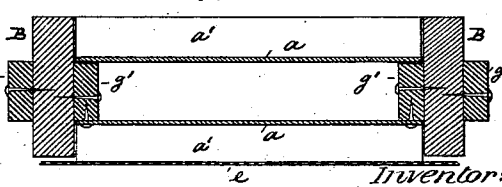
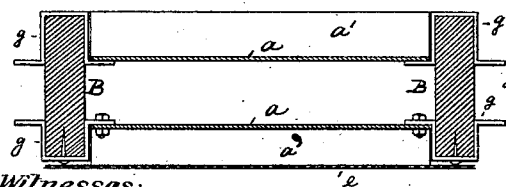
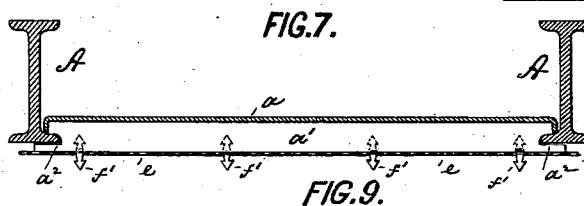
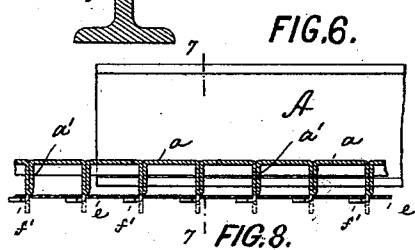
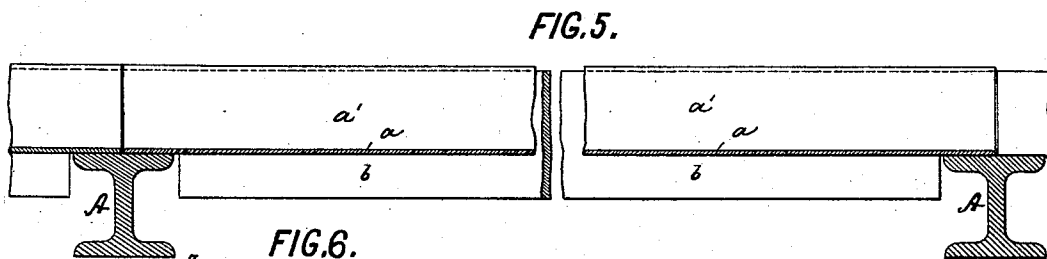
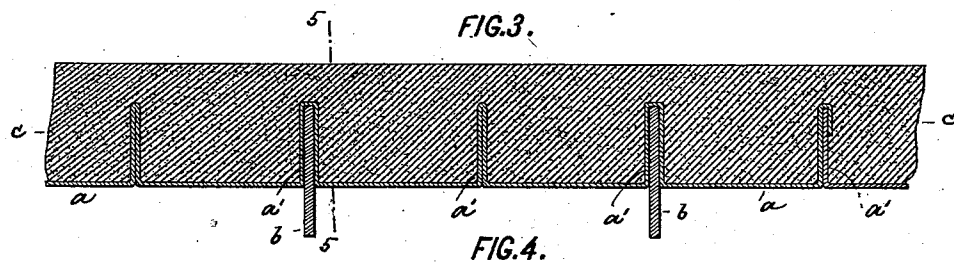
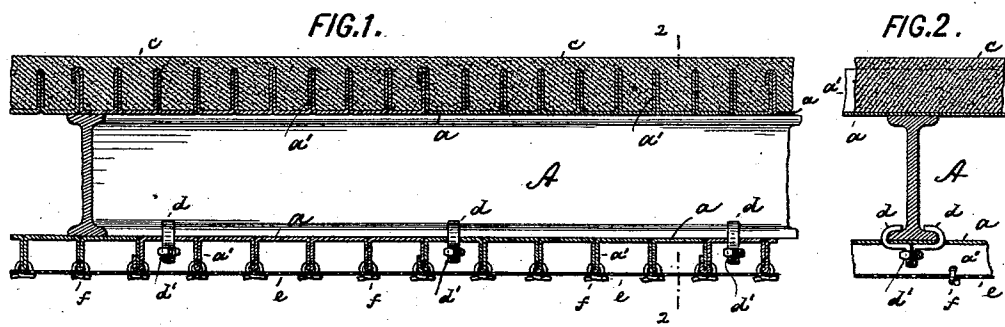


(No Model.)

S. G. BRINKMAN.
CEILING OR FLOOR.

No. 530,064.

Patented Nov. 27, 1894.



Witnesses:
Theodore Becker.
Wm. Schulz.

Inventor:
Sebastian G. Brinkman
by his attorneys
Roeder & Driesen.

UNITED STATES PATENT OFFICE.

SEBASTIAN G. BRINKMAN, OF NEW YORK, N. Y., ASSIGNOR TO RICHARD H. BIGELOW, OF SAME PLACE.

CEILING OR FLOOR.

SPECIFICATION forming part of Letters Patent No. 530,064, dated November 27, 1894.

Application filed January 31, 1894. Serial No. 498,552. (No model.)

To all whom it may concern:

Be it known that I, SEBASTIAN G. BRINKMAN, of New York city, New York, have invented an Improvement in Ceilings or Floors, of which the following is a specification.

This invention relates to an improvement in fire proof ceilings and floors, and has for its object to make the same of simple construction and of increased strength.

In the accompanying drawings: Figure 1 is a longitudinal section of a ceiling and floor constructed according to my invention. Fig. 2 is a cross section on line 2, 2, Fig. 1; Fig. 3, a cross section of the floor, when reinforced by the strips *b*; Fig. 4, an elevation of one of such strips; Fig. 5, a cross section on line 5, 5, Fig. 3; Fig. 6, a longitudinal section of a modification of the ceiling; Fig. 7, a cross section on line 7, 7, Fig. 6; Fig. 8, a cross section of the ceiling and floor, showing them secured to wooden beams, and Fig. 9 a similar section of a modification.

My improved ceiling or floor consists of a fluted piece of sheet metal *a*, the flutes *a'*, of which are flattened and project at right angles to the surface of the sheet. Thus the two cheeks of every flute are parallel, and they may be either pressed firmly together, or they may be placed at a short distance apart, to form a groove for the reception of reinforcing strips *b*, (Fig. 3.) These strips are more particularly designed to be used for heavy flooring and they should be made of a height to project beyond the surface of the sheet *a*. The spaces between the flutes are filled up with any suitable non-conducting filling *c*, such as concrete cement, which forms the foundation of the floor-tiles or boards and also prevents the flutes from spreading.

For ceilings, the sheet *a*, is suspended from the I beams *A*, by means of hooks *d*, that pass through perforations of the sheet and engage the foot of the I beam. Each pair of hooks *d*, is connected and is held in place by a nut *d'*, engaging the threaded shanks of the hooks. To the ends of the flutes *a'*, there is secured a wire netting *e*, that forms a retaining sur-

face for the plaster. This netting may be either secured to the flutes by small wire fasteners *f*, (Figs. 1 and 2,) or by tongues *f'*, (Figs. 6 and 7,) which are stamped out of the body of the flutes. These tongues may be arrow-headed as shown, and they are first bent downward (dotted lines Fig. 6), to pass through the netting *e*, and are then bent sideways (full lines Fig. 6) to hold such netting in place. If desired, the flutes *a'*, may be notched at the ends, as at *a''*, Fig. 7, to embrace the foot of the I beams *A*. In that case, of course, the hooks *d* are dispensed with. For wooden structures (Figs. 8 and 9), where the ceiling and floor are countersunk, they are secured to the wooden beams *B*, either by the flanged caps *g*, (Fig. 8,) or by the wooden cleats *g'*, (Fig. 9.)

My improvement may be employed for constructing complete ceilings and floors, and also for deafening and fire-proofing ceilings and floors of a different construction.

The principal advantages connected with my improvement are that the construction is very firm, may be readily put up and involves a comparatively small expense.

What I claim is—

1. A ceiling composed of a sheet metal plate having flutes that project downwardly from the body of the plate, fasteners connected to the flutes, and a hanging ceiling engaged by the fasteners, substantially as specified.

2. The combination of a sheet of metal having flattened flutes with a wire fabric attached to the flutes, substantially as specified.

3. The combination of a sheet of fluted metal having punched out tongues with a wire fabric secured to the flutes by such tongues, substantially as specified.

4. The combination of a beam with a sheet of fluted metal, hooks for securing the sheet to the beam and a wire fabric secured to the flutes, substantially as specified.

SEBASTIAN G. BRINKMAN.

Witnesses:

F. V. BRIESEN,
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