

(No Model.)

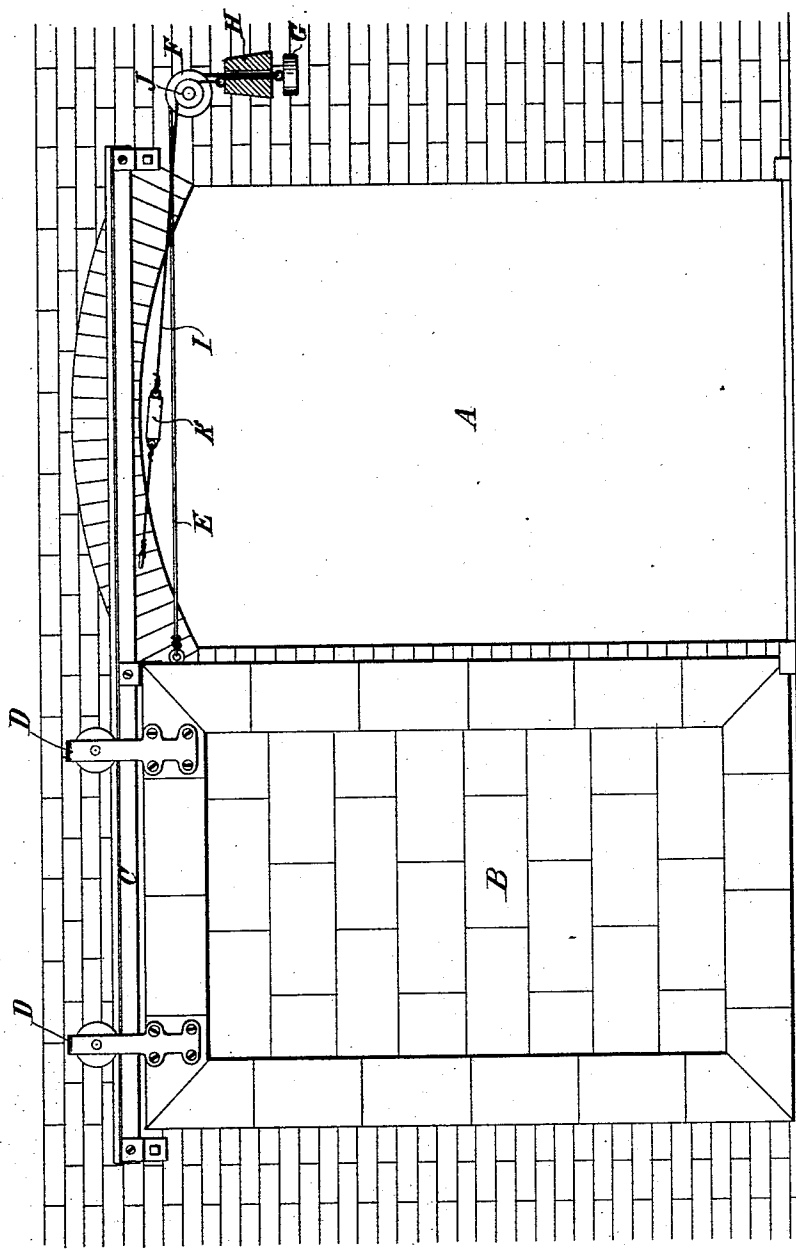
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H. B. NEWHALL.
THERMAL DOOR CLOSING MECHANISM.

No. 570,710.

Patented Nov. 3, 1896.

Fig. 1



Witnesses:

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 2

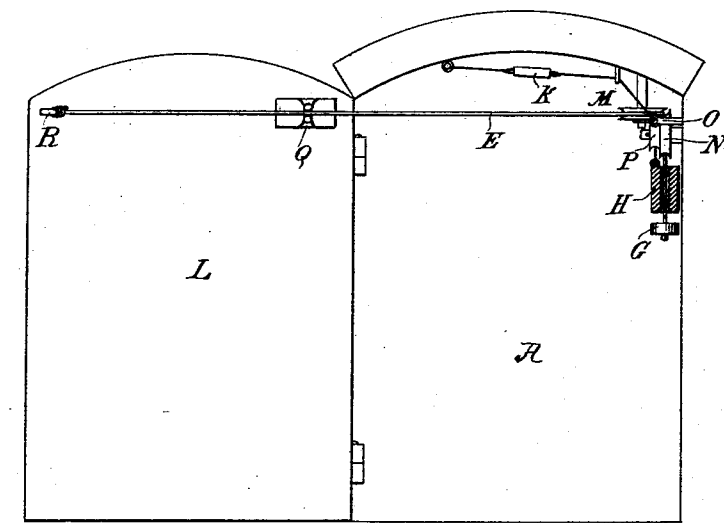
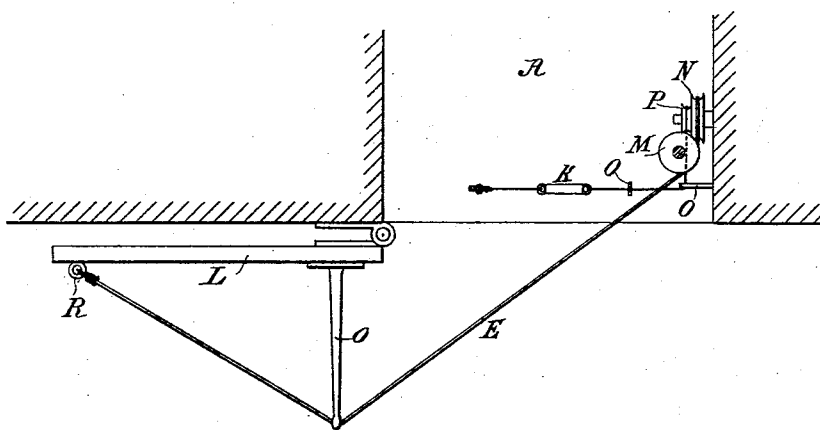


Fig. 3



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UNITED STATES PATENT OFFICE.

HENRY B. NEWHALL, OF PLAINFIELD, NEW JERSEY.

THERMAL DOOR-CLOSING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 570,710, dated November 3, 1896.

Application filed August 23, 1894. Serial No. 521,090. (No model.)

To all whom it may concern:

Be it known that I, HENRY B. NEWHALL, a citizen of the United States, residing at Plainfield, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Thermal Door-Closing Mechanism, of which the following is a specification, reference being had to the drawings accompanying and forming a part of the same.

The present invention relates to improvements in devices for automatically closing fire-doors, which devices are operative upon the occurrence of a certain temperature in the region of the door and are at other times inoperative and unobstructive to the ordinary opening and closing of such door.

The invention consists of a fire-door mounted upon suitable supports permitting it to be moved to close a doorway, passage-way, window-space, or the like, and is provided with a weight normally held suspended and independent of the movement of the door by a thermal or fusible piece or connection, and of connections between the said weight and the said door arranged in such manner that, upon the fusing or separation of the said fuse, the said weight will be released and by its fall will engage the connections between it and the door and cause the latter to close.

In the drawings accompanying this specification, Figure 1 represents a front or elevation view of the walls of a doorway and of a door provided with one form of my thermal door-closing mechanism, the door in this case being one running on a trolley-track. Fig. 2 represents in elevation a modification of the thermal door-closing device as applied to a door having angular movement or one swinging on hinges, and Fig. 3 is a plan of the same.

Referring to the drawings in detail, A represents the passage-way or passage-space that it may be desired to close in the event of fire.

B represents a fire-door.

C is the trolley-track, and D the trolley-supports of the same.

To the door is attached a wire rope or similar device E, which runs over a pulley F to a small weight G, which ordinarily will be no heavier than is necessary to keep the rope E taut, as in the ordinary cases when the door B is moved to and from the passage-way A.

H is a door-closing weight hung by the wire rope I, running preferably over any proper support, as the pulley J, and secured to the fusible piece K, which latter is preferably ar-

ranged in close juxtaposition to the top of the doorway. In the case of an arched doorway the fuse is arranged at the top of or just above the top of the arch of the same. The rope E passes freely down through the safety-weight H to the small weight G, and the safety-weight is so arranged that in case of its descent it will engage the weight G and correspondingly pull upon the door-closing rope E.

The operation of the mechanism will now be plain. Assuming that the door is in the withdrawn position, as shown, and that a fire occurs, the increased temperature, which will be first felt at the top of the doorway, will cause the fusible piece to melt, thereby disconnecting the door-closing weight and allowing the weight to fall. In falling the weight will engage the door-closing wire and will thereby pull the door to closed position.

In Fig. 2 I show a hinged door L. Here—as an illustration of one method of applying my invention to such door—the door-closing wire E runs to within the passage or doorway A and over pulleys M and N to the weight G. As in Fig. 1, the fusible piece is arranged at the top of the doorway-space and runs through the eyes O and over the pulley P or similar directing devices and to the door-closing weight H, as before. The door-closing cord E in this case passes over the end of the arm Q, projecting from the door at its inner edge, but the cord does not permanently engage this arm and is continued to and is permanently fixed to the outer edge of the door at R. This arrangement of this cord E provides for the proper pull or leverage upon the door and insures the safety-weight swinging the same when said weight is released.

What is claimed as new is—

In a thermal door-closing mechanism, the door B, hung so as to be opened and closed, the rope E, and weight G, attached to and traveling with the door, the safety-weight, and a fusible plug adapted to hold the safety-weight in suspended position and out of operative connection with the rope, said safety-weight being freely movable upon said rope E, substantially as and for the purposes hereinbefore set forth.

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Witnesses:

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