

PATENT SPECIFICATION

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(54) A SUSPENDED ANTI-SMOKE SCREEN AND CONSTRUCTION METHOD

(71) I, KIYOTAKA MIYOSHI, a citizen of Japan, residing at 2-38, 2-chome, Kamiyacho, Hiroshima-shi, Hiroshima-ken, Japan, do hereby declare the invention for which I pray that a Patent may be granted to me and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to a suspended anti-smoke baffle or screen and to an improvement of the invention disclosed in U.K. Patent Specification No. 1 541 061.

In the event of a fire in a building, the fire must be prevented from spreading and the occupants of the building or the people working there must be swiftly evacuated. For this purpose, various fire extinguishers and fire alarms are available. The smoke generated by a fire quickly spreads along the ceiling and reaches far from the origin of the fire. On account of this phenomenon even the people who have no need to hasten evacuation become disquieted and stampede, resulting in a disaster. To prevent such a calamity, suspended anti-smoke screens have been devised to be hung from the ceilings at intervals. Tests show that these screens can effectively prevent the smoke from spreading along the ceiling.

In the conventional practice the anti-smoke screens are built penetrating the ceiling and the work of installing the ceiling member is troublesome and heavy.

The object of the invention is to provide a suspended anti-smoke screen of efficient form which can easily be fitted to a ceiling.

According to the present invention, there is provided a suspended anti-smoke baffle or screen comprising a channel member with two opposed walls, receiving edges for carrying ceiling boards, which edges extend outwardly from opposite sides of the channel member respectively in the horizontal direction, in use, a means to hang said channel member in a building, a plurality of hang-

ing rods suspended from within said channel member, each hanging rod having a receiving means at its lower end, and a screen means located between said hanging rods, with the bottom end of said screen means being supported by said receiving means of said hanging rods and the top end of the screen extending into said channel member.

According to a further aspect, the invention provides a process of constructing a suspended anti-smoke baffle or screen comprising the steps of suspending at intervals in the building, a plurality of channel members each with two opposed walls and receiving edges for carrying ceiling boards extending outwardly from opposite sides of each channel member respectively in the horizontal direction, fitting a screen to each channel member by means of hanging rods suspended from within the channel member and having receiving means at their lower ends respectively and fitting ceiling boards over said receiving edges between adjacent channel members.

The invention will now be described by way of example with reference to the accompanying drawings, in which:—

Figure 1 is a fragmentary side view of part of an anti-smoke baffle or screen according to the invention hung from a ceiling;

Figure 2 is a sectional view along the line II-II of Figure 1;

Figure 3 is a fragmentary perspective view of a channel member of the screen.

The channel member 1 is a long element, open downwardly, with two vertical side walls 2, 3. The bottoms of the two side walls 2, 3 are provided with receiving edges or wings 4, 4 which extend outwardly in the horizontal direction. The receiving edges or wings 4, 4 may be provided on the middle portion of each of the side walls 2, 3. Between the two side walls 2, 3 there is integrally provided a linking member 5 which links said two side walls. Inward flanges 6, 90

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6, 7, 7 project in alignment from said two side walls parallel with said linking member 5. Thus upper and lower longitudinal slits 8, 9 are formed between the inward edges of these flanges.

The channel member 1 with such a shape can be hung in a specific direction and at a specific height by inserting the screw portions of the bottom end of threaded rods 11 fitted by screw-bolt means to the angle members of the building (not shown), into the upper slit 8 of the channel member, and thereby engaging said screw portions with nuts 12 located there.

Next, ceiling boards 13 are fitted to lie on the receiving edges 4 of the channel members which are provided at intervals or on the receiving edges 4 of the channel members and other receiving edges installed in the building.

Then from below the channel member 1, the top threaded portion of a hanging rod 16 with a metal receiver 14 fixed at the bottom with a screw 15, is pushed up into the lower slit 9, and engaged with a nut 17 located there.

A plurality of such hanging rods 16 hang from the channel member 1. The bottom edge of a screen 18, made, for example of glass or iron, is held between the metal receivers at the bottom ends of a pair of hanging rods 16, while the top edge of said screen 18 extends into an opening 19 of the channel member 1 and this edge is fixed with caulking 20 which fills said opening 19.

The construction of the channel member is such that the installation of the ceiling boards can be facilitated with work time shortened and costs cut down.

WHAT WE CLAIM IS:—

1. A suspended anti-smoke baffle or screen comprising a channel member with two opposed walls, receiving edges for carrying ceiling boards, which edges extend outwardly from opposite sides of the channel member respectively in the horizontal direction, in use, a means to hang said channel member in a building, a plurality of hanging

rods suspended from within said channel member each hanging rod having receiving means at its lower end, and a screen means located between said hanging rods with the bottom end of said screen means being supported by said receiving means of said hanging rods and the top end of the screen extending into said channel member.

2. A suspended anti-smoke screen as claimed in claim 1 wherein the channel member has a slit into which threaded rods are inserted to hang the channel member in a building, and a slit into which the hanging rods are pushed.

3. A suspended anti-smoke screen as claimed in claim 1 or claim 2 wherein both sides of the channel member have the receiving edge at the bottom ends of the opposed walls.

4. A process of constructing a suspended anti-smoke baffle or screen as claimed in claim 1, comprising the steps of suspending at intervals in the building, a plurality of channel members each with two opposed walls and receiving edges for carrying ceiling boards outwardly from opposite sides of each channel member respectively in the horizontal direction, fitting a screen to each channel member by means of hanging rods suspended from within the channel member and having receiving means at their lower ends respectively and fitting ceiling boards over said receiving edges between adjacent channel members.

5. A suspended anti-smoke baffle or screen substantially as hereinbefore described with reference to and as shown in the accompanying drawings.

6. A process for constructing a suspended anti-smoke baffle or screen substantially as hereinbefore described with reference to and as shown in the accompanying drawings.

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Next, ceiling boards 13 are fitted to lie on the receiving edges 4 of the channel members which are provided at intervals or on the receiving edges 4 of the channel members and other receiving edges installed in the building.

Then from below the channel member 1, the top threaded portion of a hanging rod 16 with a metal receiver 14 fixed at the bottom with a screw 15, is pushed up into the lower slit 9, and engaged with a nut 17 located there.

A plurality of such hanging rods 16 hang from the channel member 1. The bottom edge of a screen 18, made, for example of glass or iron, is held between the metal receivers at the bottom ends of a pair of hanging rods 16, while the top edge of said screen 18 extends into an opening 19 of the channel member 1 and this edge is fixed with caulking 20 which fills said opening 19.

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WHAT WE CLAIM IS:—

1. A suspended anti-smoke baffle or screen comprising a channel member with two opposed walls, receiving edges for carrying ceiling boards, which edges extend outwardly from opposite sides of the channel member respectively in the horizontal direction, in use, a means to hang said channel member in a building, a plurality of hanging

rods suspended from within said channel member each hanging rod having receiving means at its lower end, and a screen means located between said hanging rods with the bottom end of said screen means being supported by said receiving means of said hanging rods and the top end of the screen extending into said channel member.

2. A suspended anti-smoke screen as claimed in claim 1 wherein the channel member has a slit into which threaded rods are inserted to hang the channel member in a building, and a slit into which the hanging rods are pushed.

3. A suspended anti-smoke screen as claimed in claim 1 or claim 2 wherein both sides of the channel member have the receiving edge at the bottom ends of the opposed walls.

4. A process of constructing a suspended anti-smoke baffle or screen as claimed in claim 1, comprising the steps of suspending at intervals in the building, a plurality of channel members each with two opposed walls and receiving edges for carrying ceiling boards outwardly from opposite sides of each channel member respectively in the horizontal direction, fitting a screen to each channel member by means of hanging rods suspended from within the channel member and having receiving means at their lower ends respectively and fitting ceiling boards over said receiving edges between adjacent channel members.

5. A suspended anti-smoke baffle or screen substantially as hereinbefore described with reference to and as shown in the accompanying drawings.

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