Nov. 17, 1925.

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L. W. ROGERS

RETAINER FOR EXPANSION JOINT STRIPS

Filed Feb. 9, 1925

Fig. 1

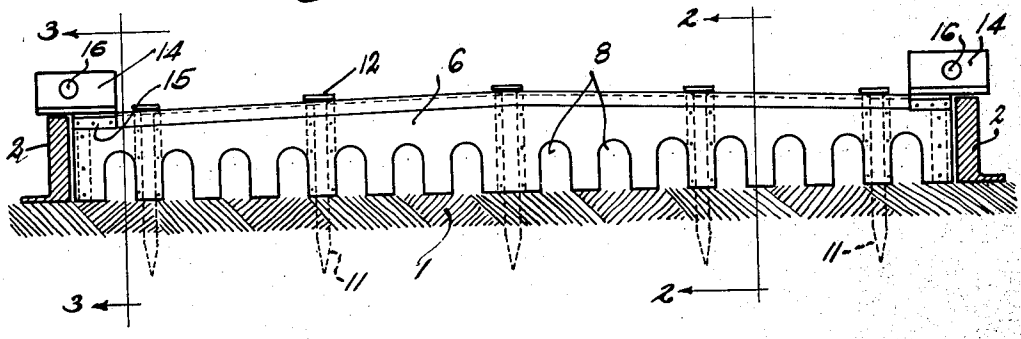


Fig. 2

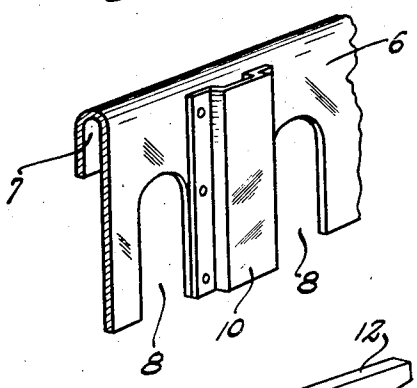


Fig. 3

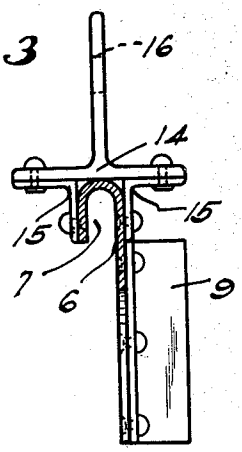


Fig. 4

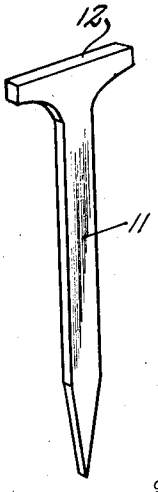
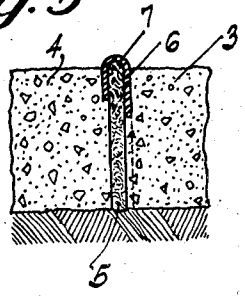


Fig. 5



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By

Attorney

Patented Nov. 17, 1925. 1,562,257

UNITED STATES PATENT OFFICE.

LEWIS W. ROGERS, OF CLANTON, ALABAMA.

RETAINER FOR EXPANSION-JOINT STRIPS.

Application filed February 9, 1925. Serial No. 8,006.

To all whom it may concern:

Be it known that I, LEWIS W. ROGERS, a citizen of the United States of America, residing at Clanton, in the county of Chilton and State of Alabama, have invented certain new and useful Improvements in Retainers for Expansion-Joint Strips, of which the following is a specification.

My invention relates to an improved retainer for retaining the expansion joint strips customarily laid between sections of concrete pavement.

In the laying of pavement, and particularly concrete pavements, the specifications require the interposition at predetermined intervals, or transverse expansion joints which are now customarily formed by the insertion of an elastic or expansion strip of any suitable material which must be set up and retained in place between sections of the pavement.

It is obviously desirable that a practical and economic means be devised whereby these joint strips may be accurately positioned and positively held down and retained in place during the laying of the pavement and that the retainer means should be such as not to interfere with the free passage thereover of the machine drawn drag plate to spread the concrete, and that the retainer should be easily withdrawn from the pavement after it has been placed on each side of the expansion joint and retainer, leaving the joint strip held positively in place by reason of its bond with the pavement on each side of it.

My invention contemplates the accomplishing of the foregoing objects by the provision of a joint strip retainer formed of a metal strip having its upper edge reversely bent so as to provide a continuous shallow top pocket adapted to receive, house and hold down the upper edge of the expansion strip to the desired depth, such plate having a series of slots opening through its bottom so as to allow the paving on both sides to bond against the expansion joint strip and hold it in place when the retainer is removed.

My invention further contemplates novel anchorage means to secure the retainer in position and at the same time to be readily removable and not to interfere with the spreading of the concrete by machinery.

My invention further contemplates mounting form plates on the ends of the retainer, such plates being adapted to rest on the side forms and to set the retainer plate in the proper operating position. These form plates are disposed to clear the roadway for the passage of the drag for leveling the concrete surface.

My invention further contemplates the novel details of construction and arrangements of parts, which in their preferred embodiment only are illustrated in the accompanying drawings, in which:—

Fig. 1 is a transverse cross-sectional view of a roadway foundation and side forms showing my retainer in front elevation.

Fig. 2 is a perspective detail of a portion of the retainer carrying one of the anchor pin sockets, the view being taken on the cross-sectional line 2—2 of Fig. 1.

Fig. 3 is a cross-sectional view taken on the line 3—3 of Fig. 1

Fig. 4 illustrates in detail one of the anchor pins.

Fig. 5 is a longitudinal cross-sectional view through the laid pavement at a joint, showing the joint strip in place and the retainer ready to be removed.

Similar reference numerals refer to similar parts throughout the drawings.

I have illustrated my invention in service for laying a cement roadway upon a foundation 1 between any conventional type of side forms 2. The cement as laid must be separated into sections such as 3 and 4 (Fig. 5) by the interposition of expansion joint strips 5 which may be of any suitable material such as is used now or which may be hereafter found most desirable for this purpose.

My invention relates particularly to the means employed for retaining this strip in place during the laying of the pavement and in the preferred embodiment, which is shown, the retainer is in the form of a plate 6, which is shown as a single plate having the width of the roadway to be laid, but which may obviously be made up in sections when desired. This plate is bent over and down along its top edge to pro ide a shallow pocket 7 which opens downwardly so as to receive the upper edge of the retaining strip with a snug fit and to hold the strip down in position. This bend in the plate acts to reinforce and stiffen the retainer and it provides a pocket closed overhead which houses the joint strip and when anchored or set in position, as hereafter described,

permits the drag for leveling the surface of the pavement to travel over it without injury to the retainer or disturbance to the joint strip. The strip retainer has a series of slots 8 opening through the bottom edge and acting to give the cement access to the joint strip on the side of the latter towards the retainer. At the ends of the retainer 6 I attach angle braces 9 and at intervals lengthwise of the retainer I mount guides 10 for flat retaining or anchor pins 11. These guides are formed by bent metal plates providing a pocket open top and bottom for the snug reception of the wide flat retaining pins 11. These pins have heads 12, by means of which they are driven into the foundation to set the retainer plate and they serve as the only anchor means to position the retainer when no side forms are used. These pins can be readily pulled up when it is desired to move the plate.

On the top of the retainer 6 and overhung from each end I mount form plates 14 of T-bar structure riveted or bolted by means of angles 15 to the ends of the retainer 6 and having an upright web provided with an aperture 16 to receive a lifting tool which is used when it is desired to lift the retainer and strip it from the finished pavement. This form plate when placed flush with top of side forms forces the joint to the desired depth, and can be mounted on the retainer to set the top edge of the strip at any desired depth in the pavement.

In operation, the retainer is moved to the desired point on the road, the form plates 14 are set on the side forms when such are used and the anchor pins 11 are driven through their guides into the foundation, the joint strip 6 having been first mounted on the retainer with its upper edge in the pocket 7. The concrete is then laid up to the retainer plate on the side opposite the pin guides and then the next section of concrete is laid on the side with the pin guides. The top of my device is so disposed and its form plates 14 so arranged it will present no interference with the passage over the joint of a dump hopper with a drag attached thereto to spread the concrete, the pin slots and pins being submerged enough in the finished pavement to avoid being struck by the drag and to insure the joint strip being held positively in proper position. After the pavement has been laid past a joint retainer and before the pavement has set, the lifting tools may be applied to the form plates, after the anchor pins have been lifted up, and the retainer device as a whole can be stripped vertically from the pavement, leaving the expansion joint strip 6 held by the pavement on each side and the retainer can then be moved forward and the operation repeated so that by the use of a few inexpensive retainers and practically without the use of hand labor the road joints can be provided as fast as machinery can lay the pavement, at the same time leaving a perfectly positioned joint.

Though I have described with great particularity the details of the embodiment of the invention herein shown, it is not to be construed that I am limited thereto, as changes in arrangement and substitution of equivalents may be made by those skilled in the art without departing from the invention as defined in the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. An expansion joint retainer formed of a metal plate having greater width vertically than the expansion joint strip to be retained and having its top edge bent over on one side to form a shallow pocket closed overhead and adapted to receive the upper edge of such joint strip, there being slots in the plate extending from below the level of the downturned edge through the bottom of the plate.

2. An expansion joint retainer plate with its top edge bent over to form on one side of the plate a shallow pocket closed overhead and adapted to receive and hold in position the upper edge of a joint strip resting on the foundation.

3. A joint retainer plate according to claim 2, which is provided throughout its length below the pocket with slots opening through its bottom edge.

4. A joint strip retainer comprising a continuous transverse plate having its top edge rolled over to form a continuous shallow narrow pocket adapted to snugly receive the top edge of a joint strip, said plate having a greater width than said strip and having slots below the pocket which open through its bottom.

5. A joint retainer plate having mounting means comprising flat anchor pins and correspondingly shaped vertical guides therefor attached on one side of the retainer plate and rising substantially to the top edge thereof.

In testimony whereof I affix my signature

LEWIS W. ROGERS.