

J. H. WALKER.
Fire-Proof Buildings.

No. 142,422.

Patented September 2, 1873.

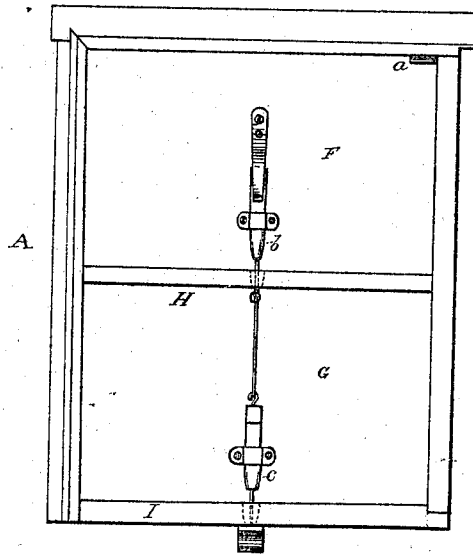


Fig. 1.

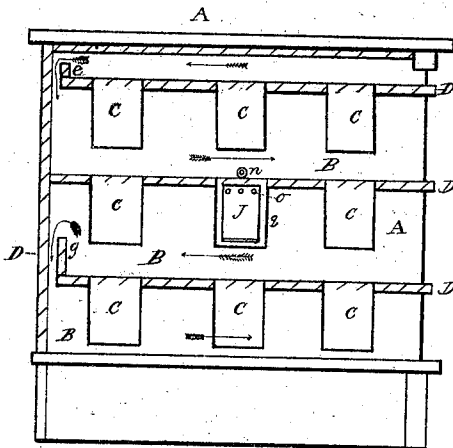


Fig. 2.

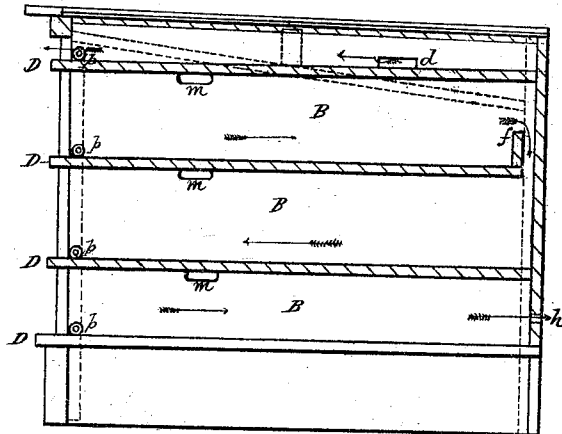


Fig. 3.

WITNESSES:

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IMPROVEMENT IN FIRE-PROOF BUILDINGS.

Specification forming part of Letters Patent No. **142,422**, dated September 2, 1873; application filed June 12, 1873.

To all whom it may concern:

Be it known that I, JOSEPH H. WALKER, of the city and county of Worcester and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Fire-Proof Buildings; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings forming a part of this specification, and in which—

Figure 1 represents a top or plan view of so much of a building as is necessary to illustrate my present improvements. Fig. 2 represents a front view of the same building with the outer or face part of the wall removed to show the water and steam chambers; and Fig. 3 represents a side view of the same building, the water and steam chambers being shown in like manner.

To enable those skilled in the art to which my invention belongs to make and use the same, I will proceed to describe it in detail.

In the drawings, the part marked A represents the inner wall of the building, the outer wall being shown broken away to represent the water and steam passages B more fully. C represents the window-openings, and D the solid part of the wall, which not only serves to connect the outer and inner walls, but, at the same time, to divide the space into proper water and steam chambers or passages B, through which the water can run from top to bottom, as indicated by the arrows. In building the walls the inner sides, which form the water and steam passages B, should be well covered with cement, plaster, or other suitable material. The roof of the building is made with two water-reservoirs, F and G, a water-pipe, *a*, having its discharge-opening upon the bottom of the reservoir F. The partition H has an opening (indicated by dotted lines in Fig. 1) which can be closed by a slide-valve, *b*, and which valve *b* is connected to another slide-valve, *c*, which is arranged to close a hole in the back wall I.

The water and steam passages are to extend entirely around the building; and they may all communicate with each other, or be made separate on each side and end, if preferred. Blinds may be arranged to slide upon the outside, if preferred; and my invention may be

applied to hinged, folding, or other blinds, the arrangement being such that each section of blinds can be filled with water.

The valves *b* and *c* may be combined with a spring which will open them, while a chain, rope, cord, or rod may be attached to the lower valve, and allowed to hang down by the wall of the building, so that it can be readily reached and operated by a person upon the ground.

The operation is as follows: In case of a fire, whether in the building or in the vicinity or close proximity to the same, valves *b* and *c* are drawn down so as to close the openings shown in dotted lines, Fig. 1; and then water is let onto the roof through pipe *a*, which fills the reservoir F until the water flows over the partition H, thereby filling reservoir G until the water reaches the opening *d*, when it runs into the upper water space or passage, and fills that until it runs over the raised part *e*, over which the water continues to flow down into the next water-passage until it runs over the projection *f*, when it descends to the next water-passage, and fills that until it runs over the projection *g* into the bottom water-passage and fills that up to the opening *h*, through which it flows to the ground.

From the foregoing description it will be seen that each water-passage is kept partially filled with water, and, consequently, a fire in the building or on the outside of the building, if sufficient to heat the walls, will generate steam, which will ascend and fill the upper parts of the chambers or passages B, and then escape into the different stories or rooms thereof through suitable openings *m*.

If the fire is on the outside, the building is well and safely protected, since it is surrounded by steam and water, while if the fire is in the building the steam will put the fire out.

In order to protect the window-openings C, hollow sliding metal shutters J are arranged upon the inside, and so constructed that they can be filled by the water in the wall. One plan I have shown in Fig. 2, in which a pipe, *n*, passes in from the water-passage, and delivers the water into the upper end of the hollow blind, and fills it until the water runs out of the holes *o*. As the water runs out of the holes *o* it falls upon the window-sill, and thus

keeps the outside of the blind and window-jamb constantly wet. Various other modes of introducing the water into the blinds may be adopted.

Each water-passage is connected, by a pipe, *p*, with a main drain-pipe, shown in dotted lines, Fig. 3, whereby the water can be drawn off from the passages or chambers *B* at pleasure.

It will be seen that, in the case of stores or business-blocks, the police or watchman, in case of a fire, can quickly turn on the water, and thus, in a few minutes, any desired number of buildings, can be rendered fire-proof in the manner above described.

In the construction of brick buildings it is now quite common to lay the walls with an air-space in or near the center; and it will require but a slight additional expense to build one of my fire-proof buildings over the present mode of building.

It may be remarked that the openings for the windows should be surrounded by a tight wall, *q*, Fig. 2; and care should also be taken to plaster the inside of the walls so as to ren-

der them sufficiently tight to hold the water during a fire.

Having described my improvements in fire-proof buildings, what I claim therein as new and of my invention, and desire to secure by Letters Patent, is—

A fire-proof building constructed substantially as herein described—that is to say, with double walls inclosing a space between them continuous from top to bottom of the house, and partially divided by horizontal partitions, provided with overflow-partitions *e, f, g, &c.*, combined with a reservoir on the top of the house, supplied with water from a convenient source, and arranged to communicate with said space inclosed between the walls of the house, valves for regulating the supply of water and drain-pipes being also provided, the whole under the arrangement substantially as shown and set forth.

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Witnesses:

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