July 8, 1930. A. C. FISCHER 1,770,167

EXPANSION JOINT

Original Filed May 25, 1921

Fig. 1.

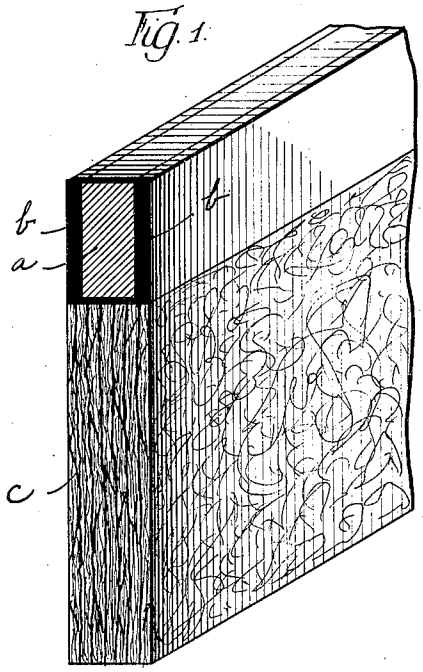
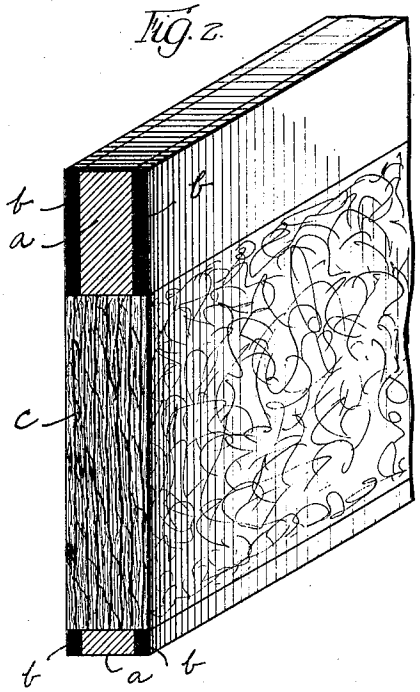



Fig. 2.




Inventor:
Albert C. Fischer,
By Albert H. Robinson Atty

Patented July 8, 1930 1,770,167

# UNITED STATES PATENT OFFICE

ALBERT C. FISCHER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE PHILIP CAREY MANUFACTURING COMPANY, A CORPORATION OF OHIO

## EXPANSION JOINT

Original application filed May 25, 1921, Serial No. 472,319. Divided and this application filed April 14, 1926. Serial No. 101,939.

This is a division of my application Serial No. 472,319 which was filed May 25, 1921 and matured into Patent No. 1,662,567 on March 13, 1928.

This invention relates to improvement in expansion joint used for paving and construction purposes and any situation where expansion and contraction must be provided for.

Heretofore it has been customary to either pour the joint or build up solid bituminous joints or solid composition joints, which, upon being put under pressure would be compressed and become elongated surfaces, or bulge under compression.

This invention relates particularly to a flexible, boardlike structure in contra-distinction to a rigid, boardlike structure, and is composed of vegetable fibres of various kinds, such as, flax, hemp, straw or any other ingredients which may be suitably matted together in felted form, to form such fibrous material into continuous sheets. This vegetable material may be waterproofed or not, as is preferred, by injecting therein any bituminous or petroleum waterproofing saturants adapted thereto, thus making the material waterproof but not destroying the felted, matted form, which gives to the expansion joint the inherent power of compression within itself and the power to re-expand of its own accord.

The use of such fibrous material prevents breakage of the joint, thus enabling it to be handled in a rough manner and still not be destroyed, whereas all solid bituminous joints, whether provided with felt sides or otherwise, become very brittle in cold weather and a minimum shock breaks or cracks the entire joint.

Another object of my invention is to form this fibrous material as in matted form in a wet condition, then run through form presses or suitable machinery to mat the material together. The material should then preferably be dried, either in warming ovens or otherwise, and if desired, suitably waterproofed.

Another object of my invention is to prepare a joint which is lighter in structure than solid bituminous joints, thus affecting economy in transportation and affecting economy in the necessary amount of solid material needed for the expansion joint. Heretofore, the solid bituminous joints, when under compression in warm weather, have always oozed out of the crevice and have been flattened on the pavement by the passing traffic, so that the bituminous matter could not get back into the crevice, thus making a defective joint. By using a fibrous body of the type described this cannot happen, as the material is both compressible within itself and reexpansive when the pressure is released, without oozing out of the crevice. The material of the present invention may be waterproofed, as stated before, and suitably coated in various ways to preserve its body and protect it against the wear of the traffic.

With these and incidental objects in view, the invention consists of certain novel features of construction and combination of designs, and methods of coating or double saturating, the essential elements of which are hereinafter described.

With reference to the drawing which accompanies and forms a part of this specification, Figure 1 represents a cross section of a fibrous joint, that portion indicated by the letter —*a*— being thoroughly waterproofed and saturated so that it has a tough material which has its sides shown as at —*b*— faced with a saturated felt or other suitable material, and a base —*c*—, which may or may not be waterproofed, of fibrous material, more or less in a matted state. The body —*a*— may consist of solid bituminous matter formed as a crown on the joint, or the crown may be suitably immersed in material having penetrating powers sufficient to form a heavy, solid crown.

Figure 2 indicates a fibrous, matted joint, having a solid bituminous crown, as indicated at —*a*—, faced with a saturated felt, paper or other suitable material, as shown at —*b*—. A center fibrous body which may or may not be waterproofed, as at —*c*—, and a base portion simulating the crown portion, showing a solid bituminous base —*a*— with faced side —*b*—.

This invention further consists of the novel feature of a separately mounted crown —*a*— upon a foundation —*c*—, as illustrated in Figure 1, and a crown —*a*— mounted upon a foundation —*c*—, as at Figure 2, in which a separable crown may be formed by saturating fibrous material with a material having penetrating power sufficient to form a heavy solid crown, unlike the crown described in Figure 2, in which it is stated that the body of the crown may consist of solid bituminous matter formed as a crown on the joint. In other words, this crown may be fibrous material immersed in a bituminous material, may be solid bituminous material having felt upon the sides, or may be fibrous material immersed in any suitable material having penetrating powers sufficient to form a heavy solid crown. In the art such material would readily be adapted by those skilled in utilizing materials for this purpose. For instance, paraffine would accomplish this result, wax, sealing wax, resinous compounds, or any suitable penetrating medium which could be liquefied and penetrated into the fibrous material.

My invention consists of the novel arrangement of a separable crown placed upon a base for the purpose of economy, in avoiding the use of completely solid materials. The base structure —*c*— may be waterproofed with light or heavy saturants, as described, and has flexible reinforcing material therein to give strength to the structure.

I claim:

1. Expansion joint comprising a flexible, board-like strip embodying in its structure interrupted and substantially parallel mats of fibrous material permeated with bituminous material and irregularly overlapping one another and one edge crowned with a solid mastic, the sides of the crowning edge of said strip being surfaced with pliable waterproofing material.

2. An expansion joint comprising a flexible, board-like strip embodying in its structure interrupted and substantially parallel mats of fibrous material irregularly overlapping one another, one longitudinal edge of said strip being provided with a substantially solid mastic crown.

3. An expansion joint comprising a flexible boardlike strip embodying in its structure interrupted and substantially parallel mats of fibrous material irregularly overlapping one another, one longitudinal edge of said strip being treated with a waterproofing material to provide the joint with a substantially solid mastic crown.

4. An expansion joint comprising a flexible, boardlike strip embodying in its structure interrupted and substantially parallel mats of fibrous material irregularly overlapping one another, one longitudinal edge of said strip being provided with a substantially solid mastic crown and said crown having its sides surfaced with layers of pliable material.

5. An expansion joint comprising a flexible, boardlike strip embodying in its structure interrupted and substantially parallel mats of fibrous material irregularly overlapping one another, one longitudinal edge of said strip being provided with a substantially solid mastic crown, and said crown having its sides surfaced with strips of saturated felt.

6. An expanson joint comprising a flexible, boardlike strip embodying in its structure interrupted and substantially parallel mats of fibrous material irregularly overlapping one another, one longitudinal edge of said strip being provided with a substantially solid mastic crown and said crown having its sides surfaced with layers of pliable material of a plastic consistency.

7. An expansion joint comprising a flexible boardlike strip having a main fibrous portion and a separately formed crown strip attached together, said crown being of different composition than the main body portion and including a considerably greater proportion of bituminous material.

8. An expansion joint comprising a flexible boardlike strip of fibrous material having a separately formed crown strip adhesively secured to one edge thereon, said crown including solid bituminous material.

9. An expansion joint comprising a flexible boardlike strip of fibrous material having a separate crown mounted thereon, said crown including solid bituminous material and provided with saturated felt facings.

Signed at Chicago, Illinois, this 30th day of March 1926.

ALBERT C. FISCHER.