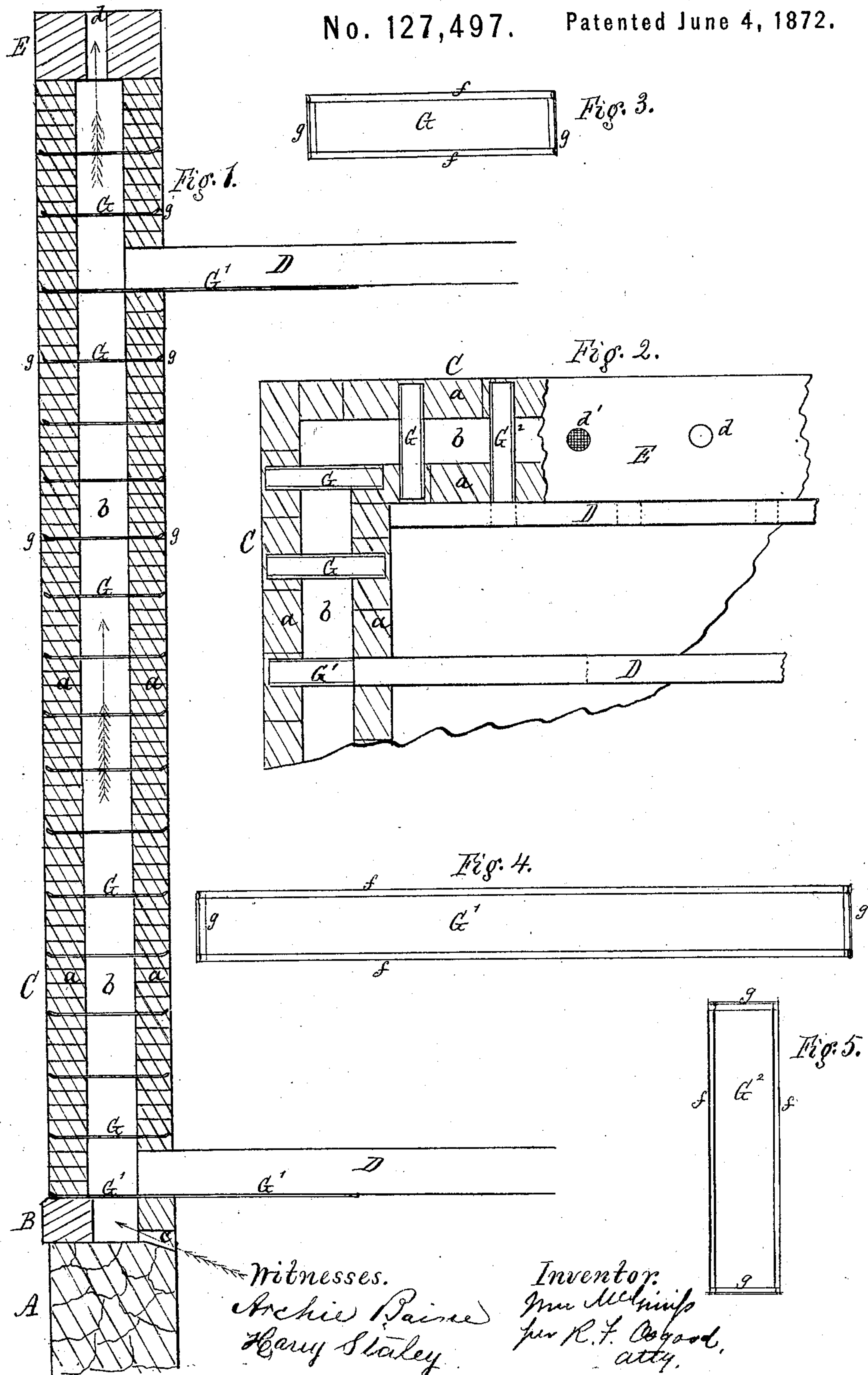


WILLIAM MCGINISS.

Improvement in Construction of Buildings.

No. 127,497.

Patented June 4, 1872.



UNITED STATES PATENT OFFICE.

WILLIAM MCGINISS, OF CANANDAIGUA, NEW YORK.

IMPROVEMENT IN CONSTRUCTION OF BUILDINGS.

Specification forming part of Letters Patent No. 127,497, dated June 4, 1872.

Specification describing a certain Improvement in the Construction of Brick and Stone Buildings, invented by WILLIAM MCGINISS, of Canandaigua, in the county of Ontario and State of New York.

My invention consists in constructing the hollow walls of brick and stone buildings with ventilating air-passages from the cellar to the top of the building, and with binders built into the walls, in the manner and for the purposes hereinafter set forth.

In the drawing, Figure 1 represents a vertical section of the wall of a building constructed in my improved manner; Fig. 2, a horizontal section of the same, showing one corner of the building; Figs. 3, 4, and 5, plans of the different forms of binders used in the construction.

A represents the cellar-wall or foundation; B, the water-table; C, the vertical walls of the building; and D D, the flooring-timbers or joists of the first and second stories. The walls are laid in two thicknesses, *a a*, with a hollow space, *b*, between, which extends from the foundation to the rafter-plates E, as usual. At the base I make a series of induction-holes, *c c*, all around, opening from the cellar-space into the hollow passage *b* of the walls; and at the top I bore a series of corresponding holes, *d d*, through the rafter-plates, also communicating with the passage *b*.

By this means it will be seen that a constant current of air is passing from the cellar to the attic, through the hollow walls of the building, by which a double effect is produced—viz., first, the cellar is always kept properly ventilated and pure; and, second, the inner walls, which form the boundaries of the rooms, are kept perfectly dry at all times, thereby requiring no furring or lathing in the application of the plaster coat; furthermore, this current of air in passing through keeps the building cool in summer and warm in winter.

To prevent the passage of rats and mice to the interior of the walls or the cellar I cover the holes, both at top and bottom, with wire-cloth or equivalent, as shown at *d*¹, Fig. 1.

In order to prevent the passage of moisture from the outer to the inner thickness of the walls, I employ a system of metallic binders, built in as follows: In the first place I will

state that it is customary to build brick walls of two thicknesses, having a hollow space between, and to connect them at intervals by brick "binders," or bricks which extend across and are built in to brace and strengthen the walls. These are porous and absorbent, and convey the moisture across from the outer to the inner thickness by absorption. The result is that the inner walls can never be kept dry, and it is necessary to fur and lath the rooms before plastering. I employ for binders strips of tin, sheet-iron, or equivalent straps, G G, whose length is a little less than the thickness of the entire wall, so that when embedded they will stretch from side to side, but be covered from sight outside by the covering of mortar at the joint. These binders are preferably seamed or turned over at the edges, as shown at *f f*, to give strength, and their ends are slightly turned up, as shown at *g g*, to hold against tension when embedded. These binders are embedded at every four or five courses upward, and are preferably located about eighteen inches apart, horizontally, though the spacing may be varied, as desired. They are preferably arranged irregularly or out of line, so as to have a greater bracing and binding power. The binders G¹, which come longitudinally in line with the flooring-timbers or joists D D, I make of greater length, so as to extend inward and lie under the joists, to which they are nailed, as shown in Figs. 1 and 2. The binders G², which come transversely in line with the flooring-timbers, are similarly arranged, except that they project only sufficiently to lap and be nailed under the edge joists, which fit close to the walls, as shown in Fig. 2. All these metallic binders are embedded in the walls in the same manner in the process of building. This nailing to and connection with the flooring-timbers holds them firmly in place, and enables the tensile strength of the flooring-timbers to be applied in holding and bracing the walls, which has not been done before so far as I am aware.

By the above-described construction of the walls with the metallic binders I secure several advantages: The walls are made much stronger than if brick binders are used, which are brittle, and have very little tensile strength. The cost is much less. The greatest advan-

tages is that no moisture can be carried from the outer to the inner thickness of the wall; the metal is a non-conductor of moisture; hence I can plaster directly to the inner thickness without furring and lathing, and the wall is at all times as dry as a wooden house. I have built a building in this manner and find this correct. Another advantage is the lapping of the binders G¹ G² under the flooring-timbers, by which the walls are braced and sustained, as before described.

This invention is applicable to brick, stone, or artificial-stone buildings.

I claim—

In a brick or stone building constructed with hollow walls and having a ventilation through from cellar to attic, as described, the metallic binders, built in between the courses, connecting the thicknesses of the walls, and lapping under the flooring-timbers, in the manner and for the purpose specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

WILLIAM MCGINISS.

Witnesses:

R. F. OSGOOD,
ARCHIE BAINE.