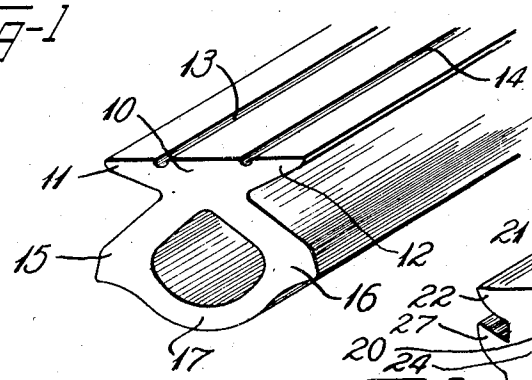
Feb. 4, 1941. C. W. LEGUILLON 2,230,303

SEALING STRIP

Filed Dec. 15, 1938

Fig-1



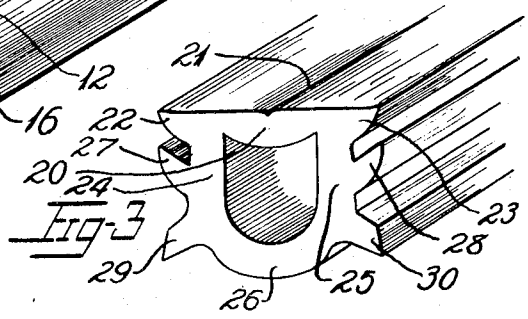


Fig-3

Fig-2

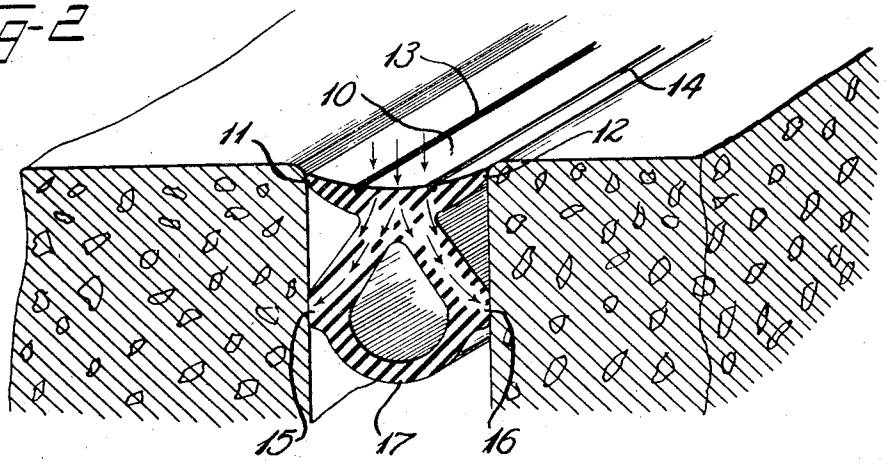
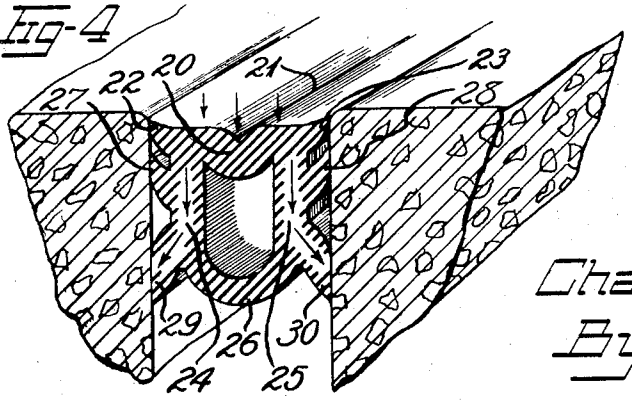


Fig-4



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UNITED STATES PATENT OFFICE

2,230,303

SEALING STRIP

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Application December 15, 1938, Serial No. 245,939

8 Claims. (Cl. 94—18)

This invention relates to sealing strips for joints in pavement and other structures including joints in highway pavements, flooring, building constructions and the like.

The invention is directed to the provision of an improved resilient sealing strip of rubber composition or other rubber-like material that is adapted to be inserted in a laterally compressed condition into the joint space and to be maintained in sealing relation against the walls of the space by the resilient pressure of the strip. In the joints of highway pavement, for example, where adjacent sections of the pavement are of preformed concrete providing a joint space between the sections, the strip is adapted to be inserted into the space from above and to be maintained at or slightly below the pavement face to seal the joint in such relation with the walls of the space as to resist effectively further downward movement of the strip, and also upward movement out of the space.

It is an object of the invention to provide these results without requiring any shoulders or other special construction of the joint walls. Further objects are to provide for maintaining an effective seal under a wide range of expansion and contraction of the structure as a result of temperature changes, and to provide for simplicity of construction and convenience of assembly.

These and further objects will be apparent from the following description, reference being had to the accompanying drawing in which:

Fig. 1 is a perspective view of a sealing strip constructed according to and embodying the invention.

Fig. 2 is a perspective view, with parts broken away and sectioned, of a pavement joint having the strip of Fig. 1 mounted therein.

Fig. 3 is a view like Fig. 1, but showing a modified construction.

Fig. 4 is a view like Fig. 2 but showing the strip of Fig. 3 installed.

The sealing strip of Figs. 1 and 2 is of suitable resilient rubber composition or other rubber-like material. It comprises a transversely extending upper portion 10, tapering at its margin to provide ribs or strut portions 11 and 12, and preferably being grooved at its upper surface at 13, 14 so that when the strip is inserted in a joint space narrower than the strip the upper surface of the strip will naturally maintain a downwardly bowed shape so that no part of the strip will bulge above the pavement face. Extending downward from the central region of the portion 10 are a pair of outwardly diverging legs, ribs or strut portions 15, 16 which preferably are connected at their lower portions by a downwardly bowed span 17 providing a tubular strip.

The diverging legs 15, 16 have a hinging action at the center region of the portion 10, to which they are both joined in a relatively narrow neck, as shown, and a downward force upon the portion 10 results in a tendency of the legs 15 and 16 to spread further apart by a toggle-like action as to the two legs or a pawl-like action as to each one, thus increasing their pressure against the walls of the joint space, in the manner illustrated in Fig. 2, and strongly resisting downward movement of the strip. With an accumulation of soil, ice, snow or other material upon the strip, especially under the weight and impact of vehicles over the joint, the increase of the lateral pressure of legs 15, 16 against the walls in a strut-like fashion resists downward movement of the strip in the joint space more and more strongly. A strip of this construction is maintained very securely in the joint space even though no shoulder or other special provision is made for seating the strip.

The span portion 17 may in some cases be omitted, leaving the lower portion of the strip open, but the tubular form of strip as shown is preferred for most installations because of the added stability of the strip in maintaining its shape, especially for handling preliminarily to installation, and because greater resilience to maintain pressure against the walls is afforded by the span portion 17.

Insertion of the strip into the joint space may be effected by squeezing the strip laterally as with suitable tongs until the transverse dimension of the strip at the zone of the legs 15, 16 is less than the width of the joint space, and then inserting the strip into the space and then releasing it by restraining the strip from upward movement while the tongs are withdrawn. This procedure may be carried out progressively from one end of the joint to the other.

In the modified construction of Figs. 3 and 4 also, the strip is of suitable resilient rubber-like material and provision is made for effectively resisting movement both into and out of the space, even though the walls of the space are not specially formed to resist such movement of the strip. The strip comprises an upper bridging portion 20 which is preferably grooved at 21 to facilitate downward bowing of this portion so that it will not bulge above the pavement surface. The portion 20 has strut margins or ribs

22, 23 adapted to engage the walls of the joint space. Substantially vertical side portions 24, 25 depend integrally from the upper portion 20 and are united at the bottom by a bowed span 26. Ribs or strut portions 27, 28 project outwardly from the sides 24, 25 and these and also the ribs 22, 23 are inclined in the upward direction so that upon insertion in the space they engage the walls to resist movement predominantly in the upward direction to resist removal of the strip from the joint space. A third set of ribs or strut portions 29, 30 diverge downwardly from the side portions 24, 25 and are adapted by their engagement with the walls of the joint space to resist movement predominantly downward in the joint space. As indicated by the arrows in Fig. 4, a load applied at the upper side of the strip is transmitted as an oblique side pressure against the walls of the pavement structure by an action which is a toggle-like action of the strip and a pawl-like action of the ribs or strut portions 29, 30. Thus, like the embodiment of Figs. 1 and 2, the strip of Figs. 3 and 4 when positioned in the joint space effectively resists movement further into the space and also a retracting movement outwardly of the space.

Variations may be made without departing from the scope of the invention as it is defined in the following claims.

I claim:

1. A strip for sealing the space between spaced-apart walls of a pavement structure or the like, said strip being of resilient rubber-like material and having a plurality of inclined strut portions extending outwardly thereof and adapted to engage the walls in sealing relation, at least one strut portion being inclined in a direction opposite to that of another strut portion at the same side of the strip so that said portions are adapted to act as resilient pawls to resist movement of the strip in both of opposite directions along said walls.

2. A strip for insertion into the space between spaced-apart walls of a pavement structure or the like, said strip being of resilient rubber-like material and comprising portions diverging in the direction into said space and adapted to engage said walls to resist movement of the strip as a result of pressure tending to advance the strip into the space, and other portions integral with said diverging portions adapted to be mounted converging into said space with the margins thereof engaging said walls to resist movement of the strip in the direction opposite to that of insertion.

3. A strip as defined in claim 2 in which the said converging and diverging portions unite in a hinging zone centrally between the sides of the strip.

4. A strip for sealing the space between spaced-apart walls of a pavement structure or the like, said strip being of resilient rubber-like material comprising a transverse portion having projecting margins adapted to engage said walls and a pair of diverging strut portions joined integrally with said transverse portion centrally between the sides of the strip with voids between said strut portions and between said projecting margins and said strut portions and having surfaces adapted to engage said walls.

5. A strip for sealing the space between spaced-apart walls of a pavement structure or the like, said strip being of resilient rubber-like material comprising a transverse portion having projecting margins adapted to engage said walls, a pair of diverging strut portions joined integrally with said transverse portion centrally between the sides of the strip with voids between said strut portions and between said projecting margins and said strut portions and having surfaces adapted to engage said walls, and a spanning portion extending between the said strut portions in spaced relation to said transverse portion and providing with said portions a tubular structure.

6. A strip for sealing the space between spaced-apart walls of a pavement structure or the like at a face of the structure, said strip being of resilient rubber-like material comprising a portion having projecting margins adapted to be mounted with its margins engaging the walls of the space and with said portion in a bowed shape curving into the space away from the said face of the structure, and a pair of diverging strut portions joined integrally with said portion centrally between the sides of the strip with voids between said strut portions and between said projecting margins and said strut portions and adapted to engage said walls.

7. A strip for sealing the space between spaced-apart walls of a pavement structure or the like, said strip being of resilient rubber-like material and comprising a tubular body having surfaces at its sides adapted to engage the walls of said space, and a bridging portion united with the tubular body at a position centrally between the sides of the strip in a relatively narrow neck and said portion having margins projecting in spaced relation to said body to engage said walls.

8. A strip for sealing the space betwen spaced-apart walls of a pavement structure or the like, said strip being of resilient rubber-like material and comprising a tubular body having surfaces at its sides adapted to engage the walls of said space, and a bridging portion united with the tubular body in a relatively narrow neck, the walls of said tubular body which extend from said neck providing strut portions adapted to be flexed at said neck substantially without bulging of said bridging portion as a result of such flexure.

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