

July 13, 1926.

1,591,968

A. C. FISCHER

EXPANSION JOINT FOR CONCRETE ROADS

Filed April 23, 1923

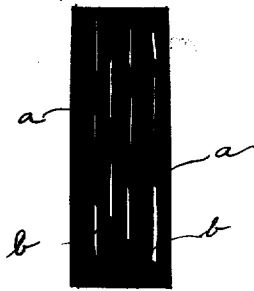


Fig 1

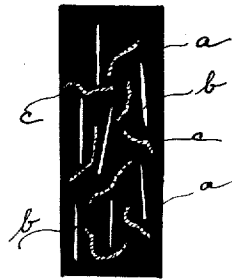


Fig 2

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UNITED STATES PATENT OFFICE.

ALBERT C. FISCHER, OF CHICAGO, ILLINOIS.

EXPANSION JOINT FOR CONCRETE ROADS.

Application filed April 23, 1923. Serial No. 834,135.

This application is a continuation in part of my application Serial No. 580,381, filed May 12, 1922. I also refer to my application Serial No. 84,605, filed January 29, 1926, in which I am claiming the process of manufacturing preformed composition sheets, strips, blocks or the like to develop parallel stratification of the filling medium by sheet forming apparatus.

Heretofore it has been customary in the manufacture of expansion joints to use layer formation, in which saturated felts were the principal factors, because of the binding values of the saturated felt. These joints were formed by first cementing layers of saturated felt together with an asphaltic adhesive, and later, due to the high cost of the felt instead of having the numerous layers of felt two thin layers of felt were used as the outside binding element, and an asphaltic mastic mixed with fibrous material was placed between the two felt walls, the felt walls acting as stiffening means and preventing the sagging of the asphalt.

In all of these formations deteriorating materials were involved. Because of the action of the street acids and the constant expansion and contraction of the slabs the felt and organic matter contained in these expansion joints were soon pressed out or pressed so thin that sand and grit filtered in, causing the felt to decay and destroying all expansive powers. The fibrous materials involved in these mastic formations were constituted of such vegetable substances as, cotton linters, shredded wool fibre, which were impregnated with the asphaltic material.

My invention relates primarily to the use of flaked mineral matter, such as, mica flakes, shale flakes or slate flakes, or treated vegetable matter, such as, treated parchments, papier mâché, and other stiffening means in flaked formation which might be secured or made into thin flakes from $\frac{1}{8}$ to $\frac{1}{2}$ inch in diameter. Mica would be preferable, because of the tenacity of the flake, and the fact that the asphaltic material cannot penetrate the mica, nor would the oil be apt to affect it, thus destroying the stiffening means, yet the stiffening means in itself would not be subject to decay. There is also a resiliency in layer mica which might be utilized to advantage. Roasted peanut shells or flat, cellular fibrous matter is acceptable.

I do not wish to be limited, however, to the use of flaked material, but if it is desirable, unimpregnated cellular fibre may be introduced for the purpose of obtaining re-expansion, for instance, excelsior could be used to advantage, and by being mixed with the bituminous material and flaked material would produce quite a resilient body. The purpose of the incorporation of the cellular fibre is to secure greater inherent re-expansibility and would also function as an additional strengthening means. The independent wall would act as a means to prevent the sagging of the asphalt, and would aid in the formation of a rigid body.

Referring to Figure 1 (a) represents bituminous material (b) small mica flakes $\frac{1}{4}$ to $\frac{1}{2}$ inch in size, the flakes lying in slate like formation with asphaltic material between the flakes. However, it must be readily understood that many of these flakes would be lying transversely, but the majority of the flakes would follow the direction of the feed of the asphalt through sheet forming rolls, and would adjust themselves lengthwise with the joint.

The formation of this joint would be much the same as pieces of shale or slate which have partly separated, or resemble mica itself, except that the sealing means between the flakes consists entirely of bituminous substances.

I do not wish to be limited in incorporation of other substances and stiffening bituminous means, should it be desirable.

Referring to the drawings, Figure 2 illustrates an expansion joint consisting of bituminous material, (a), micaceous flakes, (b), unpenetrated cellular fibre, (c), mixed with homogeneous mass to secure compressibility and rigidity.

I claim:

1. A preformed expansion joint for separating subdivision of concrete paving, comprising a strip of asphaltic material having a filler incorporated therein in the form of thin segregated flakes, each of said segregated flakes having flat parallel surface areas of relatively broad dimension, and providing separately acting strengthening parts, the flakes being distributed thru the asphaltic material in substantially parallel strata and the majority of the flakes being separated one from another by a substantial thickness of the asphaltic material.

2. An expansion joint for separating the subdivisions of concrete pavement, comprising a plastic mixture of asphalt and fibrous material, said plastic mixture having a filler incorporated therein in the form of segregated flakes, said flakes being distributed thru the plastic mixture with the majority of the flakes separated one from another by a substantial thickness of said plastic mixture.

3. An expansion joint for separating the subdivisions of concrete paving, comprising a body of asphaltic material formed to fill the space between paving members and having distributed through it a stiffening material in the form of segregated flakes together with cellular material in subdivided form and having the inherent qualities of compressibility and resiliency.

4. An expansion joint for separating the

subdivisions of concrete paving, comprising a body of asphaltic material formed to fill the space between paving members and having distributed through it a stiffening material in the form of segregated flakes together with shredded wood. 25

5. An expansion joint for separating the subdivision of concrete paving, comprising a body of asphaltic material formed to fill the space between paving members and having distributed through it a stiffening material in the form of segregated flakes together with cellular material in subdivided form and having the inherent qualities of compressibility and resiliency, the cellular material being unimpregnated by the asphaltic material. 30 35

Signed at Chicago, Illinois this 10th day of November, A. D. 1922.

ALBERT C. FISCHER.

2. An expansion joint for separating the subdivisions of concrete pavement, comprising a plastic mixture of asphalt and fibrous material, said plastic mixture having a filler incorporated therein in the form of segregated flakes, said flakes being distributed thru the plastic mixture with the majority of the flakes separated one from another by a substantial thickness of said plastic mixture. 25
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- ALBERT C. FISCHER.

CERTIFICATE OF CORRECTION.

Patent No. 1,591,968.

Granted July 13, 1926, to

ALBERT C. FISCHER.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 1, line 36, for the words "shredded wool" read "shredded wood"; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 13th day of March, A. D. 1928.

Seal.

M. J. Moore,
Acting Commissioner of Patents.

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