July 3, 1923. 1,460,841

B. BRIODY

CONTRACTION JOINT FOR ROADWAYS

Filed Aug. 7, 1922

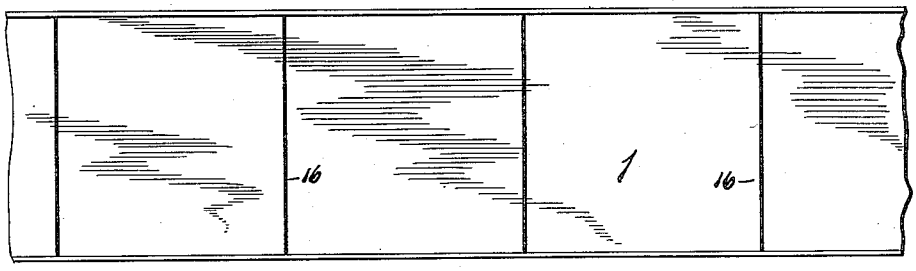


Fig. 1.

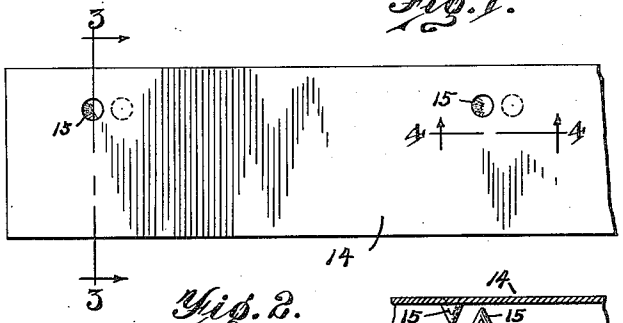


Fig. 2.

Fig. 4.

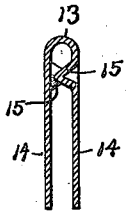


Fig. 3.

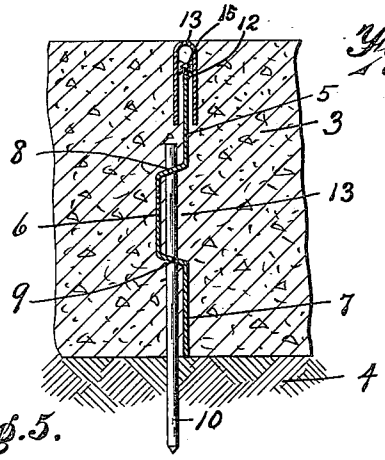


Fig. 5.

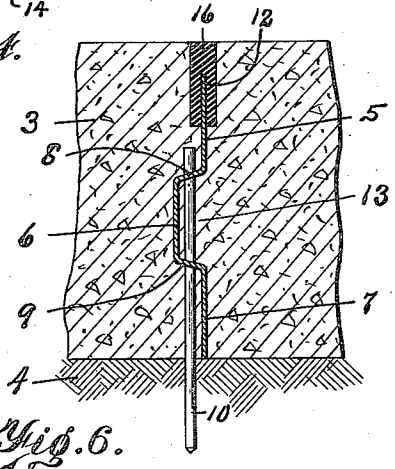


Fig. 6.

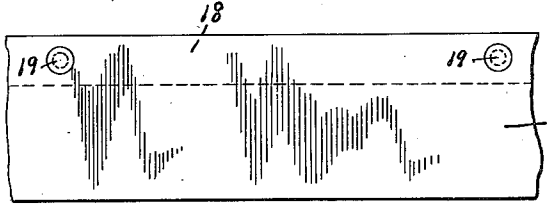


Fig. 7.

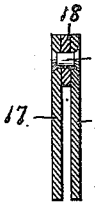


Fig. 8

Inventor

Bernard Briody.

By Edward N. Pagelsen.

Attorney

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UNITED STATES PATENT OFFICE.

BERNARD BRIODY, OF CHICAGO, ILLINOIS, ASSIGNOR TO TRUSCON STEEL COMPANY, OF YOUNGSTOWN, OHIO, A CORPORATION OF MICHIGAN.

CONTRACTION JOINT FOR ROADWAYS.

Application filed August 7, 1922. Serial No. 580,299.

To all whom it may concern:

Be it known that I, BERNARD BRIODY, a citizen of the United States, and residing at Chicago, in the county of Cook and State of Illinois, have invented a new and Improved Contraction Joint for Roadways, of which the following is a specification.

This invention relates to concrete roadways and especially to means for preventing the pavement from breaking along irregular lines, and its object is to provide means which will divide the concrete roadway slabs in such a manner that they will separate along straight and predetermined lines, and to provide means to prevent water filling the cracks should the slab break along the predetermined lines.

This invention consists of a strip of metal or other stiff material permanently embedded vertically in and extending longitudinally or transversely of a concrete roadway, as may be desired, and being of less depth than the concrete slab and having its upper edge a distance below the upper surface of the slab, together with a removable strip positioned vertically above the permanent strip and extending down from the upper surface of the slab to the upper edge of the permanent strip.

It further consists in forming the removable member by folding a strip of sheet metal longitudinally to constitute a channel and forming one or both sides of the channel with inwardly extending lugs which space the sides and which engage the upper edge of the permanent strip and support the removable strip.

It also consists in longitudinally corrugating the permanent strip in order to provide a tongue-and-groove joint between adjacent edges of the two sections of the roadway slab and in providing rods for holding this dividing member in upright position while the concrete is being placed around it.

It also embraces the process of constructing a roadway slab which consists in moulding concrete around a dividing member as above described until the upper surface of the concrete is flush with the upper edge of the upper removable member, and after the concrete has its initial set, removing the upper member and replacing it with a plastic material such as asphalt, tar or the like to prevent the entrance of water should the adjacent slabs separate.

It also consists in the details of construction illustrated in the accompanying drawing and particularly pointed out in the claims.

In the drawing, Fig. 1 is a plan of a roadway provided with transverse contraction joints. Fig. 2 is a side elevation of a removable portion of the contraction joint embodying the present invention. Figs. 3 and 4 are sections on the lines 3—3 and 4—4 of Fig. 2. Figs. 5 and 6 are vertical sections of a roadway at right angles to one of these improved contraction joints, Fig. 5 showing the permanent and removable parts of the dividing member in position, and Fig. 6 showing the removable member replaced by asphalt. Fig. 7 is a side elevation and Fig. 8 a cross section of a modified form of removable member.

Similar reference characters refer to like parts throughout the several views.

As also shown in my prior application Serial Number 538,546, filed February 23, 1922, the roadway 1 is formed by spreading a layer of concrete 3 over the sub-base 4 in the usual manner. Embedded in the concrete longitudinally or transversely of the roadway is a strip formed from sheet metal, paper or other stiff material with vertical portions 5, 6 and 7 and inclined portions 8 and 9. These corrugated strips may be made of several pieces, if desired, the ends of the sections overlapping. Holes may be made in the inclined portions 8 and 9 to receive the pins or stakes 10 which position and support these strips until the concrete has set.

If there is any movement of the roadway by reason of frosts or otherwise, a crack will be formed along above this strip, but the tongues 13 along the edge of one slab of concrete extend into the channel formed in the adjacent edge of the other slab by means of the parts 8, 6 and 9 of the strip, and this tongue-and-groove joint will cause the upper surface of the roadway to remain flat and to return to its original position after the cause of the movement has passed. The shape of the channel is immaterial so long as the interlock is provided.

When a crack is formed in the roadway as just described, water is liable to enter and freeze during cold weather, resulting in the destruction of adjacent parts of the roadway. To prevent this, a groove is formed

in the roadway by means of a removable strip, preferably of greater width than the upper edge 12 of the permanent strip just described. This removable device is preferably in the form of a channel 13 having sides 14 from which the lugs 15 may be struck up to space the sides of the channel and to rest on the upper edge 12 of the permanent strip. Just after the concrete has a permanent set, this strip is removed and a plastic material 16 such as asphalt, tar or the like is run into the groove left by the removal of the channel. This plastic material will fill this groove at all times and prevent the entrance of water.

Instead of a channel, this removal member may be formed of two strips 17 spaced by a narrower strip 18 and held together by the rivets 19. The narrow strip 18 and the permanent strip determine the thickness of the concrete slab.

The details of these metal members and their proportions may all be varied by those skilled in the art without departing from the spirit of my invention as set forth in the following claims.

I claim:—

1. A dividing member for separating adjacent slabs of concrete roadways and the like consisting of a permanent strip extending upward from the lower face of the concrete roadway and a removable part extending from the upper surface of the roadway downward to the permanent part.

2. A dividing member for separating adjacent slabs of concrete roadways and the like consisting of a permanent strip extending upward from the lower face of the concrete roadway and a removable part extending from the upper surface of the roadway downward to the permanent part, said removable part consisting of a strip of sheet metal folded to form a narrow channel.

3. A dividing member for separating adjacent slabs of concrete roadways and the like consisting of a permanent strip extending upward from the lower face of the concrete roadway and a removable part extending from the upper surface of the roadway downward to the permanent part, said removable part consisting of a strip of sheet metal folded to form a narrow channel, the sides of the channel having projections on their inner faces adapted to space the sides and to rest on the upper edge of the permanent member.

4. A dividing member for separating adjacent slabs of concrete roadways and the like consisting of a permanent strip extending upward from the lower face of the concrete roadway and a removable part extending from the upper surface of the roadway downward to the permanent part, said removable part consisting of a strip of sheet metal folded to form a narrow channel and said permanent strip being longitudinally corrugated, and bars extending through the permanent strip into the foundation of the roadway.

5. A dividing member for separating adjacent slabs of concrete roadways and the like consisting of a permanent strip extending upward from the lower face of the concrete roadway and a removable part extending from the upper surface of the roadway downward to the permanent part, said removable part consisting of a strip of sheet metal folded to form a narrow channel, said permanent strip being channel shaped and formed with vertically alined holes in the walls of the channel, and supporting stakes in said holes to hold the strips in position until embedded in the concrete.

6. The process of making a contraction joint in a concrete roadway or the like which consists in embedding a permanent metal strip in the lower part of the concrete slab and embedding a removable separator in the upper part of the slab in vertical alinement with the lower strip and extending from the upper surface of the slab to the lower strip, and replacing the removable separator with an elastic material after the concrete has set.

BERNARD BRIODY.

Witnesses:
E. H. DAVIS,
H. E. WHITE.