No. 633,252. Patented Sept. 19, 1899.

V. VENEZIA.

FLOOR AND CEILING FOR BUILDINGS.

(Application filed Oct. 19, 1898.)

(No Model.) 2 Sheets—Sheet 1.

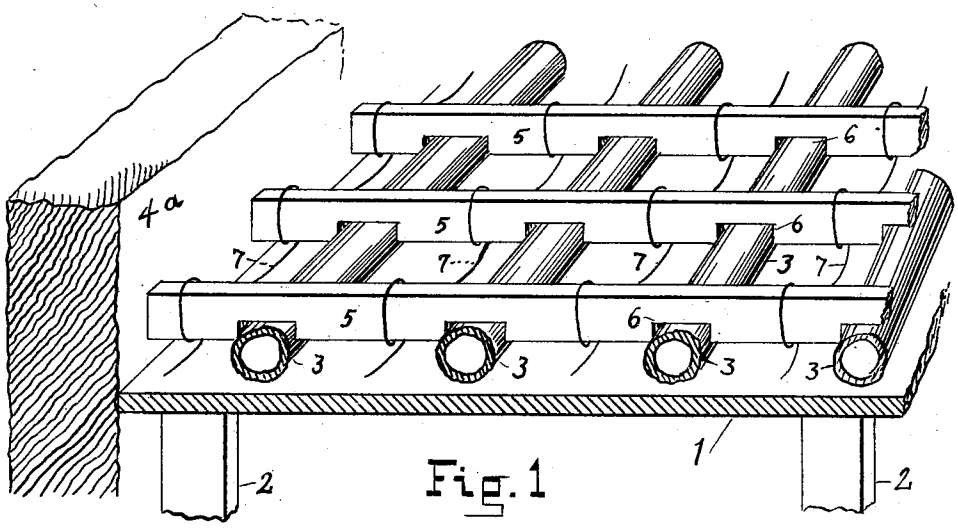


Fig. 1

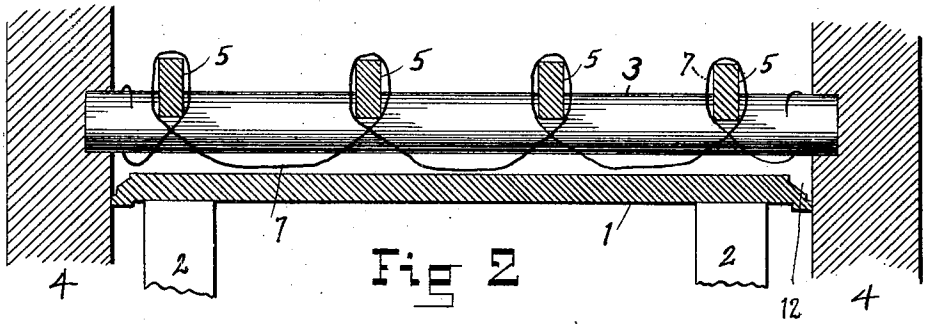


Fig 2

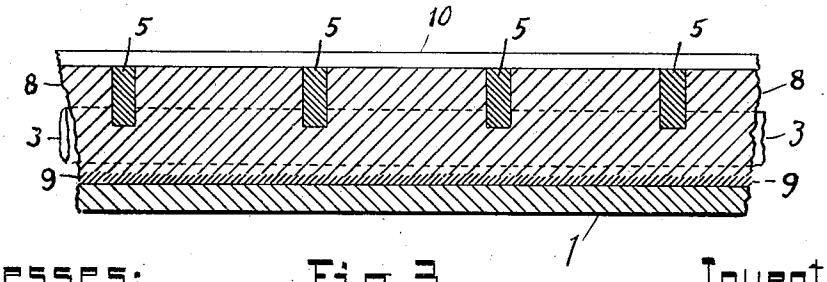


Fig 3

Witnesses;

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Fig 4

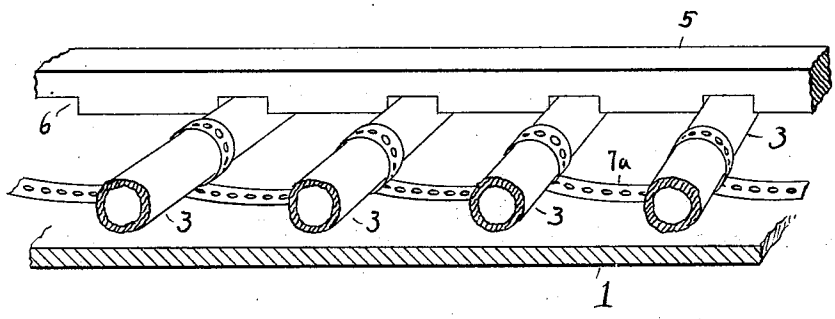


Fig 5

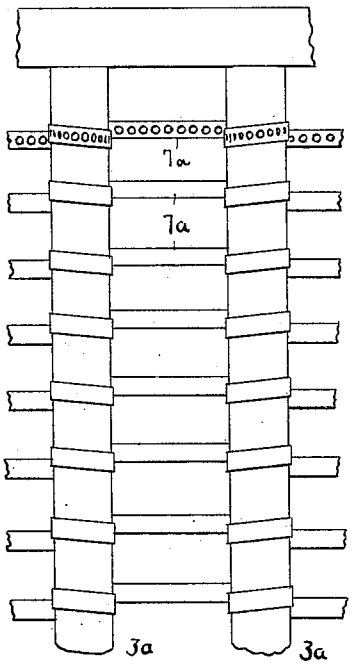


Fig 6

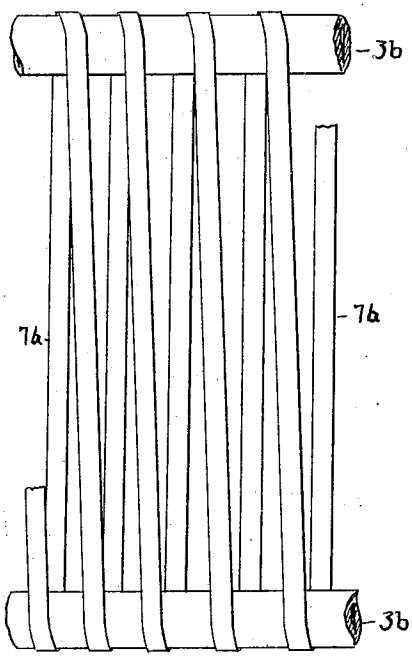
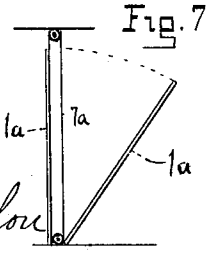


Fig. 7



Witnesses;

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UNITED STATES PATENT OFFICE.

VINCENZO VENEZIA, OF BOSTON, MASSACHUSETTS.

FLOOR AND CEILING FOR BUILDINGS.

SPECIFICATION forming part of Letters Patent No. 633,252, dated September 19, 1899.

Application filed October 19, 1898. Serial No. 693,959. (No model.)

To all whom it may concern:

Be it known that I, VINCENZO VENEZIA, a citizen of the United States, residing at East Boston, county of Suffolk, State of Massachusetts, have invented certain new and useful Improvements in Floors and Ceilings for Buildings, of which the following is a full, clear, and exact description.

The object of my invention is the effecting of means whereby a fire and rat proof floor and also a perfectly-plastered ceiling can be made at the lowest possible cost. I do this by the arrangement of parts and a method of application hereinafter set forth and as illustrated in the drawings, in which—

Figure 1 is a perspective sectional view of my floor-timbers and the apparatus used in connection therewith. Fig. 2 is a vertical section of the same parts on a plane at right angles to that of Fig. 1. Fig. 3 is a vertical section on same plane as that of Fig. 2, but showing the completed floor and ceiling. Fig. 4 is a perspective sectional view of my floor, showing perforated metal ribbon substituted for the wires previously shown. Fig. 5 illustrates such ribbon stretched between vertical posts to form a partition-wall. Fig. 6 shows such ribbon stretched between horizontal beams for the same purpose. Fig. 7 shows the manner of applying the plaster in constructing such partitions.

The floor-timbers comprise the metal tubes 3, terminally supported in the walls or partitions 4, as in Fig. 2, and the wooden scantlings 5, resting upon said tubes and notched, as at 6, to fit down thereon. Heavy wires 7 are coiled from scantling to scantling and allowed to drop slightly below the under level of said tubes. These constitute the essential parts of my floor. I then secure a mold 1 beneath the floor elements, nearly touching the wires 7. This mold may be perfectly plain or more or less configured, as in Fig. 2, and is supported by any suitable scaffolding or posts, as 2. I now begin the first step in my process by pouring liquid plaster-of-paris or other thin plaster upon the mold 1 to a thickness of from an inch to half an inch—enough to envelop much of the hanging portion of the wires 7. This plaster being allowed to set until nearly hard, but still in a somewhat plastic and moist condition, I then shovel upon the same a sufficient quantity of cement, mixed, if desired, with more or less broken stone or brick, to reach above the scantlings 5. If a board flooring 10, as in Fig. 3, is to be laid, this cement is scraped off to a level with the upper edges of said scantlings in order that the boards can be nailed to the same; but if the floor is to be laid with tiles or mosaic the cement should extend over the scantlings. After the plaster and cement have become hard, capable of sustaining any required weight, the mold 1 is taken down and carried to the next room to be similarly finished. It is clear that a ceiling thus plastered is done in a way which far excels the old hand method both in quickness of work and smoothness and finish of surface. So, also, the floor thus constructed is cheap, easily and rapidly made, wholly fireproof and rat-proof, strong, and durable. The wires serve to more securely hold the cement and plaster at the points midway between the timbers.

Although I have shown but a single strand of wire between each pair of tubes 3, I may employ several.

By applying the cement while the plaster is still slightly plastic and moist the two layers are made to be one coherent integral mass.

Among the advantages obtained from the use of the metal tubes 3 are, in addition to the strength and lightness, the spaces which they give from end to end through them for the passage of gas-pipes, speaking-tubes, water-pipes, electric wires, &c.

In the case of floors beneath which there is no desire for a plastered surface the cement can of course be laid directly upon the mold without the previous application of the plaster-of-paris.

In the more perfected form of my invention I substitute sheet-metal ribbon 7^a for the wires 7, perforating the same for the better adhesion of the plaster and cement. This ribbon I wrap about the tubular beams 3 in order to insure against any weakening of their support from fire, for should a fire occur in the room above and the scantlings 5 became burned the ribbon might be badly weakened by the heat, and thus let down the cement floor held by it, or if it did not actually break, it might settle as far as the wood would be charred and the floor and ceiling be

permitted to crack and yield enough to lose its fireproof quality. This construction is illustrated in Fig. 4.

I also apply my construction and process to partition-walls as well as to ceilings and floors. I do this in two ways: in that of Fig. 5 I extend the metal ribbon 7^a horizontally from one to another of the tubular posts 3^a, while in Fig. 6 I have two horizontal tubular beams 3^b, one at the level of the ceiling and the other at the floor of the room. Then I pass the ribbon 7^b up and down about the same, stretching it very tightly. I then pour liquid plaster-of-paris upon a mold 1^a, laid flat upon the floor, letting it remain undisturbed until somewhat hard, although still moist. I then raise this mold with its layer of plaster up against the wall-ribbons 7^b, as shown in Fig. 7, and fasten it in this position, doing the same thing at each side of the partition-wall. While both molds are thus firmly held, I shovel into the spaces between the same and the ribbon a sufficient amount of cement and broken stone to completely fill such spaces. After this has hardened and the cement and plaster become solidly united the molds are removed, the partition found to be perfect and complete.

What I claim as my invention is as follows:

1. The combination in wall or ceiling, of the metal tubes terminally supported, the perforated metal ribbon held by said tubes, and the cement and plaster hardened about the same and supported thereby, whereby a light, strong and fireproof partition is formed and at the same time furnishes uninterrupted spaces for the passage of gas, water, steam or other pipes, substantially as set forth.

2. The combination in a floor, of the metal tubes, the notched scantlings supported thereby, the perforated metal ribbon held by said tubes, and the cement and plaster hardened about the same and supported thereby.

In testimony whereof I have hereunto set my hand this 26th day of September, 1898.

VINCENZO VENEZIA.

Witnesses:
EDWARD DE FEO,
WILLIAM F. GARCELON.