



# UNITED STATES PATENT OFFICE.

JOHN J. SCHILLINGER, OF NEW YORK, N. Y.

## IMPROVEMENT IN FIRE-PROOF BUILDINGS.

Specification forming part of Letters Patent No. **213,945**, dated April 1, 1879; application filed January 16, 1879.

*To all whom it may concern:*

Be it known that I, JOHN J. SCHILLINGER, of the city, county, and State of New York, have invented a new and useful Improvement in Fire-Proof Buildings, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a sectional perspective view of the wall of my building. Fig. 2 is a cross-section of the floor. Fig. 3 is a horizontal section of the wall.

Similar letters indicate corresponding parts.

My invention relates to the construction of the walls, floors, and ceilings of a building; and it consists in a wall in which are combined wooden joists or studs, a concrete filling molded or fitted between such joists, layers of tar-paper or equivalent material interposed between the joists and filling, (so that the wall is rendered practically fire-proof, while the joists are preserved against dry rot,) anchors for supporting the concrete filling in a lateral direction, sheets of slate or equivalent material to form a back for the plastering opposite the joists, and weather-boards fastened to the joists by intervening strips, for the purpose of creating an air-space within the wall immediately next the weather-boards.

It consists, further, in a floor in which are combined wooden beams, a concrete filling molded or fitted between such beams, supports for the filling, and layers of tar-paper or equivalent material interposed between the beams and filling, so that the floor corresponds to the wall. With this floor is combined a cement top or flooring, and hooks or nails embedded in the flooring for the attachment of carpet or matting.

It also consists in a method of applying and securing to the beams of a building a ceiling by casting or forming it directly upon the lower sides of the beams and holding it by the anchors, so that laths may be dispensed with.

In the drawings, the letter A designates two of the joists of a wall, these joists being of wood, and being connected together in any usual or suitable way. B is a concrete fire-proof filling, molded or fitted between the joists; and C are layers of tar-paper or the

like, interposed between the joists and filling. D are anchors projecting from the joists A on those sides thereof against which the filling is brought. E are sheets of slate or other argillaceous or solid material fastened upon the inner exposed sides of the joists, and F are the weather-boards.

The layers of tar-paper C are applied to the joists before the concrete B is filled in between them, and in the example shown they are lapped over the inner side of the joists, beneath the slate-sheets E. The effect of the tar-paper C is to exclude the moisture given out by the filling B from the joists, and thus to preserve the latter by preventing dry rot. The anchors D may have any known shape, and they are driven through the tar-paper C into the joists, while by their means the concrete filling B is effectually supported or steadied sidewise.

The slate-sheets E constitute a back for the plastering or hard finish applied to my wall upon the joists, and in the example shown such sheets are fastened to only one side of the joists, the wall represented being an outside wall; but in the construction of inside walls or partitions I apply the slate-sheets to two sides of the joists. The effect of the slate-sheets E is to prevent discoloring and cracking of the plastering on the wall.

The weather-boards F are fastened to the joists A by means of intervening strips *a*, of wood or other material, so that weather-boards are situated at a distance from the concrete filling B, and an air-space, *b*, is formed within the wall immediately next the weather-boards. This air-space *b* serves to protect the concrete filling B against the effects of moisture upon the weather-boards.

The letter G designates two of the beams of a floor connected together in any usual or suitable way, and H is a concrete filling molded or fitted between the beams for the purpose of deafening the floor and rendering the same fire-proof. This filling H is arranged between the upper portions of the beams G and above the same, the lower portions of the beams being left free, and it rests on boards I or on a frame supported by cleats *c*, which are fastened to the beams. Between the beams G and the

filling H are interposed layers J of tar-paper or similar material, the same being around the upper portion of the beams and serving to exclude moisture therefrom.

On the concrete filling H of the floor I spread a cement top or flooring, K, to increase the filling, and in suitable portions of this flooring I embed nails *d* or other devices adapted to hold a carpet or mat laid on the floor.

The letter L designates anchors driven into or otherwise applied to the lower sides of the beams G, and N is a ceiling applied to said lower sides of the beams, so that it is held by the anchors. I cast or form the ceiling N in one continuous piece and apply the same from above—that is to say, through between the beams G—a temporary frame or platform being put up beneath the beams to support the ceiling during its formation. By the anchors L the ceiling N is held sufficiently tight for all purposes, and, inasmuch as no laths or other combustible parts are used for its construction, the ceiling is made fire-proof.

For the filling B of the wall I employ a composition consisting of plaster, sand, or other suitable material, while for the filling H of the floor I use a composition consisting of locomotive-sparks and lime, or cement, or plaster-of-paris; but I do not wish to be restricted to the use of any specific composition or compositions.

What I claim as new, and desire to secure by Letters Patent, is—

1. A wall in which are combined wooden joists, a concrete filling molded or fitted be-

tween such joists, and sheets of slate or equivalent material applied to the joists on one or both sides of the wall to form a back for the plastering opposite the joists, substantially as shown and described.

2. A wall in which are combined wooden joists, a concrete filling molded or fitted between such joists, and weather-boards fastened to the joists by intervening strips, for the purpose of creating an air-space within the wall immediately next the weather-boards, substantially as shown and described.

3. A floor in which are combined wooden beams, a concrete filling molded or fitted between such beams, supports for the filling, a cement flooring, and nails or hooks embedded in the flooring for the attachment of carpet or matting, substantially as shown and described.

4. The method of applying and securing to the beams a ceiling in one continuous piece, which consists in arranging in position a temporary support for the same, then applying from above between the beams the material in a plastic state in such manner that it shall be cast about anchors secured in the beams, as set forth.

In testimony that I claim the foregoing I hereunto set my hand and seal this 11th day of January, 1879.

JOHN J. SCHILLINGER. [L. S.]

Witnesses:

W. HAUFF,

E. F. KASTENHUBER.