R. D. BAKER.

APPARATUS FOR INSTALLING PAVEMENT JOINTS.

APPLICATION FILED JUNE 1, 1914.

1,127,378.

Patented Feb. 2, 1915

3 SHEETS—SHEET 1.

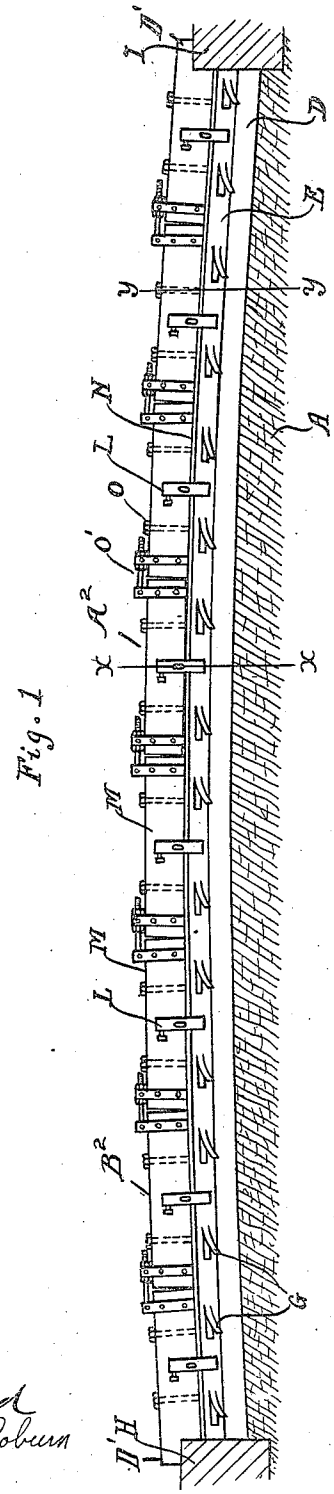


Fig. 1

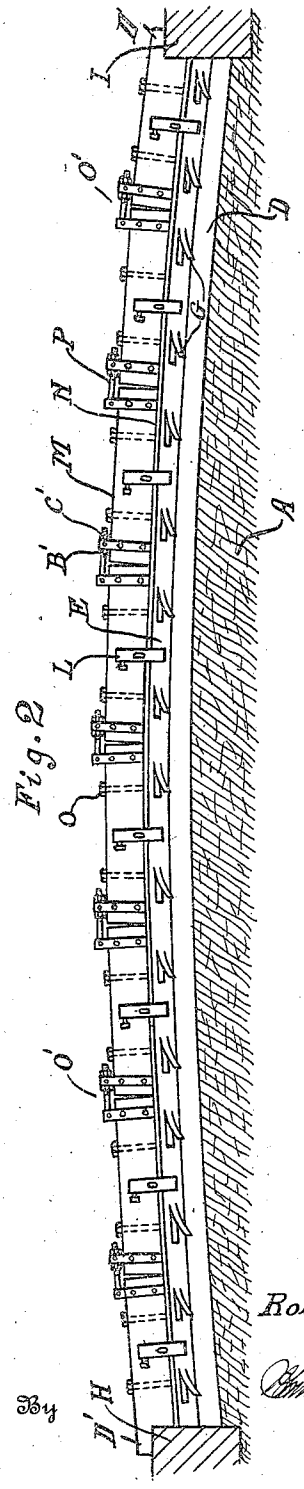


Fig. 2

Witnesses

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3 SHEETS—SHEET 2.

Fig. 3.

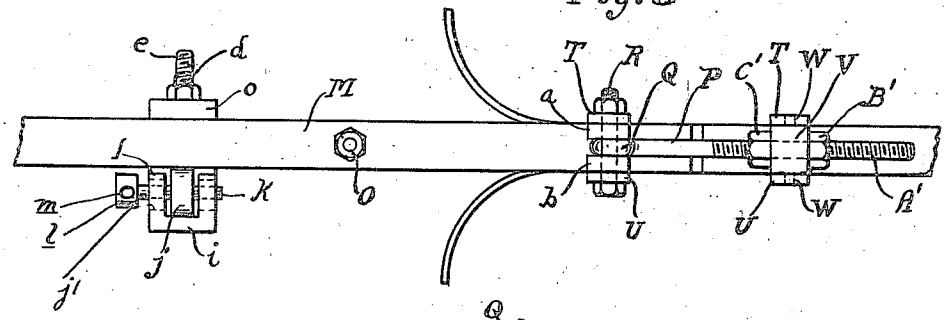


Fig. 4

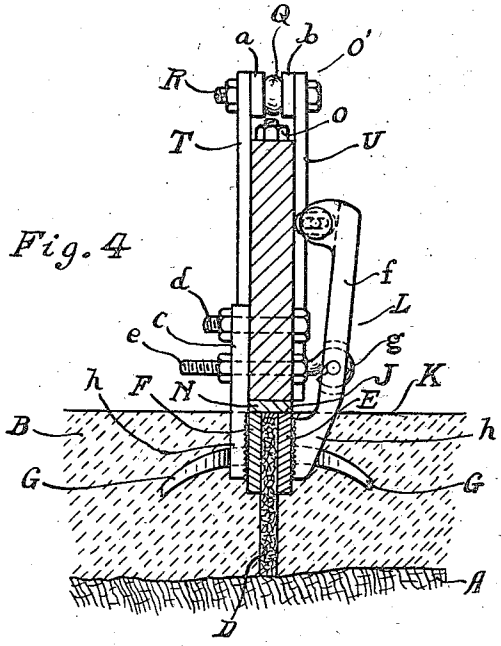


Fig. 5

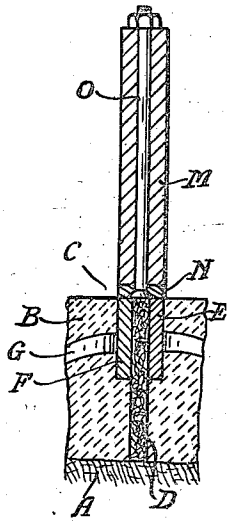
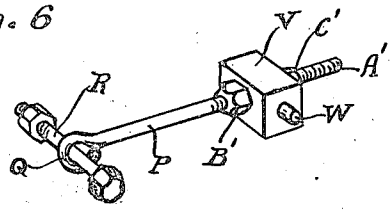


Fig. 6



Witnesses

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3 SHEETS—SHEET 3.

Fig. 7.

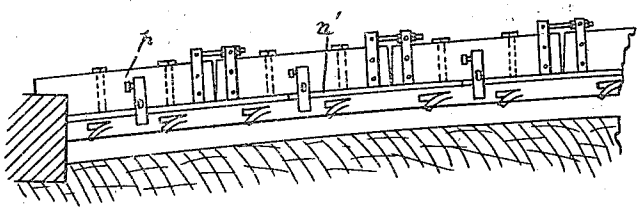
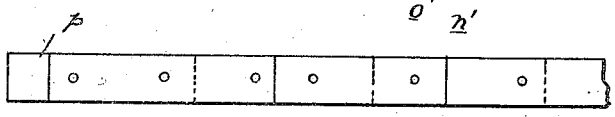


Fig. 8.



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UNITED STATES PATENT OFFICE.

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APPARATUS FOR INSTALLING PAVEMENT-JOINTS.

1,127,378. Specification of Letters Patent. Patented Feb. 2, 1915.

Application filed June 1, 1914. Serial No. 842,252.

To all whom it may concern:

Be it known that I, ROBERT D. BAKER, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Apparatus for Installing Pavement-Joints, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to an apparatus for installing pavement joints, and resides in the novel constructions, arrangements and combinations of parts as will more fully hereinafter appear.

In laying certain types of pavement, such as concrete pavement, it is the practice to arrange at intervals in the pavement, joints which will provide for expansion or contraction and during the pouring of the concrete, or other pavement, material upon the road bed, it is necessary to support these joints in proper relation to the road bed. As the contour or crown of the face of one pavement may be different from the contour of the face of another pavement, it is desirable to have a joint installing apparatus which is adapted to hold joints of various longitudinal contours or crowns in proper relation to the pavement, so that the same installing apparatus may be used for pavements of different surface contours. I have therefore, not only provided a novel and simple construction of installing apparatus, but further have provided an installing apparatus which is so constructed as to be readily adapted to hold in proper relation to the road bed joints of different longitudinal contours.

Further, I have provided a structure by which the joint may be adjusted after it is engaged with the installing apparatus. Also, I have provided a construction of installing apparatus which allows the length thereof to be readily regulated so that it may be used in connection with pavements of different widths.

In the drawings, Figure 1 is a side elevation of one form of installing apparatus embodying the invention, showing the pavement joint as held thereby in proper relation to the road bed; Fig. 2 is a similar view showing the installing apparatus supporting a joint of different longitudinal contour; Fig. 3 is a fragmentary enlarged top plan view of the installing apparatus illustrated in Figs. 1 and 2; Fig. 4 is a vertical section on the line x—x of Fig. 1, illustrating the relation of the installing apparatus to the pavement after the latter has been applied to the road bed; Fig. 5 is a section on the line y—y of Fig. 1, Fig. 6 illustrates a detail of construction, and Figs. 7 and 8 illustrate a modification.

A designates the road bed and B the pavement, such as concrete, arranged thereupon. At suitable intervals are provided joints C which, provided for contraction and expansion, are commonly called expansion joints. These joints may be arranged in any desired relation to the road bed, usually from curb to curb. While a device embodying my invention may be employed for holding various types of expansion joints—as it is exceedingly desirable for use with joints composed of wear plates having compressible material therebetween I have illustrated and will describe the installing device in connection with an armored expansion joint. As shown D is the compressible material, herein shown as composed of felt, and E and F are wear plates having tongues G embedded in the concrete. Each of the plates E and F preferably, though not necessarily, is formed of a single piece of metal extending from one side form, such as the curb H, to the opposite side from or curb I. The wear plates when installed in the pavement have their upper edges J substantially flush with the surface K of the pavement, as shown in Fig. 4. As before stated, my invention relates to an apparatus for holding the pavement joint in proper relation to the road bed while the pavement material is poured upon or otherwise applied to the bed.

Referring to the one embodiment of the invention shown in the drawings, A^2 designates a joint-supporting means or installing apparatus, herein shown as composed of a beam B^2 and clamps L for securing the joint to the beam. In the particular structure illustrated the installing apparatus is adapted to hold joints of different longitudinal contours by forming the beam so that the longitudinal contour thereof may be varied. Thus the beam B is formed of a plurality of sections M to the bottom edges of which is attached a flat metallic strip N. The latter is secured to the sections M by bolts O which extend upwardly through the sections. Adjacent sections are connect-

ed together by means of devices O′ which will permit the distance between the upper edges of adjacent sections to be varied and as the bolts O are spaced a considerable distance from the ends of the sections M, the strip N will be allowed to bend or to straighten when the distance between the upper edges of the sections M is adjusted. As shown P is a bolt having at one end an eye Q pivotally engaging a bolt R carried by plates T and U which are secured to one of the ends of adjacent sections, *a* and *b* washers or filler blocks interposed between the plates and the eyes Q, and V is a block having trunnions W pivoted in apertures in the plates T U of the other meeting end. This block is apertured to allow the threaded end A′ of the bolt P to extend therethrough and upon the threaded end A′ are adjusting nuts B′ C′ arranged upon opposite sides of the block. Upon reference to Figs. 1 and 2 it will be noticed that the meeting ends of the sections abut adjacent their lower edges but diverge toward the top. Therefore, by adjusting the nuts B′ C′ of the various devices O′ to shorten the distance between adjacent ends, there will be a tendency to straighten the beam, while by adjusting the nuts B′ and C′ to increase the distance between adjacent ends, the curvature of the beam will be increased. In Figs. 1 and 2 the beam is shown in connection with pavements of different crowns, the crown of the pavement in Fig. 2 being greater than that of the pavement in Fig. 1. As will be noted, the distance between the upper edges of adjacent ends is greater in the second figure. Preferably each one of the sections of the beam is provided with a clamp L and while these clamps may be of any suitable construction, in the drawings I have illustrated a novel and simple form of clamp which is composed of a metallic strip *c* rigidly secured to one side of the section as by bolts *d* and *e* and an adjustable member *f* pivoted intermediate its ends to a projection *g* of the bolt *e*, each of the members *c f* have serrated jaws *h*, which project below the beam and which are adapted to engage and clamp therebetween the pavement joint. The member *f* has adjacent its upper end a bifurcated portion *i* within which is arranged an eccentric *j* that is fixed to a shaft *k* rotatively mounted in the bifurcations *i* and having an extension *j′* projecting therewithout. Fixedly connected to the projecting end of the shaft is a bearing *l* having an aperture *m* for receiving a suitable lever or handle for turning the shaft *k*. To engage the pavement joint with the clamp the shaft *k* is turned to position the eccentric so as to allow the spreading of the jaws *h*. The joint is then arranged between the jaws with its upper edge in contact and therefore, positioned by the strip N, and the shaft *k* turned to cause the eccentric to force the jaws together.

From the foregoing description it will be noted that an apparatus embodying the invention may be employed for holding joints of different longitudinal contours in proper relation to the road bed and that with the structure illustrated in the drawings the beam may first be adjusted in proper longitudinal contour for the crown of the road and then the joint engaged therewith and its upper edge positioned by the strip N which forms a gage for alining the upper edge to the predetermined longitudinal contour, or the joint engaged with the clamp and the adjustment of the beam be effected either wholly or in part after the beam is arranged across the road bed. The beam may be supported in any suitable manner, but when the joint extends from side to side of the road bed preferably the ends of the beam are formed with projections D′ that are adapted to rest upon the curbs or side forms of the road.

I find it very desirable in some instances to provide an installing device which is so constructed as to permit the length thereof to be varied, thereby allowing the same installing device to be used for roads of different widths. In Figs. 7 and 8 is shown one embodiment of this feature. Instead of having the metal strip N extend uninterruptedly from end to end of the installing device, the latter is formed in sections *n* adjacent an end of the beam or adjacent to both ends, if so desired. These sections preferably are of a length to extend from substantially the center of one of the sections of the beam to adjacent the center of the abutting section, and are secured thereto by bolts *o*. The end of the portion of the section *n* that passes beneath the meeting ends of the sections of the beam is unbroken, which is very desirable, since the portion of the strip beneath the meeting ends of the sections of the beam must bend when the beam is adjusted.

To increase the length of the installing device it is merely necessary to add one or more sections of the beam and the corresponding section *n*, while by removing a section or sections of the beam, together with the sections *n* thereof, the length of the installing device may be shortened. Where the sections *n* are employed, the end section *p* of the beam is preferably provided with a metallic strip that extends for substantially the entire length of the section *p* and has a portion projecting therebeyond of sufficient length to be properly secured to the adjacent beam section.

While I have illustrated in the drawings a very desirable, novel and simple installing device, I do not wish to limit my protection to the particular structure illustrated, but

consider the invention of the scope pointed out in the claims.

What I claim as my invention is:—

1. An apparatus for installing pavement joints comprising means for temporarily supporting joints in proper relation to the pavement and means for adjusting the first mentioned means to adapt the latter for supporting joints of various longitudinal contours.

2. An apparatus for installing pavement joints comprising supporting means adapted to span a road bed, a plurality of joint engaging members carried by the supporting means, and means for relatively adjusting said joint engaging members to vary the height of the latter in relation to a road bed.

3. An apparatus for installing pavement joints, comprising a support, means carried by said support temporarily engaging a joint and suspending the same from said support in proper relation to the pavement, and means for varying the contour of the longitudinal line of said suspending means.

4. An apparatus for installing pavement joints, comprising means for temporarily supporting joints in proper relation to the pavement, and means for varying the longitudinal contour of the joint-supporting means.

5. An apparatus for installing pavement joints, comprising a support, a plurality of spaced clamps carried by said support for engaging and suspending a joint from the support, and means for varying the contour of the longitudinal line of said clamps, for the purpose described.

6. An apparatus for installing pavement joints, comprising means for engaging and supporting in proper relation to the pavement a joint, said means including a gage for engaging an edge of the joint, and means for adjusting the longitudinal contour of said gage.

7. An apparatus for installing pavement joints, comprising means for engaging and supporting in proper relation to the pavement a joint, said means including a flat metallic strip for engaging the upper edge of the joint, and means for adjusting the longitudinal contour of said metallic strip.

8. An apparatus for installing pavement joints, comprising a beam formed of sections, means for adjusting the sections to vary the longitudinal contour of said beam, and means carried by said beam for engaging a pavement joint.

9. An apparatus for installing pavement joints, comprising means for engaging and supporting in proper relation to the pavement a joint, and means for varying the longitudinal configuration of the joint while in engagement with the first mentioned means.

10. An apparatus for installing pavement joints, comprising a beam, a plurality of clamps carried by the beam and engaging the joint, each of said clamps comprising a stationary member provided with a jaw extending below the beam, an adjustable member pivoted intermediate its ends and provided with a jaw extending below the beam and arranged in operative relation to the first-mentioned jaw, and an eccentric upon the adjustable member for moving the jaw of the last-mentioned member toward the jaw of the first-mentioned member, for the purpose described.

11. An apparatus for installing pavement joints, comprising means for supporting joints in proper relation to the pavement, and means for varying the length of said supporting means.

12. An apparatus for installing pavement joints, comprising means for supporting joints in proper relation to the pavement, said means being composed of a plurality of sections, and means for detachably securing together two or more of said sections.

13. An apparatus for installing pavement joints, comprising a beam formed with a removable section to permit the length thereof to be varied, and clamps carried by said beam for engaging the joint.

14. An apparatus for installing pavement joints comprising means for temporarily supporting joints of various longitudinal contours in proper relation to the pavement, and means for alining said joints to predetermined longitudinal contours.

In testimony whereof I affix my signature in presence of two witnesses.

ROBERT D. BAKER.

Witnesses:
W. J. BELKNAP,
JAMES P. BARRY.