2 Sheets--Sheet 1.

M. F. LYONS.

Plaster Walls.

No. 138,170. Patented April 22, 1873.

Fig. 1.

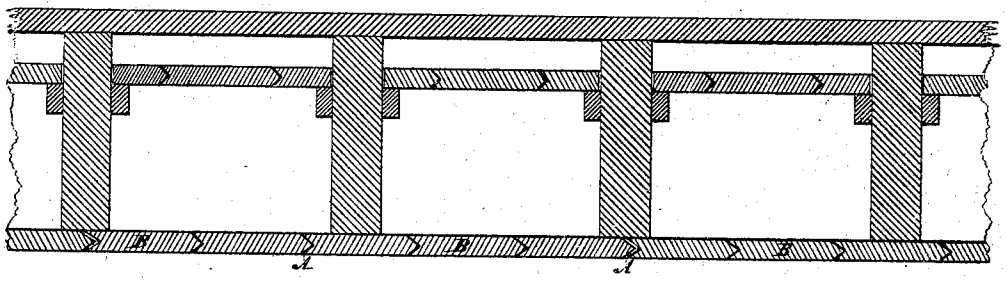


Fig. 2.

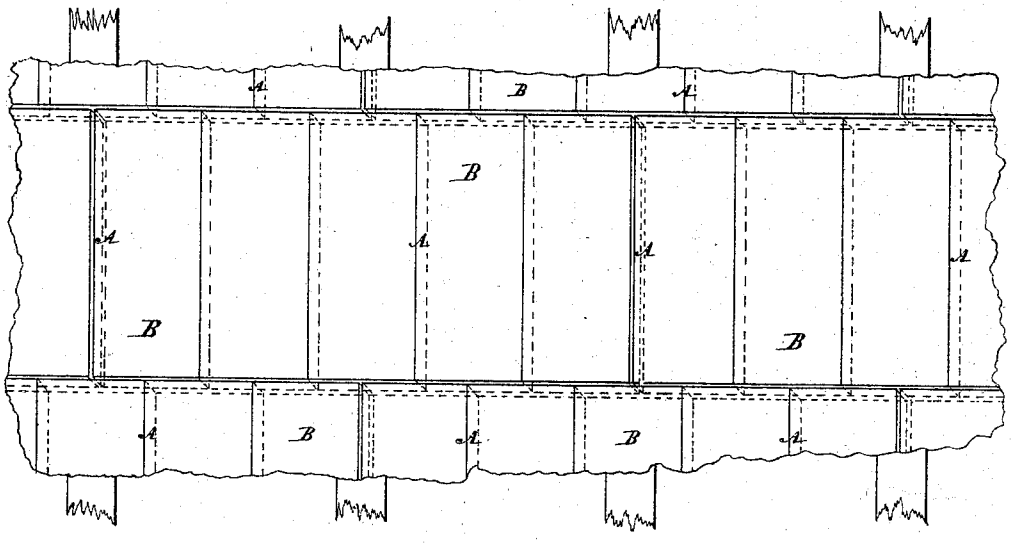
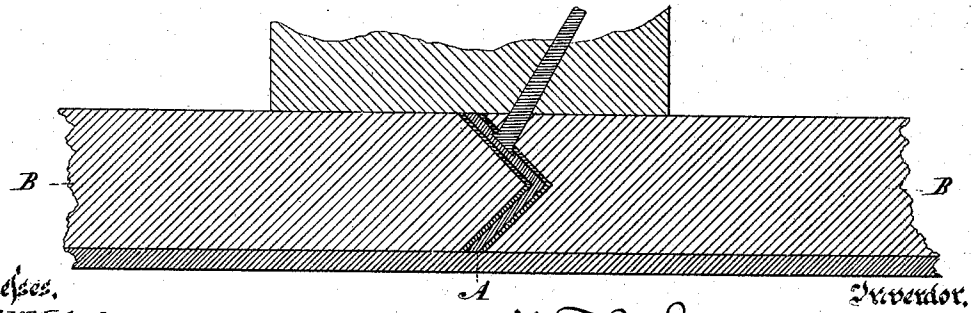


Fig. 3.



Witnesses.

A. F. Westbrook.

Inventor.

M. F. Lyons
by his attorney F. B. Stetson

2 Sheets--Sheet 2.

M. F. LYONS.

Plaster Walls.

No. 138,170. Patented April 22, 1873.

Fig. 4.

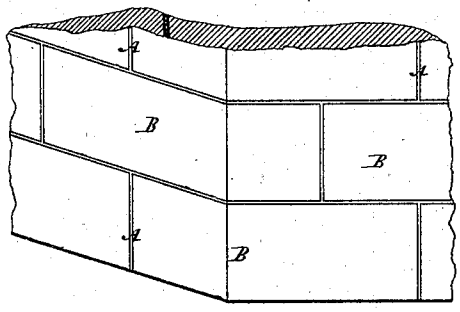


Fig. 5.

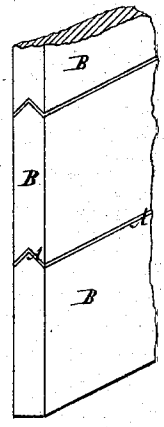


Fig. 6.

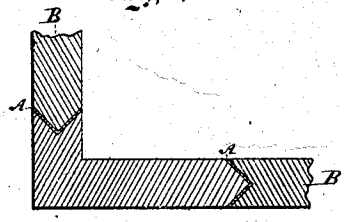


Fig. 7.

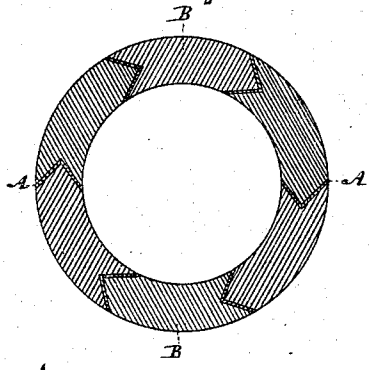
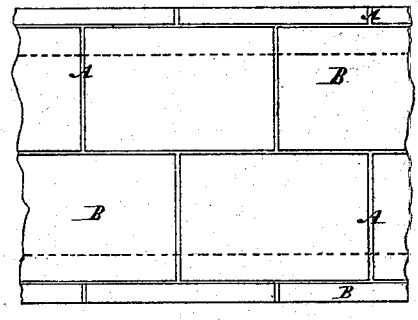


Fig. 8.



Witnesses.

Alf. Westbrook

W. E. Dey

Inventor.

M. F. Lyons

by his attorney

T. S. Staton

UNITED STATES PATENT OFFICE.

MICHAEL F. LYONS, OF NEW YORK, N. Y.

IMPROVEMENT IN PLASTER WALLS.

Specification forming part of Letters Patent No. **138,170**, dated April 22, 1873; application filed February 28, 1873.

To all whom it may concern:

Be it known that I, MICHAEL F. LYONS, of New York city, in the State of New York, have invented certain new and useful Improvements relating to the Application of Mortars and Cements, of which the following is a specification:

I construct light open-work frames of thin metal strips, the strips having been previously formed by rolling, or otherwise, to produce a guttered or V-section, and fill the frames with a mortar or cement material in a plastic condition. After it has hardened the sheet of combined metal and mortar may be moved about and applied in various situations.

One of the principal uses of my invention is to supply the place of the ordinary plastering of rooms. For this purpose I make the compound sheets thin, and secure them to the walls or other work by nailing or the like, and coat the whole with a hard finish, or other suitable surfacing-material, which fills the joints. For other uses it may be made much thicker. So made of suitable material it may be used for partitions or the main walls of buildings or for miscellaneous work, including cylindrical or oval sewers.

The following is a description of what I consider the best means of carrying out the invention.

The accompanying drawing forms a part of this specification.

Figure 1 is a vertical section through a ceiling formed according to this invention, showing, also, the floor-timbers, deafening, and floor above. It represents the work before the finishing-coating is applied. Fig. 2 is a view of the same from below. Fig. 3 represents, on a larger scale, a vertical section of a portion after the finishing-coat has been applied. Fig. 4 is a perspective view of a portion of the exterior of a building, surfaced exteriorly according to this invention. This may be the whole wall, if desired. Fig. 5 represents a portion of a partition when the whole partition is formed according to this invention. Fig. 6 is a horizontal section of a portion of an exterior wall formed with its whole thickness made up of my previously-prepared masses. It will be understood that, in such constructions, one or both faces may be afterward coated. Fig. 7 is a cross-section of a cylindrical sewer, the whole thickness of which is formed according to this invention; and Fig. 8 is a side view of the exterior of the same.

Similar letters of reference indicate corresponding parts in all the figures.

A A are guttered or V-sectioned strips of tinned iron applied together in the positions represented, and firmly secured by riveting or soldering or both. B B are fillings of lime and mortar, or analogous material, applied in a plastic condition and allowed to set. I propose to use coarse sand and gravel liberally in this mortar, and to so compound and apply the same as to leave a rough surface adapted to receive and cause an adherence of any suitable surfacing or finishing coat. The filling of the frames A with the plastic material B may be effected in the manufactory by the aid of machinery and other conveniences, so as to attain the ends with great perfection and economy. With some materials great force may be applied, either by a constant pressure or by percussion, to allow the employment of materials which would be otherwise inappropriate, or to induce a greater firmness in the result, or for both of these ends. For the ceilings and walls of rooms the frames A and the filling composition B may have a thickness of about one inch more or less. The thin masses may be secured by nailing to the floor-timbers and joists, or by bolting to any corresponding metallic parts. In applying the edges together, the ridge or salient angle on the edge of one piece applies in the grooved or re-entering angle on the adjacent piece. A small quantity of mortar being applied along one or both of the surfaces, and the sheets pressed gently together and slightly rubbed against each other, the closing of the joint may be effected very perfectly. When the wall is properly covered by this means with the flat parts, the whole is plastered one or more times with a surfacing material, and the wall is finished.

I propose to employ analogous frames A and analogous filling B to form thicker masses for partitions, and even for the main walls of buildings. By forming the same curved I can produce my compound sheets of a suitable character to form sewers. In applying any

such, means should be provided by a temporary framing, or otherwise, for holding the compound sheets in place until the joining material has properly set.

In making thick masses or thick sheets the material of the V-sectioned framings A may be made proportionately thicker. I propose to employ galvanized iron, and metal variously surfaced, so as to best insure against oxidation, and to secure a great addition to the mortar filling.

Among the many advantages secured by my invention may be reckoned the economy of time in finishing the interiors of buildings. The ceilings of high halls and churches may be finished by these means in a brief time, and with the construction and removal of only a single scaffolding.

Plaster of Paris may be used largely instead of lime in the composition. The deafening may be made of the same flat masses, as shown, or of any other material. Floors may be surfaced with these flat masses, or the body of the floor may be thus made, and the surface either left bare or coated with a suitable cement. Wherever my flat masses are used they produce or tend to produce a highly durable and fire-proof construction.

I claim as my invention—

1. The V-sectioned metal frames A and the earthy filling B, combined and adapted to serve as herein set forth.

2. The within-described method of finishing rooms and buildings by means of sheets of earthy material held in metal frames and adapted to be rapidly applied and secured by nails, or the like, with the joints filled and the surfaces covered with additional material applied as herein set forth.

In testimony whereof I have hereunto set my hand this 26th day of February, one thousand eight hundred and seventy-three, in the presence of two subscribing witnesses.

MICHAEL F. LYONS.

Witnesses:
W. C. DEY,
ARNOLD HÖRMANN.