W. E. WORTHEN.

METAL-CLAD CEILING.

No. 192,400. Patented June 26, 1877.

Fig. 1.

Fig. 2.

Fig. 3.

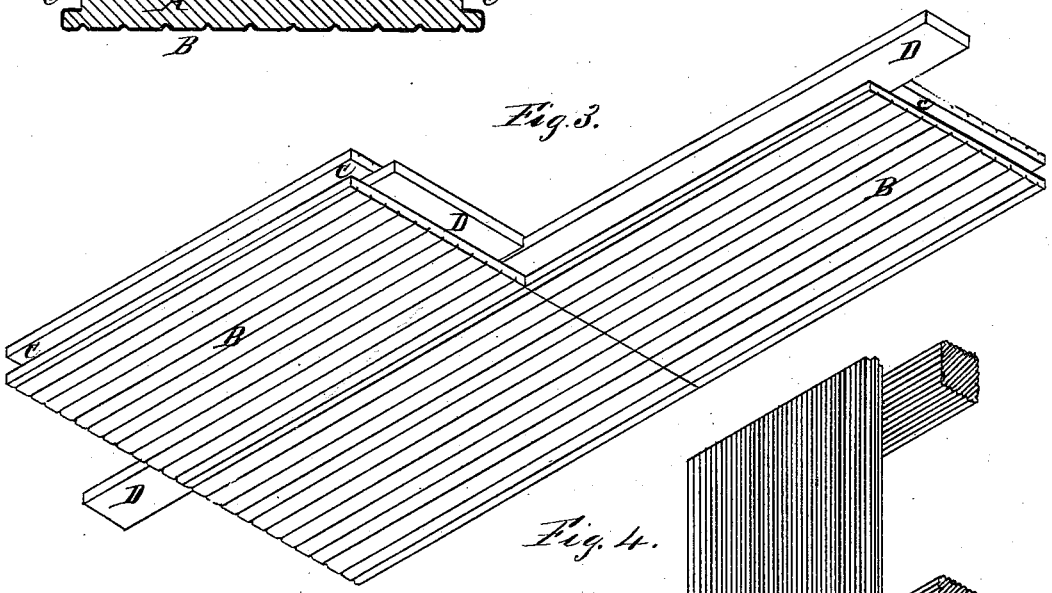
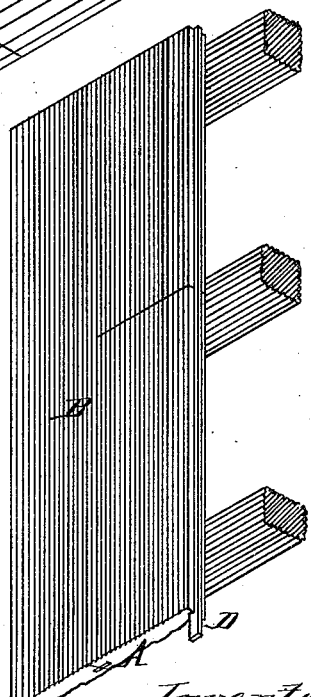


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM E. WORTHEN, OF NEW YORK, N. Y.

IMPROVEMENT IN METAL-CLAD CEILINGS.

Specification forming part of Letters Patent No. **192,400**, dated June 26, 1877; application filed May 17, 1877.

To all whom it may concern:

Be it known that I, WILLIAM EZRA WORTHEN, of the city, county, and State of New York, have made an invention of a new and useful article of manufacture, which I denominate Metal-Clad Ceiling; and that the following is a full, clear, and exact description and specification of the same.

The article which constitutes my manufacture is a compound slab of wood and thin sheet metal, suitable for making ceilings and partitions, the wood constituting the core of the article and imparting to it form and substance, while the sheet metal covers the wood and forms a fire-proof surface. The metal clothing also protects the wood from access to air, so that, even if the article be heated to a high degree, it does not tend to burn with flame and propagate the fire from one piece to another. Hence the use of the article for the ceilings and sides of stores and other buildings, and for the faces of the partitions thereof, is a great safeguard against the spreading of fire.

In order that the invention may be fully understood, I have represented in the accompanying drawing and will proceed to describe the modes in which I have thus far applied my invention to practical use.

Figures 1 and 2 represent transverse sections of two varieties of the metal-clad ceiling, of size suitable for practical use. Figs. 3 and 4 represent on a smaller scale two modes in which the said article may be applied to ceilings and partitions.

The metal-clad ceiling, as represented at Fig. 1, consists of a core, A, of wood, which is coated with a sheet-metal clothing, B, the sheet metal being turned around the edges of the wood and into grooves *c c* formed in those edges. When constructed in this form, the metal is securely connected with the wood core without the use of nails or tacks. As the metal coating is thin, I find it expedient to stiffen it by corrugating it, which operation is performed by passing the compound article between a pair of rolls, one of which is smooth, while the barrel-face of the other has projecting ridges upon it corresponding with the grooves to be produced. Instead of fitting the wood core with metal clothing upon one side only, it may be clothed upon both sides, as represented at Fig. 2, the sheet metal being turned round the edges and into the grooves thereof, as represented in that figure. The ends of the sheet-metal plating are turned round the end edges of the wooden core in the same mode as at the sides thereof, and are secured by being turned into grooves formed into the said ends. The article may be manufactured in slabs or boards of such breadth and length as may be found expedient for the purpose for which it is to be employed.

The slabs or strips of this metal-clad ceiling may be nailed directly to the beams or studs of a building, and the edges and ends of the adjacent slabs or strips are locked together by means of narrow iron strips D, forming tongues, which are engaged in the grooves of the ceiling. If deemed best, each tongue, as it is put in place, may be nailed to the studs or beams, the tongues being punched with nail-holes for that purpose. In such case no nails need be inserted through the metal-clad ceiling, except the last piece in width.

Having thus described the mode in which I have manufactured my new article of metal-clad ceiling, I declare that I am aware that sheet metal has been nailed upon the surfaces of wooden partitions and ceilings for the purpose of protecting the same from heat; but in such case the wooden boards have been nailed in place first, without regard to any metal plating, and the metal has subsequently been applied to the boarded partition or ceiling in sheets, without regard to the widths of the wood boards. In my case, each piece of wood is clad separately with metal before it is to be used in building, the breadth of the metal clothing or plating corresponding with the wood with which it is combined, so that the article may be manufactured in shops, fitted with machinery adapted to the work, and may then be sent, ready for putting up, to the place where it is to be used. Moreover, in my article the edges of the slabs or strips are

metal-clad, so that the joints of the slabs are protected as well as the faces.

I therefore claim as my invention—

As a new article of manufacture, the before-described metal-clad ceiling, consisting of a core of wood and a sheet-metal clothing therefor, constructed and combined substantially as represented and specified.

Witness my hand this 16th day of April, A. D. 1877.

WILLIAM EZRA WORTHEN.

Witnesses:
RICH. S. GILLESPIE,
AUGUSTE J. ROSSE.