March 29, 1932. D. B. BISHOP 1,851,615

ROAD BUILDING SPACER

Filed Dec. 19, 1928

Fig. 1.

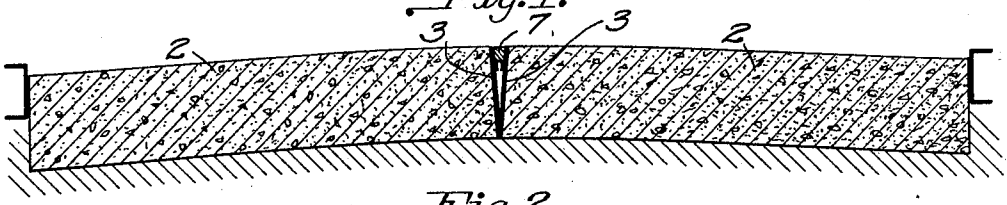


Fig. 2.

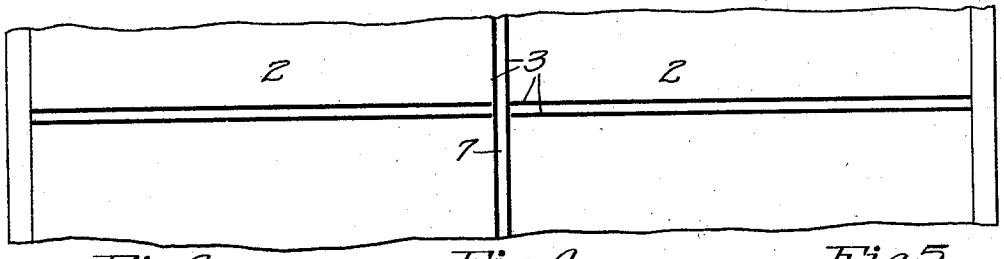


Fig. 3.

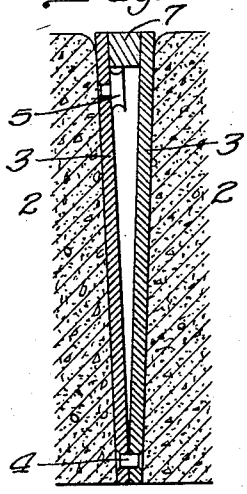


Fig. 4.

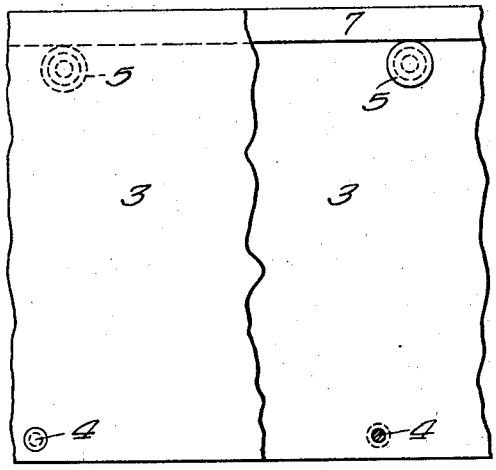


Fig. 5.

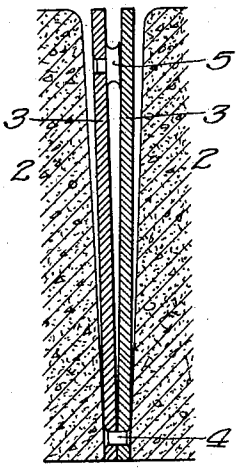


Fig. 6.

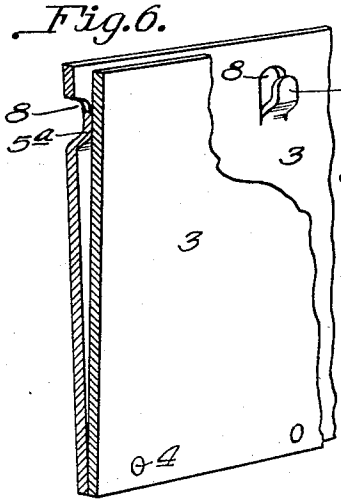


Fig. 7.

Fig. 9.

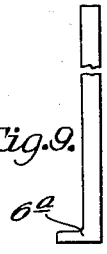
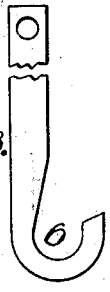


Fig. 8.



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UNITED STATES PATENT OFFICE

DONALD B. BISHOP, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR TO ELECTRIC WELDING COMPANY, OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA

ROAD BUILDING SPACER

Application filed December 19, 1928. Serial No. 327,021.

My invention consists of an improvement in means for forming a defined clearance space or crevasse in roadways or the like, capable of distention, collapse and removal.

In the modern practice of highway or roadway construction the tendency to crack due to expansion and contraction under weather changes, traffic, etc. is counteracted by providing preformed channels at intervals, either longitudinally or crosswise, so that the separated solid sections may expand or contract as isolated units without imparting continuous strains resulting in fracture, ribbing of the surface, or the like. Such spaces are ordinarily filled with a substance or material capable of considerable compression or expansion so as to maintain the channels closed under all conditions.

Ordinarily such channels are made by utilizing a spacer plate and a filling of premolded joint material which may be allowed to remain in place after the plate is forcibly removed and the pavement is hardened, or of other material which must be forcibly removed with considerable labor, trouble and cost.

In my invention I utilize a spacing form or spreader made of a pair of sides of plate or sheet metal, or other suitable material, joined together at their lower edge portions and capable of distention and collapse for insertion, use, and, removal, as hereinafter described.

In the drawings showing certain preferred constructions:

Fig. 1 is a cross section of a roadway showing my improved spacer in position;

Fig. 2 is a plan view of the same, showing both longitudinal and transverse applications;

Fig. 3 is an enlarged cross section of the device distended;

Fig. 4 is a side elevation of the spacer, when made straight, partly broken away;

Fig. 5 is a view similar to Fig. 3 showing the spacer collapsed for removal;

Fig. 6 is a sectional perspective view showing a modified construction;

Fig. 7 is an end view showing a one piece form;

Fig. 8 is a view showing one form of lifting hook;

Fig. 9 is a similar view showing another form of lifting tool.

In the drawings, 2 is the road bed of a highway made of concrete, asphalt, or similar material between adjacent sections of which are to be provided intervening clearance spaces or grooves for subsequent filling.

For such purpose I provide the spacer consisting of opposite side members 3 of plate or sheet metal or other suitable material joined at their lower edges by any suitable means, as countersunk rivets 4. The upper inner edge portions of one or both sides 3 are provided with abutments 5 of any suitable kind or form adapted to provide for holding and lifting engagement of a suitable tool, as hook 6. The abutments 5 extend inwardly and may be in the form of a grooved stud having countersunk rivet connection, providing for hook engagement. The countersunk rivets avoid outer projection and facilitate smooth sliding engagement against the road aggregate during removal.

Another advantage of the abutments 5 is that they provide at intervals supports for the longitudinal closing strips 7 for covering the interior space against entrance of roadway material during pouring, spreading, etc.

I show in Fig. 6 a modified construction in which the inwardly extending abutments may be formed by punching the metal inwardly as at 5*a*, partly severing it and forming a lifting hole 8 for insertion of a suitable tool, as hook 6*a*.

With either construction of abutment the sides 3 preferably tend to spring together when the strip 7 is removed and to collapse, for separation from the contacting surfaces of the aggregate at each side, when the spacer may then be withdrawn, without disturbance of the pavement aggregate. The sides may also be forcibly collapsed by drawing the sides together by any suitable tool or appliance.

Instead of riveting or otherwise connecting the lower edges of sides 3, as by welding, I may make them of a continuous integral blank doubled upon itself as at 9 and pressed

together as in Fig. 7. With either construction the sides are sufficiently flexible to allow of slight spreading for insertion of the strip 7 and to provide for contraction when it is removed, and for free clearance space permitting lifting and removal.

When used, the distended spacers with spreader strips 7 inserted, are located in proper position, either lengthwise or endwise within the area of the roadway being made. Their outer sides are preferably lubricated by oil or the like, to assist in removal. The aggregate 2 is then applied with its surface flush with or below the upper edges of sides 3, finished smooth and allowed to harden or set.

Thereupon strips 7 are removed, the sides 3 are collapsed, and the spacer or spacers are removed for further use, leaving corresponding V-shaped grooves extending downwardly between adjacent roadway units. These spaces or grooves may then be subsequently filled with asphaltum or other suitable material, following usual practice.

While the improvement is well adapted to road building operations, it may also be used with equally good results in laying floor slabs of aggregate or in laying up wall surfaces of similar material, etc.

It will also be understood that a plurality of sections may be used, placed end to end, for any length desired.

The construction and operation of the invention will be readily understood and appreciated by all those familiar with road building practice.

When used longitudinally the spacers may be continuously straight and when laid transversely they may be curved to correspond to the crown of the road. They may be made in any desired length, depth, thickness of material, or otherwise changed or varied in detail construction to adapt them to local conditions or otherwise by the skilled mechanic, within the scope of the following claims.

What I claim is:

1. A road building spacer consisting of a pair of expansible sides joined closely together at their lower edge portions and having a spacing abutment extending from one side toward the other below their upper edges and providing clearance for an inserted spacing strip.

2. A road building spacer consisting of a pair of expansible sides joined closely together at their lower edge portions and provided with interior integral spacing abutments.

3. A road building spacer consisting of a pair of expansible sides joined closely together at their lower edge portions and provided with interior abutments extending from one side towards the other below their upper edges and providing lifting shoulders.

4. A road building spacer consisting of a pair of expansible sides joined closely together at their lower edge portions and provided with smooth unobstructed outer faces and inner spacing abutments below their upper edges and extending inwardly from one to the other.

5. A road building spacer consisting of a pair of expansible sides joined closely together at their lower edge portions by countersunk rivets and provided with interior lifting abutments secured to one of the sides and extending towards the other.

6. A road building spacer consisting of a pair of expansible sides joined closely together at their lower edge portions and provided with interior spacing abutments and having a filling strip between their upper edges holding them apart and resting on said abutments.

7. A road building spacer consisting of a pair of expansible sides, means maintaining the sides separated from each other, and a removable filling strip between their upper edges holding them apart and resting on said separating means.

8. A road building spacer consisting of a pair of expansible sides joined at their lower edge portions and provided with interior spacing abutments and having a filling strip between their upper edges resting on said abutments.

9. In combination for use with roadway aggregate, a collapsible double wall spacer intervening between adjacent sections thereof provided with spacing abutments and having a spacing strip between the upper edges of the walls.

In testimony whereof I hereunto affix my signature.

DONALD B. BISHOP.