

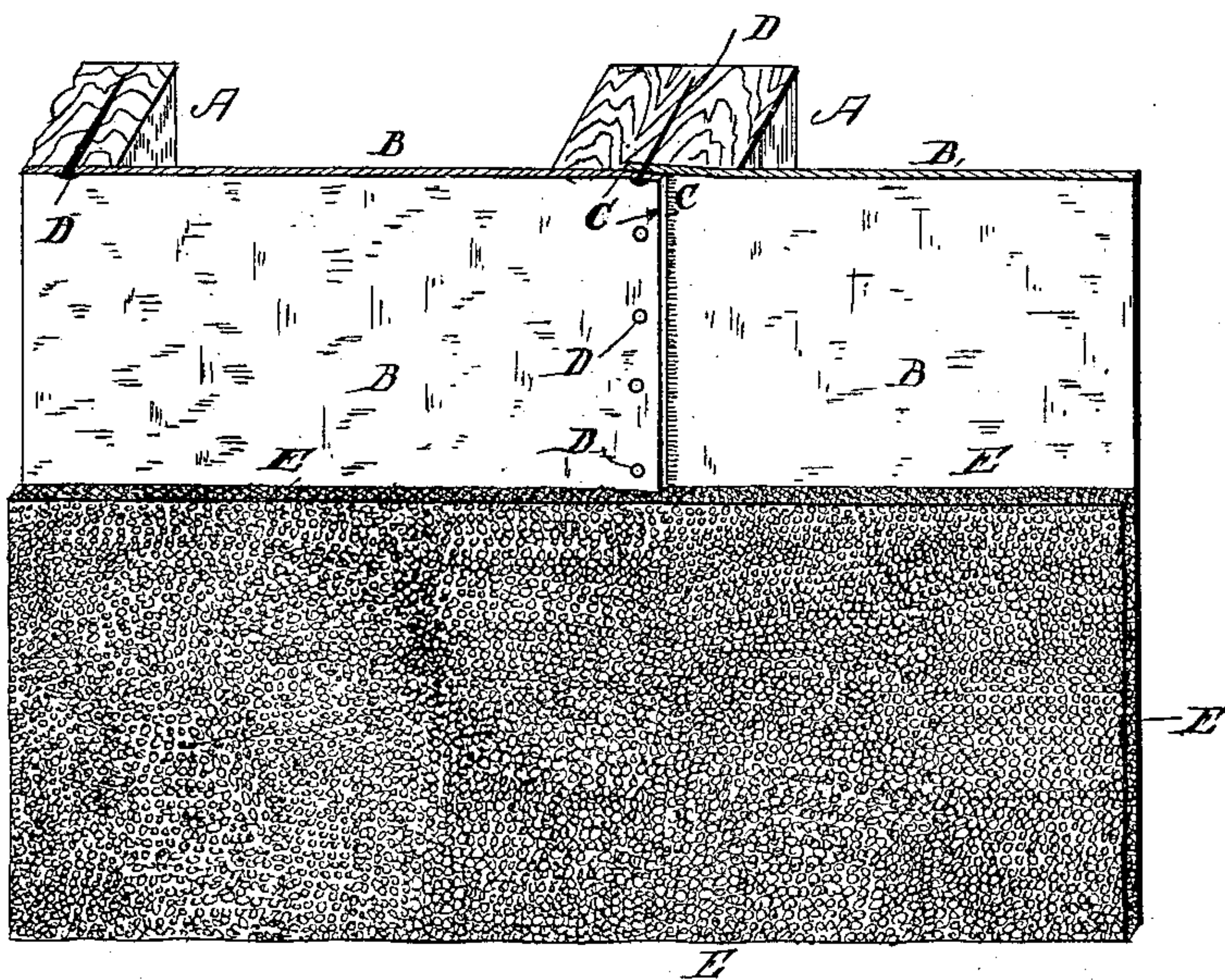
(No Model.)

E. C. MORRIS.

COMPOUND PLASTER AND SHEET METAL LINING FOR PARTITIONS, &c.

No. 329,759.

Patented Nov. 3, 1885.



Witnesses:

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EDWARD C. MORRIS, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO MORRIS
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COMPOUND PLASTER AND SHEET-METAL LINING FOR PARTITIONS, &c.

SPECIFICATION forming part of Letters Patent No. 329,759, dated November 3, 1885.

Application filed September 5, 1885. Serial No. 176,283. (No model.)

To all whom it may concern:

Be it known that I, EDWARD C. MORRIS, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Compound Plaster and Sheet-Metal Lining or Finish for Partitions, Ceilings, &c., of which the following is a full, clear, and exact description.

In finishing the walls, partitions, ceilings, &c., of buildings, as well known, it is a matter of great importance and desirability to have them water and fire proof, and attempts in many ways and forms have been made to that end. Those, however, that have been most successful have been so expensive in construction and materials as to be practically valueless for general use, and consequently their adoption has been most limited, and only for buildings of otherwise most expensive construction. In some instances a finish has been secured by use of sheet or strip metal, which, being suitably fastened to the studding or other frame-work or structure to be finished, is covered exteriorly with a layer of plastic material—such as ordinary lime plaster—which in all instances was dependent for the security of its attachment upon the fact that as applied it became interlocked with the sheets or strips of metal, they being so constructed or formed or arranged, or both so formed and arranged, that the plaster, as it was applied, could enter into and be forced to spread laterally within depressions or cavities, and such like, at suitable parts of said strips or sheets, and thus the said strips or sheets secured the plaster in place upon and about them by allowing it (the plaster) to assume a key form at various and sufficient and suitable parts thereof to insure the retention of the plaster in its proper place in relation thereto.

Sheet or strip metal combined with plaster in the form and manner described has not been found practicable or desirable for many reasons—as, for instance, the amount of plastering material required was greatly in excess of the amount really necessary to cover the surface to be finished; and, again, the hold of the plaster upon the strips or sheets of metal was only because of its interlock or key, above stated, and otherwise there was no real

or practical attachment of the plaster to the metal, and consequently the real combination of metal and plastering has heretofore, in fact, always been unsuccessful and substantially impracticable and useless for the end which it was intended to attain by their combination—to wit, a fire-proof finishing of the walls, ceilings, partitions, &c., of buildings which was economical and capable of general application and use.

The finish of walls, ceilings, partitions, &c., of this invention is, in substance, composed of sheet metal, which is applied to the studding, frame-work, or other structure to be finished, so as to completely cover and line the same and constitute and make a close and complete sheathing thereto, which of itself is water-proof, and of a plastic compound applied to the then exposed surface of the so-attached sheet metal, and which is capable of adhering to the surface thereof.

In the accompanying drawing, forming a part of this specification, the figure is a sectional perspective view of a portion of the studding of a wall lined in accordance with this invention.

In the drawing, A is the studding. B B are sheets of metal—such as iron—made thin, overlapping at their edges C, and there, as also at other places, secured by nails D to the studding A. E is a layer of plastic material on the exposed surface of the metal sheets B, and the seams made by the overlapping edges C of the metal sheets B, as also the nail-holes, are sealed or closed with any suitable cement or material or materials—such as rosin and tallow, in about the proportion of three to one—applied to the sheets or nails, or both, as the sheets are put up. The sheets B are smooth or even surfaced, or substantially so—that is, the surface to receive the plastering is, without crevices or recesses of any kind or character, capable of making an interlock or key of the plastic compound with the metal; and, if thought desirable or necessary, the sheets may be painted or otherwise coated to protect them against corrosion.

The layer E of plastic compound is applied to the metal sheets B in the ordinary way, or otherwise, of applying plastic compounds to surfaces to be covered by them, and preferably the plastic compound is to be one which is

fire-proof, and in any event it is to be one which is to be capable of adhering to the metal surfaces to which it is applied independently of any interlocking or keying of it thereto, which it is intended should not occur to any practical extent, and for which, as above stated, the metal sheets are not adapted either by construction or arrangement or relative location.

A plastic compound most suitable for the purpose, and having the essential characteristics above stated, is to be found fully described in the schedule annexed to the Letters Patent of the United States issued to Henry W. Merritt, of Boston, Massachusetts, dated July 14, 1885, No. 322,307. This compound consists of what is known in the market as a highly-silicious substance called "asbestine," and a natural mineral deposit in St. Lawrence county, New York, and which by analysis has been found to be silica, 61.23 per cent.; magnesia, 31.37 per cent.; alumina, 1.99 per cent.; iron protoxide, 0.37 per cent., and water 5.02 per cent., varying, of course, in these proportions in different specimens. This asbestine is reduced to powder and mixed with quartz sand and caustic soda or caustic potash, dissolved in water in proportions substantially as follows: twenty pounds of powdered asbestine, forty pounds of quartz sand, and one and one-half pound of caustic soda or caustic alkali. These ingredients are worked into a plastic mass by the use of about twenty-two pounds of water, in which the caustic soda or caustic alkaline is first dissolved, and then the powdered asbestine and sand are introduced and thoroughly intermixed. The proportions above given may be varied somewhat in practical limits; but those given are found practicable and useful for the purposes of this invention, and the introduction of a small proportion of soluble silicate of soda may be advantageous in making the mass more adhesive—as, for instance, about three and one-half pounds. The metal sheets it is preferable to have thin, and to prevent their buckling they may be given a

more or less wavy or corrugated form, such a form greatly stiffening the sheets.

A ceiling, partition, or wall, &c., finished substantially as above described is water-proof, because of the sheet metal and its application above stated. Again, the amount of plastic material required to surface and finish the sheet-metal lining is reduced to the minimum, as all can be utilized to make the finish or surface, because of its capability of adhering to the surface, and as no interlocking or keying is necessary, and provided the plastic compound is fire-proof in character, which is the case with the compound particularly specified, the finish then is fire-proof as well as water-proof.

The edges of the metal sheets may be either butted or not, instead of overlapped; and, again, the sheets may be overlapped by being folded over at their edges and interlocked one sheet with another.

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

1. A lining for walls, ceilings, partitions, &c., of buildings, composed of metal sheets, substantially smooth-surfaced, and suitably secured in position, and of a plastic compound capable of adhering thereto, substantially as described, for the purpose specified.

2. A lining for walls, ceilings, partitions, &c., of buildings, composed of metal sheets, substantially smooth-surfaced, and suitably secured in position and overlapping at their edges and the seams of the overlapping edges sealed, and of a plastic compound capable of adhering thereto, substantially as described, for the purpose specified.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

EDWARD C. MORRIS.

Witnesses:

WM. S. BELLOWS,

ALBERT W. BROWN.