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## ANTI-SKID PACKING STRIP FOR GRANITE STAIRS

### BACKGROUND OF THE INVENTION

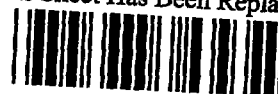
The present invention relates to an anti-skid packing strip for granite stairs, and more particularly to such an anti-skid  
5 packing strip which is comprised of a rigid mounting strip adhered to a transverse mounting groove in a granite stair, and a flexible anti-skid strip coupled to the mounting strip at the top.

When stairs are constructed, each step may be mounted with an anti-skid packing strip to prevent a foot slip. Regular  
10 anti-skid packing strips for this purpose are simply a brass strip or plastic strip adapted for fastening to a stair by a glue. When an anti-skid packing strip is installed, it projects from the top side of the stair at about 6mm, therefore people tend to trip on an anti-skid packing strip. Furthermore, these anti-skid packing strips are not  
15 suitable for use in stairs made from marble, granite or wood. In order to prevent a foot slip, granite or marble stairs are processed through a sand blasting process to provide a coarse surface. However, this method cannot effectively prevent a food slip.

### SUMMARY OF THE INVENTION

20 The present invention has been accomplished to provide an anti-skid packing strip which eliminates the aforesaid problems. It is one object of the present invention to provide an anti-skid

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packing strip which is practical for use in granite stairs. It is another object of the present invention to provide an anti-skid packing strip for granite stairs which effectively prevent a foot slip. According to one embodiment of the present invention, the an

5 anti-skid packing strip comprises a rigid mounting strip fixedly mounted in a transverse mounting groove in a stair, the rigid mounting strip comprising a channel-like base fitting the transverse mounting groove of the stair, an elongated raised portion longitudinally disposed in the middle of the elongated flat

10 base, two outward flanges outwardly raised along two opposite long sides of the channel-like base and adapted for covering over two opposite side edges of the transverse mounting groove of the stair, and two inward flanges inwardly raised along two opposite long sides of the channel-like base; and an anti-skid strip made

15 from wear resistant, flexible material and fitted into the channel-like base of the mounting strip, the anti-skid strip comprising a top side, a bottom side, a plurality of longitudinal ribs raised from the top side and disposed in parallel, two coupling grooves bilaterally disposed at the top side and respectively forced into engagement

20 with the inward flanges of the mounting strip, a longitudinal bottom mounting groove disposed at the bottom side and forced into engagement with the elongated raised portion of the mounting



strip, and two narrow, elongated gaps formed in the bottom side and disposed at two opposite sides of the longitudinal bottom mounting groove, each of the longitudinal ribs having a top side sloping downwardly forwards, an angled rear edge, and a smoothly  
5 curved front edge.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

Fig. 1 is a cross sectional view of an anti-skid strip according to one embodiment of the present invention;

Fig. 2 is an exploded view of an anti-skid packing strip  
10 according to the present invention;

Fig. 3 is a cross sectional view of the anti-skid packing strip shown in Figure 2, showing the anti-skid strip and the mounting strip fastened together;

Fig. 4 is a cross sectional view of the anti-skid packing  
15 strip shown in Figure 2, showing the flat cushion and the mounting strip fastened together;

Fig. 5 is an installed view of the present invention, showing one coupling groove of the anti-skid strip inserted into engagement with one inward flange of the mounting strip;

20 Fig. 6 is an assembly view of Figure 2;

Fig. 7 is a sectional view of an alternate form of the anti-skid packing strip according to the present invention;

Fig. 8 is a cross sectional view showing two anti-skid strips arranged in parallel according to another alternate form of the present invention;

Fig. 9 is a sectional view showing the anti-skid strip of the  
5 embodiment of Figure 1 installed; and

Fig. 10 is a sectional view showing the anti-skid strips of the embodiment of Figure 8 installed.

#### **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT**

Referring to Figures 2, 3 and 4, an anti-skid packing strip  
10 in accordance with the present invention, is adapted for mounting in a transverse mounting groove 41 of a stair 40, comprised of a mounting strip 10, and an anti-skid strip 20. The mounting strip 10 is extruded from for example aluminum alloy, stainless steel or brass, comprised of a channel-like base 11 fitting the transverse  
15 mounting groove 41 of the stair 40, an elongated raised portion 12 longitudinally disposed in the middle of the elongated flat base 11 along the length to reinforce the structural strength of the mounting strip 10, two outward flanges 13 outwardly raised along two opposite long sides of the channel-like base 11 and adapted for  
20 covering over two opposite side edges of the transverse mounting groove 41 of the stair 40, and two inward flanges 14 inwardly raised along two opposite long sides of the channel-like base 11



and adapted for covering on two opposite long sides of the anti-skid strip 20. The anti-skid strip 20 is made from wear resistant, flexible material and fits channel-like base 11 of the mounting strip 10, comprising a plurality of longitudinal ribs 21 raised from the top along the length and disposed in parallel, two coupling grooves 24 bilaterally disposed at the top along the length and respectively coupled to the inward flanges 14 of the mounting strip 10, a longitudinal bottom mounting groove 26 disposed at the bottom side along the length and forced into engagement with the elongated raised portion 12 of the mounting strip 10, and two narrow, elongated gaps 25 disposed at two opposite sides of the longitudinal bottom mounting groove 26. Each longitudinal rib 21 slopes forwards, comprising a neck portion 27 at the bottom side connected to the top side of the anti-skid strip 20, an angled rear edge 23 at the back side, and a smoothly curved front edge 22 at the front side at a lower elevation than the angled rear edge 23. The narrow, elongated gaps 25 enable the anti-skid strip 20 to be flexibly compressed. Because the longitudinal ribs 21 have a respective front side smoothly curved (the smoothly curved front edge 22) and disposed at a lower elevation than the respective rear side (the angled rear edge 23), one can smoothly step on the anti-skid strip 20 when goes upstairs. Because the longitudinal ribs 21



have a respective rear side angled (the angled rear edge 23) and disposed at a higher elevation than the respective front side (the smoothly curved front edge 22), the angled rear edges 23 of the longitudinal ribs 21 can stop the shoes from slipping when a person goes downstairs. Furthermore, the neck portions 27 permit the longitudinal ribs 21 to be flexibly compressed when a person steps on the anti-skid strip 20.

The transverse mounting groove 41 is formed in the stair 40 by cutting (by means of a tungsten carbide or artificial diamond milling cutter), a glue is applied to the transverse mounting groove 41, and then the mounting strip 10 is fastened to the transverse mounting groove 41, and then the anti-skid strip 20 is inserted into the channel-like base 11 and set into position by: tilting the anti-skid strip 20 and forcing one coupling groove 24 of the anti-skid strip 20 into engagement with one inward flange 14 of the mounting strip 10 (see Figure 5), and then forcing the other coupling groove 24 of the anti-skid strip 20 into engagement with the other inward flange 14 of the mounting strip 10.

Referring to Figure 6 and Figures 2 and 4 again, two flat cushions 30 may be fastened to the mounting strip 10, and respectively abutted against two opposite ends of the anti-skid strip 20. The flat cushions 30 have a respective smooth top side



through which dust can be conveniently wiped away.

Figure 1 is a cross sectional view of an alternate form of the anti-skid strip according to the present invention. According to this alternate form, the anti-skid strip 2' comprises a plurality of peripherally smoothly curved longitudinal ribs 20' longitudinally raised from the top side and arranged in parallel, two longitudinal coupling grooves 21', 22' bilaterally disposed at the top and adapted for coupling to the inward flanges 14 of the aforesaid mounting strip 10, a longitudinal bottom mounting groove 23' disposed at the bottom side along the length and adapted for coupling to the elongated raised portion 12 of the aforesaid mounting strip 10, and two narrow, elongated gaps 24', 25' disposed at two opposite sides of the longitudinal bottom mounting groove 23'. Figure 9 shows this alternate form installed. The anti-skid strip 2' may be made in the form shown in Figure 7, or the form shown in Figure 8. In Figures 8 and 10, two anti-skid strips 2' are installed in the stair 40 and arranged in parallel.

It is to be understood that the drawings are designed for purposes of illustration only, and are not intended as a definition of the limits and scope of the invention disclosed.

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**What the invention claimed is:**

1. An anti-skid packing strip comprising: a rigid mounting strip fixedly mounted in a transverse mounting groove in a stair, said rigid mounting strip comprising a channel-like base fitting the transverse mounting groove of said stair, an elongated raised portion longitudinally disposed in the middle of said elongated flat base, two outward flanges outwardly raised along two opposite long sides of the channel-like base and adapted for covering over two opposite side edges of the transverse mounting groove of said stair, and two inward flanges inwardly raised along two opposite long sides of said channel-like base; and an anti-skid strip made from wear resistant, flexible material and fitted into the channel-like base of said mounting strip;

wherein said anti-skid strip comprises a top side, a bottom side, a plurality of longitudinal ribs raised from the top side and disposed in parallel, two coupling grooves bilaterally disposed at the top side and respectively forced into engagement with the inward flanges of said mounting strip, a longitudinal bottom mounting groove disposed at the bottom side and forced into engagement with the elongated raised portion of said mounting strip, and two narrow, elongated gaps formed in the bottom side and disposed at two opposite sides of said longitudinal bottom

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mounting groove, each of said longitudinal ribs having a top side sloping downwardly forwards, an angled rear edge, and a smoothly curved front edge.

2. The anti-skid packing strip of claim 1 wherein each of  
5 said longitudinal ribs has a neck portion connected to the top side of said anti-skid strip.

3. The anti-skid packing strip of claim 1 wherein each of said longitudinal ribs has a smoothly curved top side.

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