF FLOOR CONSTRUCTION

(Application filed Apr. 22, 1898.)

(No Model.)

Fig. 1.



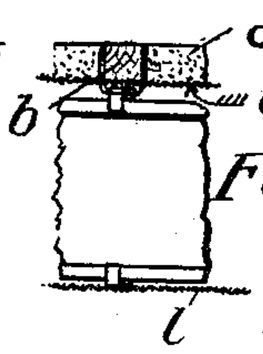


Fig. 3.

Fig 2.

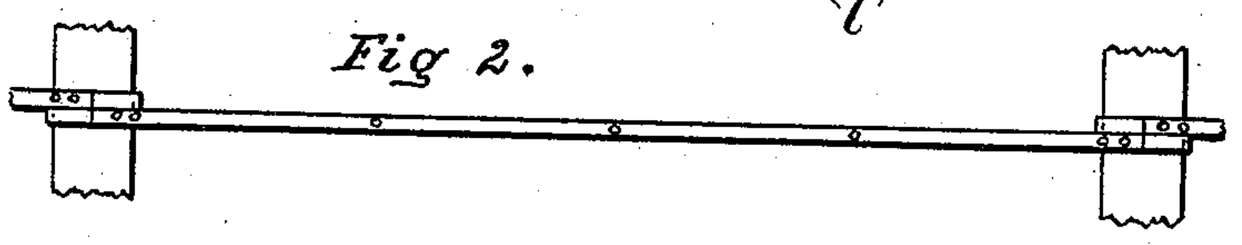


Fig 4.

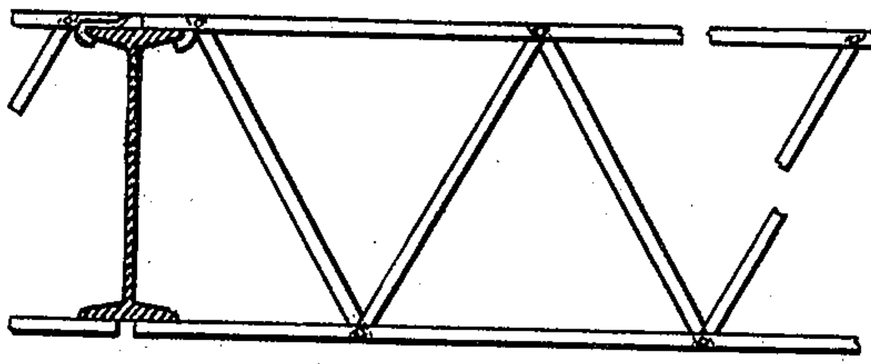
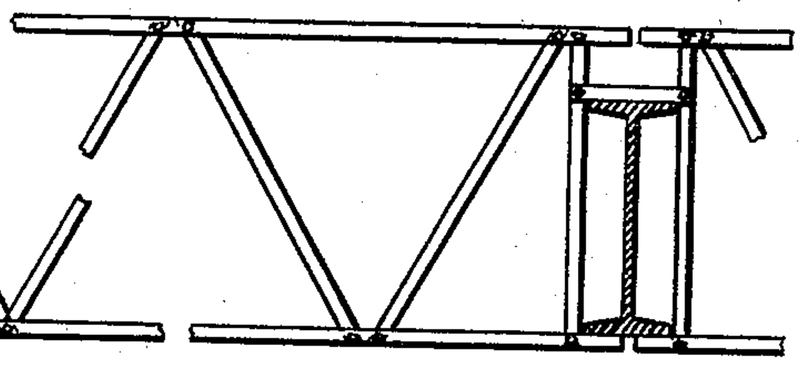


Fig 6.



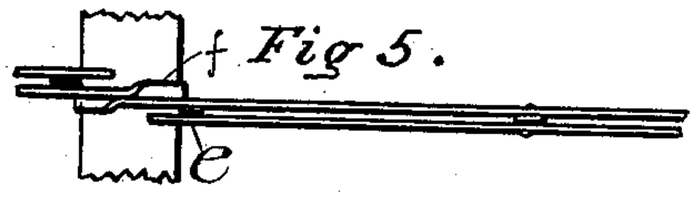


Fig 5.

Fig 7

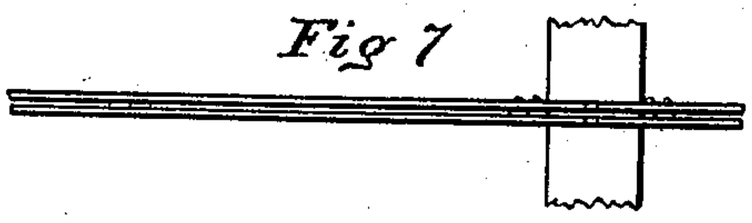


Fig 8.

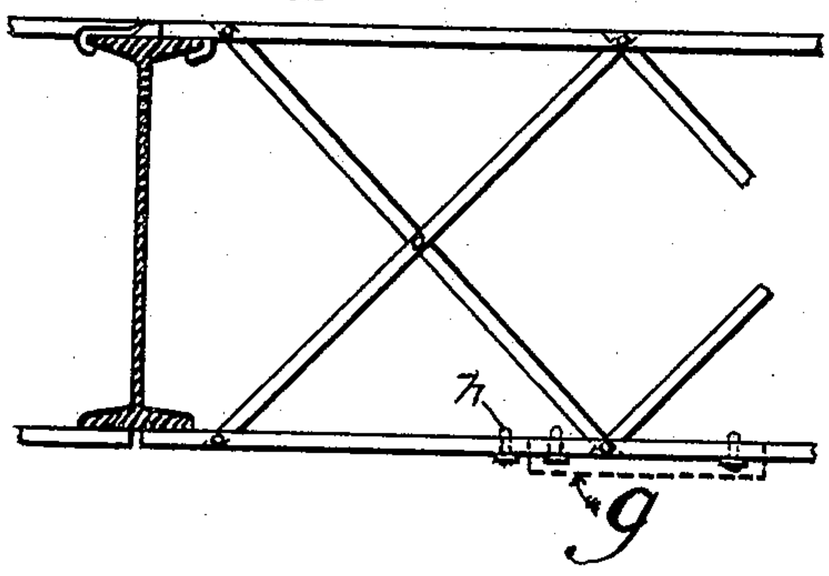


Fig 9.

Fig 10.

Witnesses:

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UNITED STATES PATENT OFFICE.

FREDERICK W. SETTAN, OF NEW YORK, N. Y.

FIREPROOF FLOOR CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 620,187, dated February 28, 1899.

Application filed April 22, 1898. Serial No. 678,532. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK W. SETTAN, a citizen of the United States, residing in New York, Manhattan borough, and State of New York, have invented a new System of Fireproof Floor Construction, of which the following is a specification.

The invention consists of a series of single little riveted or bolted trusses with straight top and bottom chords, always transmitting their load to the top of the beams, built up out of small bars, angles, or grooved bars or composed of all the sections mentioned above, either of soft steel or wrought-iron, as the case may require it, and fastened to the floor-beams in the manner as shown by the accompanying drawings.

Figures 1 to 8 upon the drawings represent in all cases the outline of trusses irrespective of size, shape, and form in section of truss members.

Figs. 1 and 2 represent in elevation and top view a truss for a light floor-load and floor-beams to about nine inches in depth. Figs. 4 and 5, the elevation and top view, show a truss for a heavier floor-load and for floor-beams not exceeding fifteen inches in depth. Figs. 6 and 7 show an arrangement in elevation and top view of a truss to be placed between two floor-beams of uneven depth, but being flush on bottom, as usually is the case. At the higher beam the connection is to be the same as in Figs. 4 and 5. For deep beams from eighteen to twenty-four inch trusses, as shown in elevation by Fig. 8, shall be used. Though it is not absolutely necessary that the combination of the trusses with the deepest beams and those of considerable less depth is limited, as before described, they are to be applied as the several cases may require. In a similar manner the trusses can be applied for roofs.

The ends of one of the top members of each truss are always bent around the edge of the top flange of the floor-beams. In some cases it may be necessary to twist these ends before the bending, as is shown in Figs. 4, 5, and 8 at *f*, though a piece of bar might be riveted between these members in the space *e*, Fig. 5, and take the place of the twisted and bent ends of the top members, which secures said beams against buckling sidewise. On the top of these trusses wire-cloth, expanded metal, or corrugated iron (indicated by letter *a*, Fig. 3) in variable sizes is stretched and fastened by means of wire to the top member of the trusses, preventing said trusses from buckling sidewise.

For the fastening of wooden flooring a nailing-strip *b*, Figs. 1 and 2, of suitable size, is placed directly over some of the trusses at such intervals as required, also fastened to the top member of the truss by means of wire, as indicated on Fig. 1, (marked *k*.) The spaces between the nailing-strips are filled with cement, mortar, or concrete *d* to the level of said nailing-strips.

For a tile floor a layer of cement, mortar, or concrete of about two-inches thickness is spread over the entire stretched metal surface for the reception of the tiling. In each case the cement, mortar, or concrete is considered as a filling material and not as a strengthening agent.

For the ceiling, it being in all cases a straight surface, the bottom chord of the trusses extending its full depth below the bottom of the beams, preventing the ceiling material from coming in contact with said beams, wire-cloth or any other perforated metal (indicated by letter *l*, Figs. 1 and 3) for the reception of the plastering is stretched at the bottom of the trusses and fastened by means of wire. If for the reception of the plastering terra-cotta tile slabs are preferred, then the bottom member of the trusses can be composed of two angles, as shown in section by Fig. 10. On the horizontal legs of the angles of two adjacent trusses the grooved tiles (marked in dotted lines) can be slid to their rest. If, however, the bottom member is composed of flat or grooved bars, then the ceiling-tile can be fastened by means of a small strip of iron or steel, (marked *g* in Figs. 8 and 9,) having a hole for a wire nail, (marked *h* on same figures,) which is placed between the bars of the bottom member of the truss and bent to a hook, as clearly shown in Figs. 8 and 9. The drawings in these figures show the bottom chord in section composed of flat bars. If grooved bars are preferred, then the bending of the wire nail is to be done in a like manner. Fig. 10 is a section of a detail. For each end of the tile-slab two of these iron

or steel strips are required, as indicated on Fig. 8, the tiling represented by dotted lines at *c*. The inclination of the web members will vary to suit their special cases and the size of a chosen section for the members of trusses must be computed according to principles of mechanics with regard to span and floor-load.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination in a floor or roof construction of beams and single riveted or bolted trusses, always transmitting their load to the top of the beams, having a straight top chord of a single or double bar whose ends or extensions are bent or twisted and bent around the flanges of the beams, also having a straight bottom chord to produce a straight ceiling substantially as shown and described.

2. The combination in a floor construction of single riveted or bolted trusses with straight top and bottom chords and wire-cloth, expanded metal or corrugated iron, spread over the top of the trusses in variable sizes and fastened to the top member of the truss securing said trusses from buckling sidewise, substantially as shown and described.

3. The combination in a floor construction of single riveted or bolted trusses, with straight top and bottom chords and the nailing-strip for the reception of wooden flooring attached to the top members of some or all trusses, substantially as shown and described.

4. The combination in a straight ceiling construction of terra-cotta slabs and single riveted or bolted trusses having a straight bottom chord composed of two angles, the horizontal leg of said angles fitting into the grooves of the terra-cotta slabs which can be slid to their desired positions, substantially as shown and described.

5. The combination in a straight ceiling construction of terra-cotta slabs and single riveted or bolted trusses, having a straight bottom chord composed of flat or grooved bars, having a special device for securing the terra-cotta slabs to said bottom chord of trusses, which consists of small strips of iron or steel, of suitable size, having holes in their centers, wire nails being run through these holes and between the members of the bottom chord, then bent to one side forming hooks, the projecting ends of these iron or steel strips fit into the grooves of the terra-cotta slabs and hold same in place, substantially as shown and described.

6. The combination in a straight ceiling construction of single riveted or bolted trusses with a straight bottom chord composed of small angles, flat or grooved bars, and wire-cloth or perforated metal secured to the bottom chord of said trusses, substantially as shown and described.

F. W. SETTAN.

In presence of—
JACOB LEVY,
MILDRED JOSEPH.