No. 892,225. PATENTED JUNE 30, 1908.

C. COLLINS.

FIREPROOF BUILDING CONSTRUCTION.

APPLICATION FILED MAR. 12, 1906. RENEWED APR. 27, 1908.

Fig. 1.

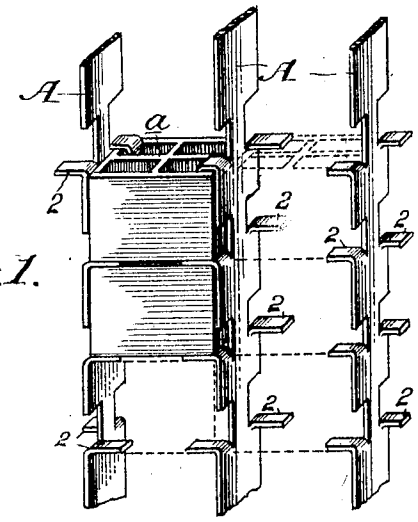


Fig. 2.

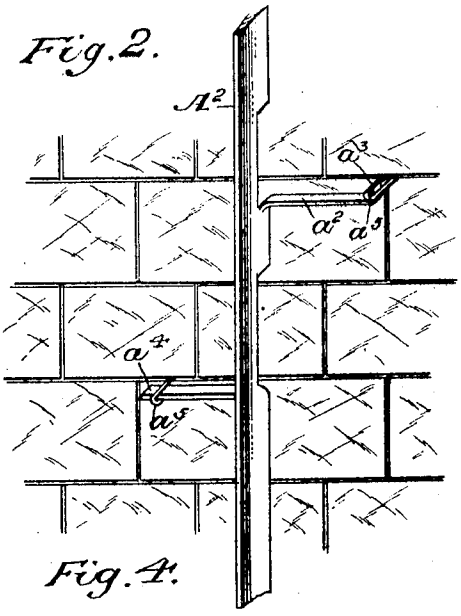


Fig. 3.

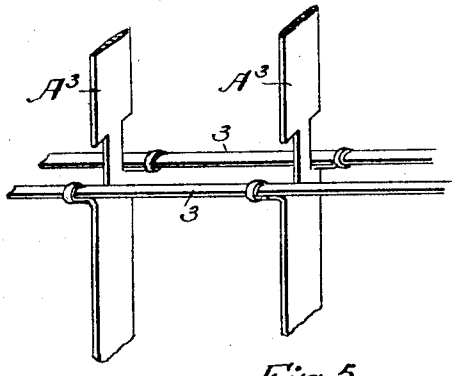


Fig. 4.

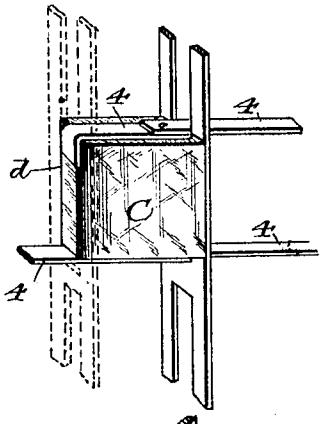


Fig. 5.

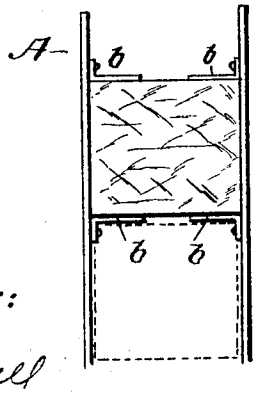
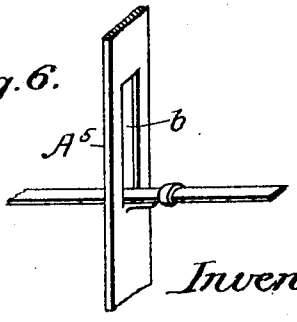


Fig. 6.



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UNITED STATES PATENT OFFICE.

CORNELIUS COLLINS, OF SAN FRANCISCO, CALIFORNIA.

FIREPROOF BUILDING CONSTRUCTION.

No. 892,225. Specification of Letters Patent. Patented June 30, 1908.

Application filed March 12, 1906, Serial No. 305,727. Renewed April 27, 1908. Serial No. 429,476.

To all whom it may concern:

Be it known that I, CORNELIUS COLLINS, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented new and useful Improvements in Fireproof Building Construction, of which the following is a specification.

My invention relates to certain new and useful improvements in fireproof building construction, and it consists of the parts and the constructions and combinations of parts which I will hereinafter describe and claim.

In modern methods of building it is the tendency to eliminate wood and combustible material to as great an extent as possible, and to substitute in lieu thereof brick, stone, concrete or other non-combustible materials. It is also desirable on account of the costly character of the aforesaid structures to economize the interior space as much as possible by making the interior walls, ceilings, and floors, as thin as is consistent with strength and sufficient solidity to maintain them in place without vibration, and to make them fireproof.

In the most approved methods of fireproof constructions structural metal is used, this being in the form of thin strips of sheet metal having little inherent rigidity in themselves, and these are so connected with each other and with supporting beams or members by lateral or transverse braces as to form rigid structures capable of supporting tiles or mortar, concrete, or other plastic material which will harden after application whereby the metal and concrete become mutually supporting, and the metal parts are protected from the direct action of heat or from destruction by oxidation.

In the accompanying drawings forming part of this specification and in which similar reference characters indicate like parts throughout the several views,—Figure 1, represents a perspective view of a section of fire-proof partition construction showing an embodiment of my invention and the terra-cotta or other building blocks with which the metal structure may be combined. Fig. 2, is a similar view of a modified construction wherein the bracing strips or tongues are formed by slitting one edge only of the upright, the free ends of the strips or tongues being secured to a brick, stone or other wall by staples or equivalent means embracing said ends and being driven into the joint between the bricks, stones, etc. Fig. 3, represents uprights similar to Fig. 1 with separate strips extending parallel between any desired number thereof, and the tongues or bracing strips to tie them to the uprights. Fig. 4, is a modification showing uprights with tongues or bracing strips struck from the central portions thereof and having a length sufficient to extend between two adjacent uprights, and terra-cotta or other blocks housed between adjacent parallel tongues and adjacent parallel uprights. Figs. 5 and 6 are modifications to be referred to.

In carrying out my invention I form the uprights A of thin metal having in themselves but little inherent rigidity, said strips being preferably, but not necessarily, of a width about equal to the thickness of the proposed partition from side to side minus the outer coverings of such lathing, plastic material, etc., as I may wish to use. From these uprights I cut tongues or strips which I bend transversely or at right angles to the length of the strips say horizontally relative to the uprights, and these tongues or braces I employ in connection with a wall of building blocks, bricks, stones etc., as a means for bracing and retaining the light metallic structure in position and making it substantially rigid.

The specific manner of forming and securing the tongues or transverse bracing strips may be effected in various ways therefore I have illustrated several methods any one of which may be used with success.

In Fig. 1 the uprights A have their opposite edges slitted to form the tongues 2 which tongues are then bent into substantially a horizontal position towards an adjacent upright. The bending of the tongues or strips may be in the same direction or the one at one edge may be bent to the right and the one at the opposite edge may be bent to the left, as fully shown in said Fig. 1; and the distance which the tongues of one upright extends towards the adjacent upright may depend upon the length of the slit which is made in the upright for that purpose.

When the uprights are used in connection with terra-cotta or other solid or hollow blocks, or bricks, stone etc., which are more or less used in building construction, the uprights will stand between the edges of a vertical line of such blocks and the tongues will

stand horizontal and will overlap the horizontal top and bottom edges of the blocks, as shown in Fig. 1, the said uprights and tongues thereby forming inclosing chambers for the vertical and horizontal edges of the blocks while the front and rear faces of the blocks, may be in a plane substantially flush with the front and rear edges of the uprights and may receive such outer covering or plastic coating as the plans of the building call for.

To afford better security and to more effectually hold the light upright in proper position, the free ends of the tongues may be secured or attached to the blocks in some suitable manner.

If the block is hollow and has the usual internal longitudinal and transverse webs or ribs *a*, the free ends of the tongues may be bent at right angles and made to engage the edge of the block or one of its webs or ribs as shown in Fig. 1, with the tongues at one edge of the upright extending over and being thus attached to the blocks at one side of the upright and the tongues at the opposite edge of the upright extending over and being fitted to the blocks of another row at the other side of said upright. This is the construction shown in Fig. 1, where the tongues are cut from the opposite edges of the upright and one end of the tongues is left attached to the upright.

The tongues might be made of separate pieces riveted or otherwise secured to the uprights as shown at *b*, in Fig. 5, to form, with the uprights, the inclosed chamber for the blocks.

In Fig. 2 I show the upright A^2 as having the tongues a^2 cut from one edge only of the strip and bent as before described, this construction being shown in connection with a wall of blocks, bricks or stone, and the free ends of the tongues being bent as at a^3, or left straight and unbent as at a^4, and secured by a fastening of some kind, which may take the form of a staple a^5 made to embrace the tongues and having its points driven into the joints between adjacent blocks, bricks etc. With such a construction, the opening left by cutting out the tongues will be useful for running of pipes or wires for conducting gas, water, electric currents, etc., throughout the building.

In some instances it is found desirable to form the wall or partition of the uprights with independent bars as at 3 in Fig. 3, these bars, if used single, extending horizontally along either through central slots or openings *b* made in the upright A^5, Fig. 6, or, if used double and parallel, through the channels made in opposite edges of the upright A^3 (Fig. 3). In the latter case, the tongues are cut or project from the edge portions of the upright, while in Fig. 5 they project from the central portions of the upright, but in either case the outer or free ends of these tongues will be fastened or locked to the bars by some appropriate means. In Figs. 3 and 6 the tongues are twisted around the bars to thus lock them to the uprights.

If the tongues are made long enough, and this is within the control of the builder, they may extend from one upright to and through the slot or opening of an adjacent upright, thereby bridging the space between the uprights, as in Fig. 4, and having the free end of one tongue, 4, riveted or otherwise fastened to the base of a corresponding tongue of the next upright, which construction answers substantially the same purpose as the bars of Figs. 3 and 6 in that the pipes and wires before mentioned may be introduced and supported between the uprights.

In Fig. 4, I show a building block or slab C housed substantially as in Fig. 1, the said block or slab having a recessed corner *d*, over which the free end of the tongue 4 may be bent to lie flush with the vertical edge of the block.

When the wall has been built up, the metal lathing or other support for the plaster, or finishing surface, may be attached to the edges of the strips, and the plaster or plastic material being applied, will pass through the interstices of the supporting lathing against the surface of the block or slabs in the manner well known and commonly practiced in this art.

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

1. In a fireproof building construction, the combination of parallel strips having projections extending from the front and back edges with the projections at opposite edges extending in reverse directions and arranged in pairs substantially on the same level, and a building element inclosed by adjacent strips and projections, and having a width substantially equal to the distance between adjacent strips, said element resting in contact with the projections.

2. In a fireproof building construction, the combination of parallel strips slitted in the direction of their length and having the slitted portions extending transversely therefrom in opposite directions to form tongues, the tongues of one strip having a length less than the distance between adjacent strips, and unitary building elements inclosed by the strips and tongues, said tongues having their free ends secured to said elements.

3. In a fireproof building construction, the combination of parallel strips slitted longitudinally and having the slitted portions located at opposite edges thereof to form tongues, said tongues extending in opposite directions and the tongues of one strip extending short of and being unconnected with the adjacent strip, said tongues forming, with the strips, substantially inclosing chambers, and building blocks within said chambers

and bounded by the strips and the tongues thereof.

4. A fireproof building construction comprising parallel strips, hollow building blocks extending between said strips, members extending transversely from the strips above and below the blocks, said members and strips substantially housing the blocks, and said members forming supports for the blocks and having their free ends interlocking therewith.

5. In a fireproof building construction, the combination of vertically disposed parallel strips said strips having a vertical series of tongues cut from opposite edges and projecting transversely, said tongues at one edge of a strip extending opposite to those of the other edge, and vertical rows of building blocks, each of said rows disposed between adjacent strips, said tongues extending above and below each of said blocks and forming supports therefor.

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

CORNELIUS COLLINS.

Witnesses:
C. W. FOWLER,
TIMOTHY COLLINS.