

PATENT SPECIFICATION

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DRAWINGS ATTACHED

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(54) SEALING STRIP

(71) I, KUNIO ISAMATSU, a subject of Japan, of 11-4, 5-Chome, Sekimae, Musashino-Shi, Tokyo-To, 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:—

This invention relates to a sealing strip for sealing the gaps between closed doors and their doorways against leakage there-through of draughts, sounds, heat, and other elements, and more particularly to a resilient sealing strip applicable over the whole length of the outwardly facing surfaces of the vertical members of the door which abut against the door frames.

Heretofore, the commonly accepted practice in preventing the leakage of draughts, sounds, heat, and other elements, past sliding doors when these doors are closed, has been to provide sealing strips on the surfaces of the door stop ledges (hereinafter referred to as "door stops") or the parts against which the doors are abutted in their closed states. In almost all cases, however, the gap between the abutting surface of the door stop and the confronting surface of the door is insufficient for attachment of a sealing strip by means of an adhesive and screws or nails, or metal strips and screws, nails, and the like.

Furthermore, in recently produced metal doorways, the widths of the door stops are usually very small, further increasing the difficulty of applying sealing strips thereon. In the case where sealing strips are applied on the door frames, if a suitable measure such as providing grooves in the abutting surfaces of the door stop is not taken, malfunctioning effects will be brought about in the closed positions of the sliding doors, and the provision of grooves for packing strips in already-installed door stops is not practicable.

Therefore, the principal object of the present invention is to provide a new and improved sealing strip in which the above-

described difficulties are completely eliminated.

Another object of the present invention is to provide a sealing strip of the above-stated character in which the attachment of the strip is strengthened, and the exterior appearance of the entire strip is rendered neat and aesthetically pleasant.

According to the present invention, there is provided a resilient sealing strip having a substantially channel-shaped cross-section one side wall being straight and forming a flat base for attachment of the strip, the other side wall being longer and comprising two mutually inclined flat portions formed integrally and contiguous with each other, the outermost portion converging towards the plane in which the straight side wall lies.

Advantageously the exposed surfaces of the strip are covered by a pile.

Various sealing strips according to the present invention will be described, by way of example only, with reference to the accompanying drawings, in which:—

Figure 1 is a front view of a pair of sliding doors and part of the door stop jambs, as viewed from the interior side of the doors;

Figure 2 is a transverse sectional view of the sliding door and stop jambs shown in Figure 1, the inner door being partially opened and the middle parts of the doors are cut away; and

Figures 3 to 5 show enlarged sectional views of three embodiments of the sealing strip to be applied on the vertical members of the frames of the sliding doors.

As shown in Figures 2 to 5, the sealing strip in accordance with the invention comprises a resilient sealing strip *c* secured along the whole length of each outer vertical edge of the doors 3 and 4 abutting the door stops 1 and 2. Each sealing strip is in the form of a channel of substantially U-shaped cross-section, having one side-wall in the form of a flat base part *a* secured to the outwardly facing surfaces

of the vertical members of the frames of the doors 3 and 4, and a longer side-wall forming a door-stop-contacting part *c*. The base part *a* and door-stop-contacting part *c* extend from opposite edges of a straight web part *b*. The outermost portion of the door-stop-contacting part *c* converges (in the direction away from the web part *b*) towards the plane in which the base part *a* lies. The door-stop-contacting part *c* consists of two plane portions, formed integrally with one another as shown in Figures 3, 4 and 5. The outermost edge of the part *c* may be provided with a bulbous bead. Exposed parts of the strip are covered with pile *d* by a flocking procedure, and the flat base part *a* is secured to the outwardly facing surfaces of the vertical members of the frames of the sliding doors 3 and 4, for instance, by an adhesive and screws or nails, or by metal strips and screws, nails, or the like. Accordingly, the outermost edge of each door-stop-contacting part *c* touches the abutting surface of the door stop 1 or 2, and at the time the sliding door 3 or 4 is closed and the vertical member of the door frame contacts the abutting surface of the door stop 1 or 2, the door-stop-contacting part *c* is deformed as shown on the left in Figure 2.

Since, in all applications of the sealing strip of the present invention, the sealing strip is secured to the outwardly facing surfaces of the vertical members of the door frame, the sealing strip can be firmly secured by means of, for instance, metal strips and screws or nails, irrespective of the width of the door stop, and regardless of whether the door is new or old.

Furthermore, the unique cross-sectional form of the sealing strip in accordance with the present invention, especially the door-stop-contacting part *c* affords full and advantageous utilisation of the resilience of the sealing strip which, together with the function of the pile covering, is highly effective in sealing the gaps between the sliding door and the door stops against leakage of draughts, sounds, heat, and other elements, even when considerable width of gap exists between the sliding doors and the door stops.

A further advantageous feature of the sealing strip in accordance with the present invention is in its low resistive force or repulsive tendency, when the sliding door is closed, as a result of the extremely resilient nature of the door-stop-contacting portion *c* of the resilient sealing strip.

A still further advantageous feature of the sealing strip of the invention is that the web part *b* and the door-stop-contacting part *c* of the sealing strip serve effectively to conceal the securing means, such as metal strips and the heads of nails or screws, whereby the sealing strip, when installed, presents a neat and aesthetically pleasant appearance.

Still another advantageous feature of the sealing strip of the invention is that the pile covering *d* can furnish effective protection against snow or sunlight, and even in the case of tropical or cold climate application, deterioration of the strip is effectively prevented.

WHAT I CLAIM IS:—

1. A resilient sealing strip having a substantially channel-shaped cross-section, one side wall being straight and forming a flat base for attachment of the strip, the other side wall being longer and comprising two mutually inclined flat portions formed integrally and contiguous with each other, the outermost portion converging towards the plane in which the straight side wall lies.

2. A sealing strip as claimed in claim 1 in which the outer most portion of the side wall terminates in a bulbous portion.

3. A sealing strip as claimed in claim 1 or 2 in which the exposed surfaces of the strip are covered with a pile.

4. A resilient sealing strip substantially as described herein with reference to any one of Figures 2, 3, 4 or 5 of the accompanying drawing.

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of the vertical members of the frames of the doors 3 and 4, and a longer side-wall forming a door-stop-contacting part c. The base part a and door-stop-contacting part c extend from opposite edges of a straight web part b. The outermost portion of the door-stop-contacting part c converges (in the direction away from the web part b) towards the plane in which the base part a lies. The door-stop-contacting part c consists of two plane portions, formed integrally with one another as shown in Figures 3, 4 and 5. The outermost edge of the part c may be provided with a bulbous bead. Exposed parts of the strip are covered with pile d by a flocking procedure, and the flat base part a is secured to the outwardly facing surfaces of the vertical members of the frames of the sliding doors 3 and 4, for instance, by an adhesive and screws or nails, or by metal strips and screws, nails, or the like. Accordingly, the outermost edge of each door-stop-contacting part c touches the abutting surface of the door stop 1 or 2, and at the time the sliding door 3 or 4 is closed and the vertical member of the door frame contacts the abutting surface of the door stop 1 or 2, the door-stop-contacting part c is deformed as shown on the left in Figure 2.

Since, in all applications of the sealing strip of the present invention, the sealing strip is secured to the outwardly facing surfaces of the vertical members of the door frame, the sealing strip can be firmly secured by means of, for instance, metal strips and screws or nails, irrespective of the width of the door stop, and regardless of whether the door is new or old.

Furthermore, the unique cross-sectional form of the sealing strip in accordance with the present invention, especially the door-stop-contacting part c affords full and advantageous utilisation of the resilience of the sealing strip which, together with the function of the pile covering, is highly effective in sealing the gaps between the sliding door and the door stops against leakage of draughts, sounds, heat, and other elements, even when considerable width of gap exists between the sliding doors and the door stops.

A further advantageous feature of the sealing strip in accordance with the present invention is in its low resistive force or repulsive tendency, when the sliding door is closed, as a result of the extremely resilient nature of the door-stop-contacting portion c of the resilient sealing strip.

A still further advantageous feature of the sealing strip of the invention is that the web part b and the door-stop-contacting part c of the sealing strip serve effectively to conceal the securing means, such as metal strips and the heads of nails or screws, whereby the sealing strip, when installed, presents a neat and aesthetically pleasant appearance.

Still another advantageous feature of the sealing strip of the invention is that the pile covering d can furnish effective protection against snow or sunlight, and even in the case of tropical or cold climate application, deterioration of the strip is effectively prevented.

WHAT I CLAIM IS:—

1. A resilient sealing strip having a substantially channel-shaped cross-section, one side wall being straight and forming a flat base for attachment of the strip, the other side wall being longer and comprising two mutually inclined flat portions formed integrally and contiguous with each other, the outermost portion converging towards the plane in which the straight side wall lies.

2. A sealing strip as claimed in claim 1 in which the outer most portion of the side wall terminates in a bulbous portion.

3. A sealing strip as claimed in claim 1 or 2 in which the exposed surfaces of the strip are covered with a pile.

4. A resilient sealing strip substantially as described herein with reference to any one of Figures 2, 3, 4 or 5 of the accompanying drawing.

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