

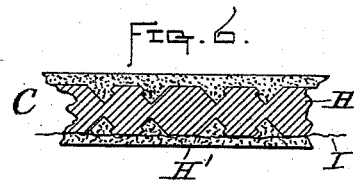
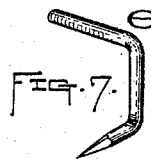
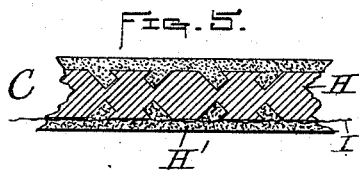
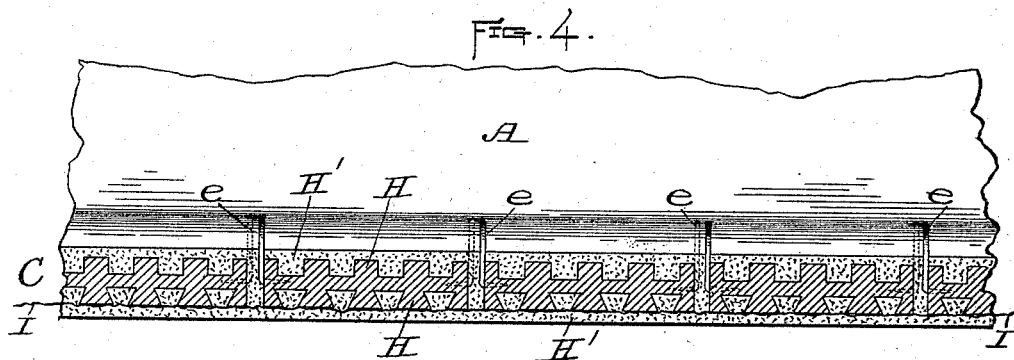
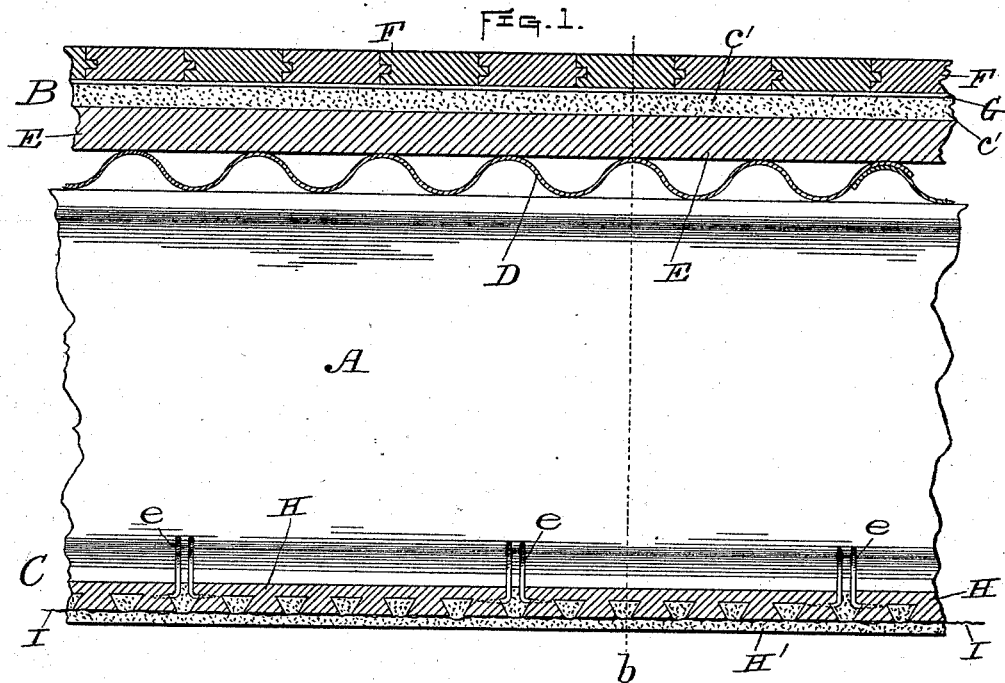
(No Model.)

2 Sheets—Sheet 1.

O. W. NORCROSS.
FIREPROOF FLOOR.

No. 526,731.

Patented Oct. 2, 1894.



Witnesses;
Walter B. Nourse,
Fred E. Buss.

Inventor;
Orlando W. Norcross.
By A. A. Parker, Atty.

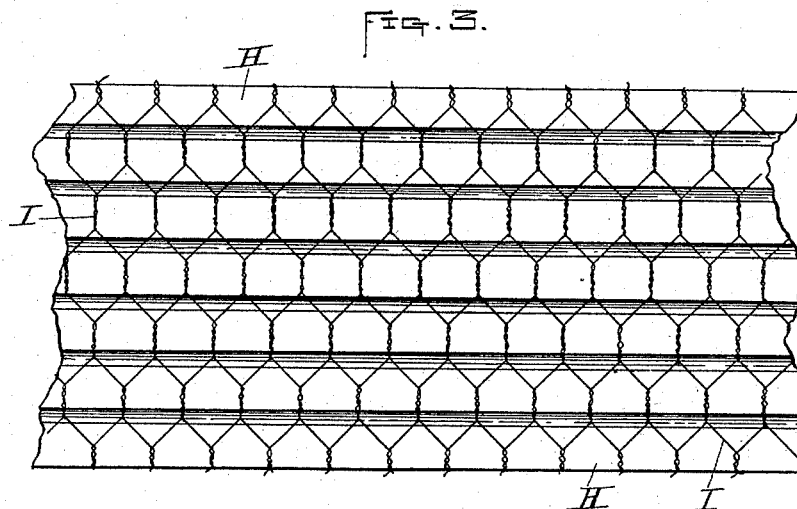
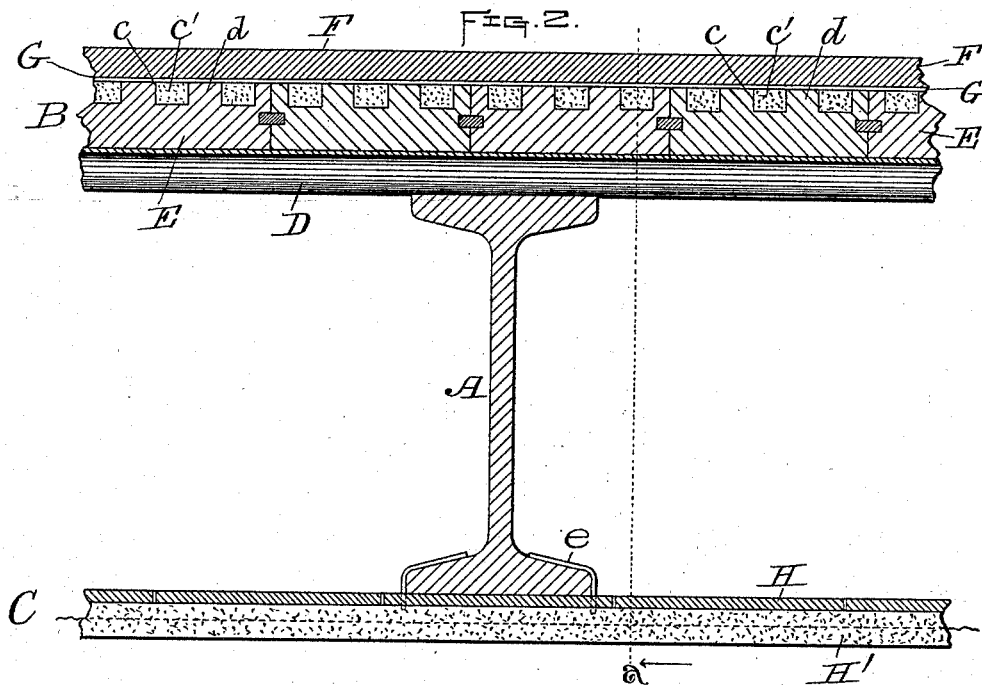
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O. W. NORCROSS.
FIREPROOF FLOOR.

2 Sheets—Sheet 2.

No. 526,731.

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By A. A. Parker, Atty.

UNITED STATES PATENT OFFICE.

ORLANDO W. NORCROSS, OF WORCESTER, MASSACHUSETTS.

FIREPROOF FLOOR.

SPECIFICATION forming part of Letters Patent No. 526,731, dated October 2, 1894.

Application filed March 8, 1894. Serial No. 502,879. (No model.)

To all whom it may concern:

Be it known that I, ORLANDO W. NORCROSS, of the city and county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Fireproof Floors; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 represents a vertical section through part of a floor, embodying my improvements, taken lengthwise, of the supporting beams or joists, at the point indicated by line *a* in Fig. 2, looking in the direction of the arrow. Fig. 2 is a similar section, taken crosswise of said beams or joists, at the point indicated by line *b* in Fig. 1. Fig. 3 represents a plan of the wood-lathing which is attached to the bottom of the beams or joists to receive the plaster on the ceiling, also showing the surface covered with wire netting preparatory to applying said plaster, as will be hereinafter more fully described. Fig. 4 represents a modification of the ceiling construction shown at the bottom of Fig. 1. Figs. 5 and 6 show other modifications in said ceiling construction, which will also be hereinafter described, and Fig. 7 is a perspective view upon an enlarged scale, of one of the wire fasteners for securing the wood lathing to the bottoms of the beams or joists.

My invention relates more especially to floors supported by iron beams employed in the construction of large, and what are commonly termed "fire-proof" buildings, but I do not limit myself thereto, as it is applicable to other classes of buildings. It is designed to cover certain additional improvements not embodied in the United States patent granted to me December 17, 1889, No. 417,500, and which will now be described in connection with the old features therein set forth.

Referring to the drawings A, represents part of an ordinary iron floor-beam and B, C part of the floor and ceiling respectively which it supports. In practice the whole surface of the floor is covered with corrugated sheet metal D, laid crosswise over the beams, and over said metal surface is then laid the wood planking E, and on top of that the usual top boarding or finish floor F, preferably with

one or more layers of paper or sheet fire-proofing material G, between said planking and top boarding.

One feature of my present improvements consists in providing the top surface of the planking E with grooves or channels *c* at a short distance apart, to receive plaster *c'*, as shown in Figs. 1 and 2. In applying said plaster, the same is spread over the surface of the planking and then scraped off, leaving the grooves filled, preparatory to laying the top flooring over the same. By this construction I am enabled to greatly retard the progress of fire from above, through the floor, while at the same time affording a good support for said top flooring, as well as means whereby it may be nailed down.

I, of course, make no claim broadly to the use of mortar for fire-proofing under the top floor with interposing, supporting strips at a short distance apart, as it is common to lay separate, wood strips on the under or lining floor boards or planking, and plaster between the same.

The essential feature which I claim as new is forming the intervening, supporting strips *d* integral with the lining floor, or, in other words, the grooves *c* in the planking, to produce said strips, in combination with the other parts employed to produce the completed flooring. This feature is of substantial importance in practice, from the fact that a large saving in the cost of labor is thereby effected, as will be obviously seen.

In the construction of the ceiling I employ wood-lathing strips H, grooved or otherwise adapted to receive the plaster H', and secured to the bottoms of the beams or joists by means of suitable wire hooks or fasteners *e*, similar to my former patent referred to, and in addition thereto, I, in this instance, secure suitable wire netting I to the surface of said wood lathing after it is secured in place and before plastering, as is shown in Fig. 3. The addition of said feature to my former patented construction results in the following advantages, viz: The plastering is less liable to crack from shrinkage of the wood-lathing. Said plaster adheres more tenaciously; and, as is well known and a conceded fact in practice, wire netting, or cloth spread over wood-work materially retards the progress of fire to the

surface thus protected. This feature of using an open metal covering over the wood-lathing, I also do not claim as broadly new, and therefore limit myself to the combination thereof with the other features described, and as pointed out in the claim.

The modifications shown in Figs. 4, 5 and 6 are simply to illustrate different forms of wood-lathing strips. In all of said figures both the bottom and upper sides thereof are shown grooved, so that the same may be plastered upon both sides. In Fig. 4 the top grooves are shown square, while the lower ones are of dove-tail shape, and in the other two figures said grooves are shown at an angle, with only a slight variation in the shapes of those shown in one figure from those shown in the other figure.

As various other styles of wood-lathing may be used for holding the wire netting and plaster, I do not limit myself to any special kind, or to any special way of securing the same to the floor beams or joists.

Although my invention is designed more especially for floor construction, it will be un-

derstood that I do not limit myself thereto, as it may be applied to roofs and all other places required to be made fire-proof. The advantages thereof are fully set forth in my former patent, previously alluded to, and it will, therefore, be unnecessary to repeat the same in the present instance.

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

The floor-beams A, corrugated sheet metal D laid on top thereof, and the wood-lathing H, in combination with the planking E laid over said corrugated sheet metal and provided with suitable grooves c in its top surface; the plaster c' placed in said grooves; the usual top flooring F preferably having paper or other thin material under the same; the wire netting I fastened to the under side of the wood-lathing, and plaster H', spread thereon, substantially as and for the purpose set forth.

ORLANDO W. NORCROSS.

Witnesses:

ALBERT J. PARK,
WALTER B. NOURSE.