Feb. 12, 1929. 1,701,628

H. B. PULLAR

PREFORMED EXPANSION JOINT

Original Filed Dec. 11, 1925 2 Sheets-Sheet 1

Fig. 1.

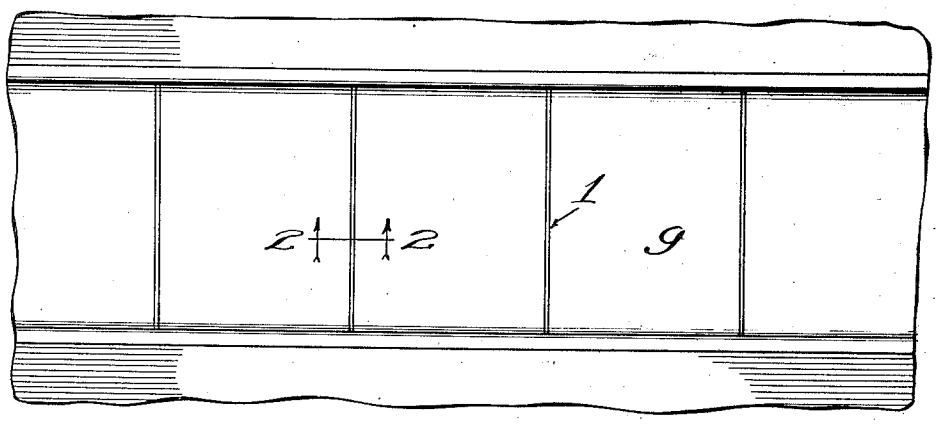


Fig. 2.

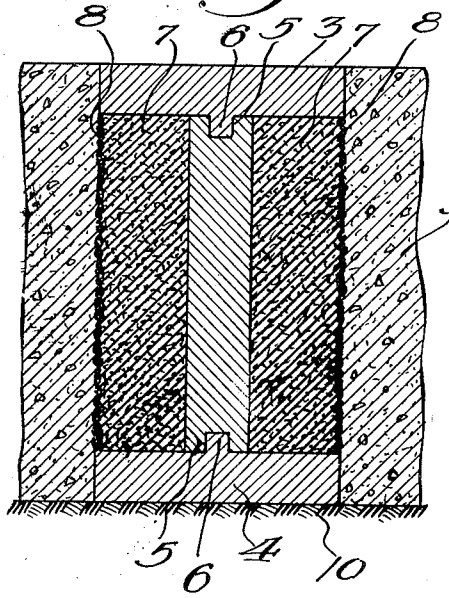
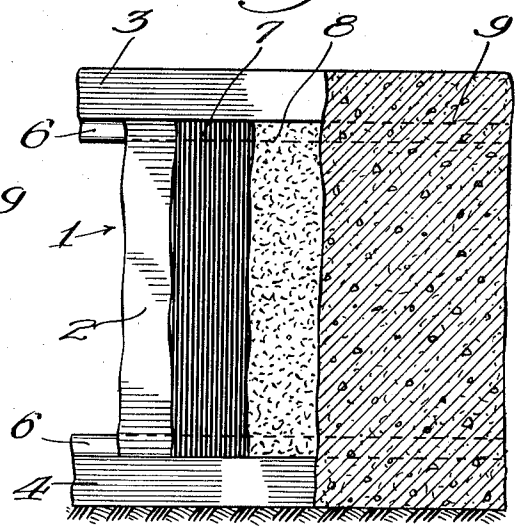


Fig. 3.



Witness:
Stephen V. Perkins

Inventor:
Harold B. Pullar,
by Frank L. Belknap
Atty.

Feb. 12, 1929. 1,701,628

H. B. PULLAR

PREFORMED EXPANSION JOINT

Original Filed Dec. 11, 1925 2 Sheets-Sheet 2

Fig. 4

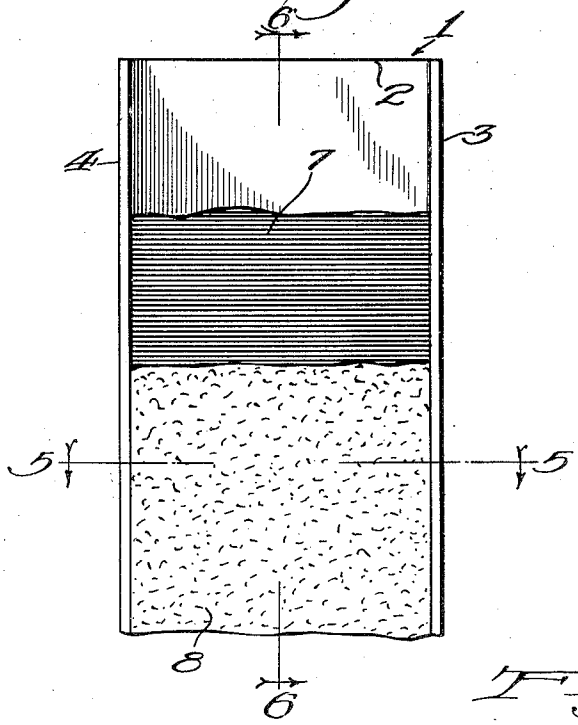


Fig. 5.

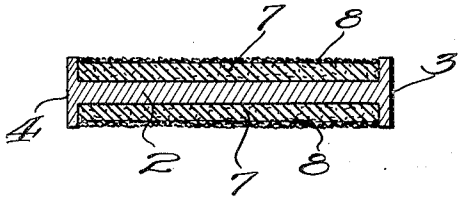
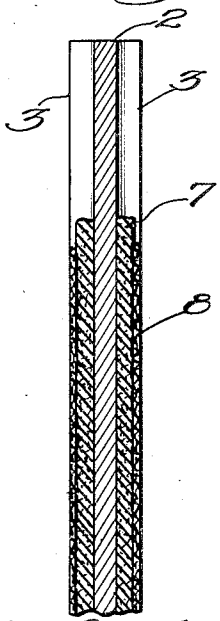


Fig. 6.



Witness:
Stephen P. Peboro

Inventor:
Harold B. Pullar
by Frank L. Belknap
Atty.

Patented Feb. 12, 1929. 1,701,628

UNITED STATES PATENT OFFICE.

HAROLD B. PULLAR, OF DETROIT, MICHIGAN.

PREFORMED EXPANSION JOINT.

Application filed December 11, 1925, Serial No. 74,690. Renewed May 24, 1928.

This invention relates to improvements in a pre-formed expansion joint, and refers more particularly to an expansion joint which will be adaptable to numerous and varied uses, for instance, in the construction of concrete, brick, wood-block and other forms of monolithic pavement or road construction where expansion joints are employed, as well as in the construction of buildings, foundations, bridges, reservoirs and other types of monolithic concrete construction, and includes innumerable other arts where the use of a high grade preformed expansion joint of the character herein described is desirable.

Expansion joint fillers should possess certain inherent properties and characteristics, for instance, flexibility to allow for proper expansion and contraction, and rigidity to permit economical stacking, shipping, handling and installation.

The expansion joint of the present invention possesses these desirable properties and characteristics to a marked degree.

Briefly, the expansion joint of the present invention comprises a reinforcing base of substantially rigid material, for instance, metal, wood or the like, filled with a bituminous compound. This bituminous compound may be allowed to come into direct contact with the surface of the concrete, brick, rock or other material so as to insure a firm, waterproof coat, or the bituminous filler may be so constructed as to permit a firm bond between the expansion joint and the material adjacent to it.

In the drawings,

Fig. 1 is a top plan view illustrating a roadway utilizing the pre-formed expansion joint of the present invention;

Fig. 2 is a greatly enlarged cross sectional view taken on line 2—2 of Fig. 1;

Fig. 3 is an enlarged fragmentary front view of the filler in place, illustrating the various depths of material;

Fig. 4 is a side elevational view of a slightly different form of the pre-formed expansion joint for use as building material;

Figs. 5 and 6 are, respectively, cross sectional views taken on line 5—5 and line 6—6 of Fig. 4.

Referring more in detail to the drawings, the reinforcing bar 1, referred to as a whole, comprises the body portion 2 and the end sections 3 and 4. The body portion 2 may comprise a substantially flat piece of metal, wood or other substantially rigid material, and the end sections 3 and 4 may be of the same material or of different material, it being preferable that the end sections 3 and 4 be disposed at substantially right angles to the body portion 2.

As a feature of the invention, the ends of the body portion may be slotted, as shown at 5, to register with the ribs 6 projecting inwardly from the inner surfaces of the end sections 3 and 4. The purpose of this form of locking connection is to insure a secure locking and at the same time provide that these end sections may be removable. The advantage of providing a collapsible reinforcing base, from the viewpoint of stacking and storage, will be instantly apparent. In addition, as will be hereinafter more particularly brought out, the upper end section 3, after the expansion joint is in place, may be removed and dispensed with. It is, of curse, understood that the slots 5 and ribs 6 may be reversed, that is, they may be positioned in either the body portion 2 or end sections 3 and 4.

The thickness of the body portion 2 preferably should not be more than one-half the thickness of the completed pre-formed joint.

As will be seen by a study of Figs. 2 and 5, the reinforcing base 1 is of substantially I-bar construction.

It is obvious, of course, that the end sections 3 and 4 may be an integral part of the body portion 2, if desired.

After the skeleton construction 1 is formed, there is poured, forced or formed in the areas adjacent the surfaces of the body portion 2 a bituminous compound 7, such as pure asphalt or an asphaltic material having a melting point of not less than 150° F. more or less and not exceeding 300° F. more or less, it having been predetermined that bituminous material within this range is sufficiently flexible to permit desirable expansion and contraction. The bituminous compound, of course, is preferably formed or poured into said areas while in heated condition, and while still warm may have imbedded on its surface a thin layer of granular material 8, for instance, stone, slate, granite chips, sand, fine gravel, or other granular substances, preferably of a size not greater than would pass a ¼″ sieve. If the granular surfacing 8 is not desirable, a coating of talc, clay, mica, or similar substance may be applied to the outside surfacing to

prevent sticking of the bituminous surfaces when coming in contact with other surfaces.

9 designates a fragment of the adjacent concrete or monolithic pavement, and 10 designates the ground on which the pavement is laid.

Therefore, according to the present invention, I provide a pre-formed expansion joint which has the desirable properties and characteristics hereinbefore listed. The thickness of the whole joint may vary from ¼ inch to 2 inches; the thickness of the reinforcing bar 1 may vary from a thin veneer to ¾ inch lumber or up to 20 gauge metal.

Among other advantages of having the end sections 3 and 4 removable may be set forth ease in manufacture and installation.

I claim as my invention:

1. A pre-formed expansion joint comprising a reinforcing body portion of substantially rigid non-bituminous material surfaced with a bituminous compound, said body portion being provided on opposite ends with enlarged head portions of substantially rigid non-bituminous material.

2. A pre-formed expansion joint comprising a reinforcing base of substantially rigid material filled with a bituminous compound, said base comprising a body portion and angularly disposed end sections, which latter may be movable relative to the body portion.

3. A pre-formed expansion joint comprising a reinforcing base of substantially rigid material filled with a bituminous compound, said base comprising a body portion and angularly disposed end sections simulating an I-bar.

4. A pre-formed expansion joint comprising a reinforcing core of substantially rigid non-bituminous material filled with a bituminous compound, said core comprising a body portion and enlarged head portions on opposite ends of the body portion.

5. A pre-formed expansion joint comprising a reinforcing base of substantially rigid non-bituminous material filled with a bituminous compound, said base comprising a body portion and enlarged end portions simulating in shape an I bar.

6. A pre-formed expansion joint comprising a base of substantially rigid material surfaced with a bituminous compound, and provided on each end with angularly disposed material-retaining end sections.

7. A pre-formed expansion joint comprising a base of substantially rigid material surfaced with a bituminous compound, and provided with angularly disposed material-retaining end sections, substantially simulating in shape an I-bar.

8. A preformed article of manufacture comprising a supporting base of substantial I-bar construction, and having a filling intermediate its ends of bituminous material, to which is applied a granular surfacing.

9. A preformed article of manufacture comprising a body portion recessed on both surfaces and having retaining side edges, and a filling of bituminous material in said recesses.

10. A preformed article of manufacture including in combination, a support comprising a portion having a recessed surface intermediate its side edges in a continuous longitudinal direction so that said sides extend above the plane of said intermediate portion, and a filling in said recessed surface comprising bitumen.

11. A preformed article of manufacture including in combination, a support comprising a portion having a recessed surface intermediate its side edges in a continuous longitudinal direction so that said sides extend above the plane of said intermediate portion, and a filling in said recessed surface comprising bitumen, the surface of which filling material lies substantially flush with the surfaces of said sides.

HAROLD B. PULLAR.