

PATENT SPECIFICATION

(11) 1235 025

DRAWINGS ATTACHED

- (21) Application No. 29075/69 (22) Filed 9 June 1969
 (31) Convention Application No. 17184 (32) Filed 28 Feb. 1969 in
 (33) Japan (JA)
 (45) Complete Specification published 9 June 1971
 (51) International Classification E 06 b 7/22
 (52) Index at acceptance E1J 5213 5236



(54) SEALING STRIPS

(71) I, KUNIO ISAMATSU, a Japanese subject, 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 generally to sealing strips for preventing passage of fluids through spaces between closely spaced surfaces and/or edges of structures and more particularly to a new airtight, watertight sealing strips having highly desirable characteristics.

Airtight, watertight sealing strips which, moreover, have low thermal conductivities are necessary for thermal insulation or prevention of heat transfers in refrigerators, refrigerated rooms and warehouses, refrigeration plants, and other installations, machines and equipment. Among the materials used for such sealing strips, rubbers have been heretofore used widely, but most rubbers harden, and their elasticities decrease, at low temperatures. Consequently, sealing strips made of such rubbers at low temperatures lose their ability to contact surfaces reliably with uniform pressure to effect airtight and watertight sealing.

It is an object of the present invention to provide a sealing strip of relatively simple construction and relatively low price which provides an airtight and watertight seal at all temperatures of practical service.

According to the present invention there is provided an airtight, watertight sealing strip of a resilient material comprising a base portion having a mounting surface for bonding to one member to be sealed, a root part formed integrally with and projecting outwardly from the opposite surface of said base portion in longitudinal alignment therealong, and a resilient contact part formed integrally with and extending continuously from said root part, said root part having a portion at least as thick as the thickest portion of the resilient contact

[Price 25p]

part, and said resilient contact part being outwardly tapered in transverse cross-section, and a pile of fibres implanted uniformly on exposed surfaces of the sealing strip other than said mounting surface.

A sealing strip in accordance with the present invention will now be described, by way of example only, with reference to the accompanying drawing, in which:—

Figure 1 is a fragmentary perspective view showing one example of a sealing strip in accordance with the invention; and

Figures 2 to 6, inclusive, are end views respectively showing other examples of sealing strips embodying the invention.

Referring to the drawing, each of the example sealing strips shown therein has a rubber structure comprising a ribbon-like flat base 1 having a mounting surface 4 for bonding onto one part of a structure to be sealed, a root part 2 formed integrally with and projecting outwardly from the opposite surface of the base and longitudinally aligned therealong, and a resilient contact part 3 formed integrally with and extending continuously outwardly from the root part, this part 3 being curved and outwardly tapered in cross-section. The root part 2 is of substantial cross-sectional thickness, having a portion at least as thick as the thickest portion of the resilient contact part, so as to increase the resilient reaction force of the combination of the root part 2 and the resilient contact part 3 with respect to a force tending to deflect these parts.

The exposed surfaces of this rubber sealing strip, except for the mounting surface 4, are covered entirely and uniformly with a pile of short fibres 5 implanted in these surfaces by a process such as electrodeposition. For installation of this sealing strip, the mounting surface 4 is bonded by means of an adhesive to one of two opposed structural members the space between which is to be sealed.

It has been found that, as a result of the

above-described construction of the sealing strip according to the invention, particularly the provision of the root part 2 of relatively high stiffness with respect to deflection, the contact of the resilient contact part 3 against the surface of the opposing structure is caused to be intimate and positive over the entire length thereof, and, moreover, this resilient contact part is fully restored to its original shape upon separation thereof from the surface of the opposing structure.

It has been found further that the sealing strip of the invention affords positive and consistent airtightness and watertightness even at low temperatures and that the fibres 5 also contribute remarkably to the airtight and watertight effect. Furthermore, the pile of fibres 5 conveniently affords a medium which can be suitably coloured to render the sealing strip inconspicuous or pleasant in appearance in relation to the structural members between which the sealing strip is to be used.

While the invention has been described in the foregoing disclosure with respect to examples of sealing strips according to the invention which are longitudinally straight when viewed from the side of the base opposite to the mounting surface, it will be obvious that the present invention can be applied with equal effectiveness to sealing strips of other longitudinal shapes, for example, arcuate and circular.

WHAT I CLAIM IS:—

1. A sealing strip of a resilient material comprising a base portion having a mounting surface for bonding to one member to be sealed, a root part formed integrally with and projecting outwardly from the opposite surface of said base portion in longitudinal alignment therealong, and a resilient contact part formed integrally with and extending continuously from said root part, said root part having a portion at least as thick as the thickest portion of the resilient contact part, and said resilient contact part being outwardly tapered in transverse cross-section, and a pile of fibres implanted uniformly on exposed surfaces of the sealing strip other than said mounting surface.

2. A sealing strip as claimed in claim 1 which is longitudinally straight when viewed from the side of the base portion opposite to the mounting surface.

3. A sealing strip as claimed in claim 1 which is longitudinally curved when viewed from the side of the base portion opposite to the mounting surface.

4. A sealing strip substantially as hereinbefore described with reference to the accompanying drawing.

BROOKES & MARTIN,
Chartered Patent Agents,
High Holborn House,
52/54 High Holborn,
London, W.C.1.
Agents for the Applicant.

11
above-described construction of the sealing strip according to the invention, particularly the provision of the root part 2 of relatively high stiffness with respect to deflection, the contact of the resilient contact part 3 against the surface of the opposing structure is caused to be intimate and positive over the entire length thereof, and, moreover, this resilient contact part is fully restored to its original shape upon separation thereof from the surface of the opposing structure.

It has been found further that the sealing strip of the invention affords positive and consistent airtightness and watertightness even at low temperatures and that the fibres 5 also contribute remarkably to the airtight and watertight effect. Furthermore, the pile of fibres 5 conveniently affords a medium which can be suitably coloured to render the sealing strip inconspicuous or pleasant in appearance in relation to the structural members between which the sealing strip is to be used.

While the invention has been described in the foregoing disclosure with respect to examples of sealing strips according to the invention which are longitudinally straight when viewed from the side of the base opposite to the mounting surface, it will be obvious that the present invention can be applied with equal effectiveness to sealing strips of other longitudinal shapes, for example, arcuate and circular.

WHAT I CLAIM IS:—

1. A sealing strip of a resilient material comprising a base portion having a mounting surface for bonding to one member to be sealed, a root part formed integrally with and projecting outwardly from the opposite surface of said base portion in longitudinal alignment therealong, and a resilient contact part formed integrally with and extending continuously from said root part, said root part having a portion at least as thick as the thickest portion of the resilient contact part, and said resilient contact part being outwardly tapered in transverse cross-section, and a pile of fibres implanted uniformly on exposed surfaces of the sealing strip other than said mounting surface.

2. A sealing strip as claimed in claim 1 which is longitudinally straight when viewed from the side of the base portion opposite to the mounting surface.

3. A sealing strip as claimed in claim 1 which is longitudinally curved when viewed from the side of the base portion opposite to the mounting surface.

4. A sealing strip substantially as hereinbefore described with reference to the accompanying drawing.

BROOKES & MARTIN,
Chartered Patent Agents,
High Holborn House,
52/54 High Holborn,
London, W.C.1.
Agents for the Applicant.

Printed for Her Majesty's Stationery Office by the Courier Press, Leamington Spa, 1971.
Published by the Patent Office, 25 Southampton Buildings, London, WC2A 1AY, from which copies may be obtained.

