

July 6, 1937.

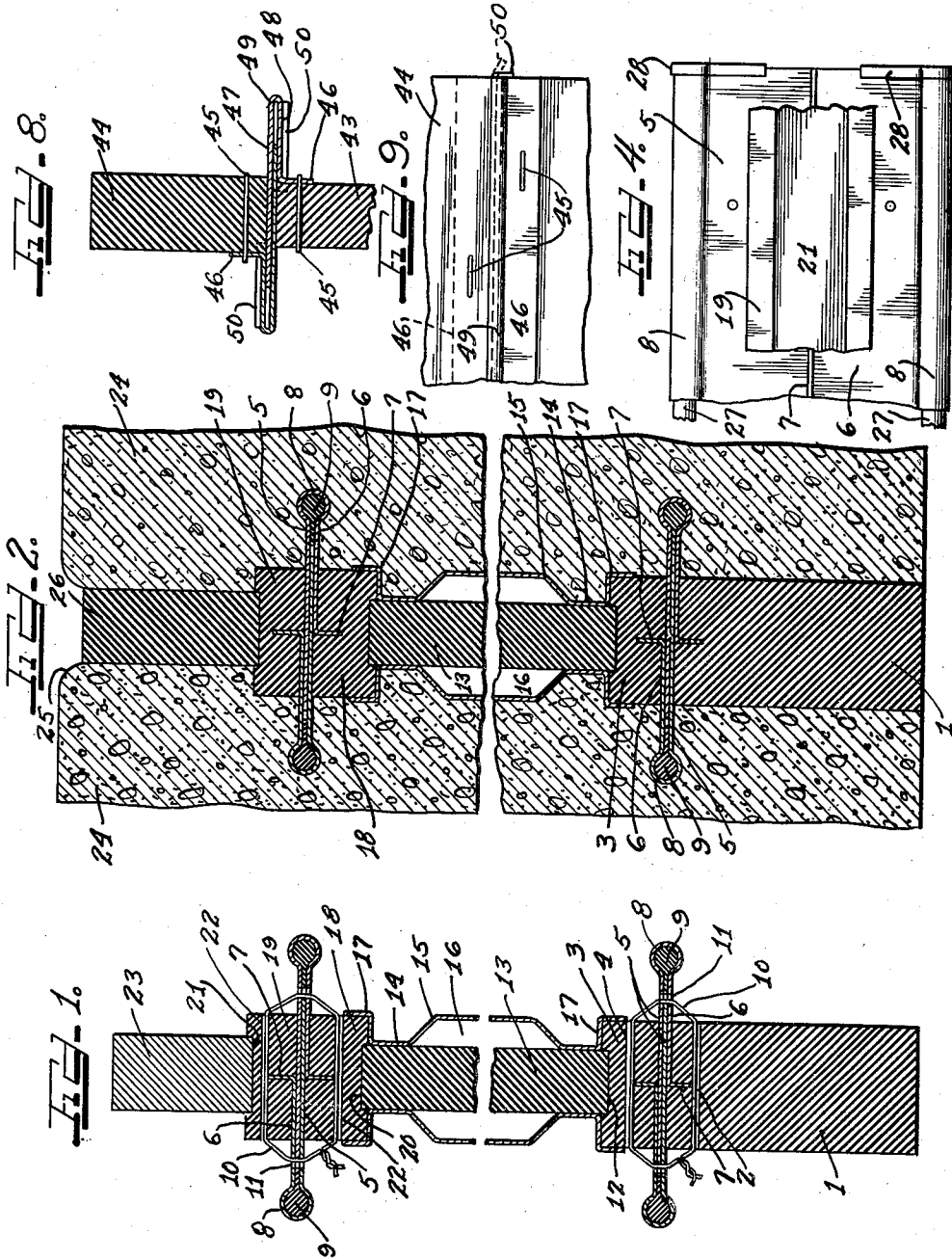
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2,086,393

ROAD EXPANSION JOINT

Filed Dec. 26, 1935

3 Sheets-Sheet 1



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July 6, 1937.

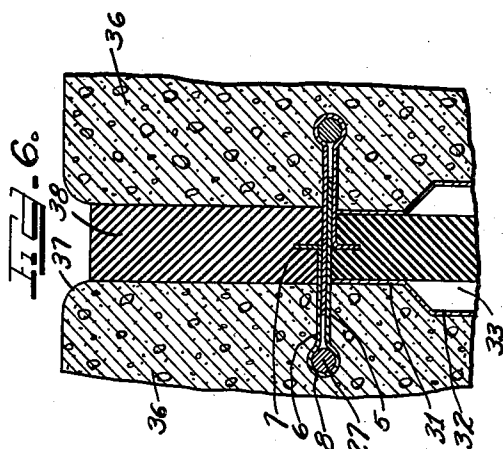
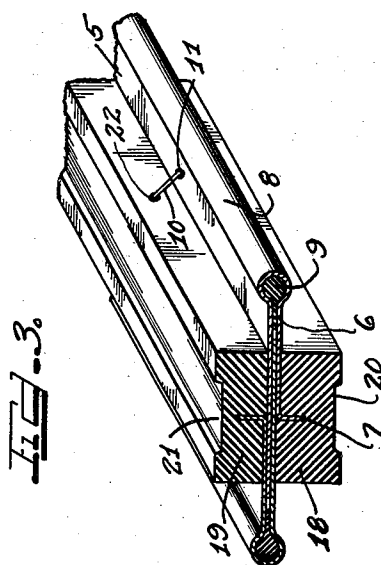
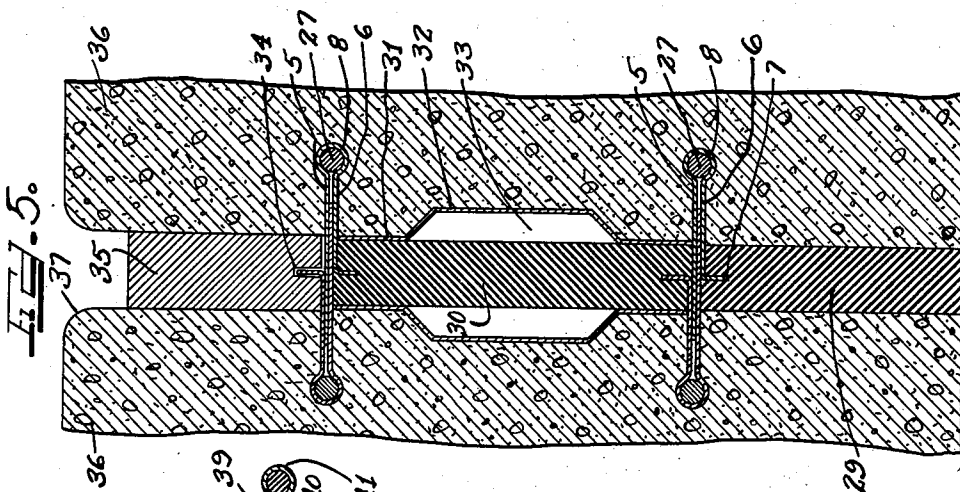
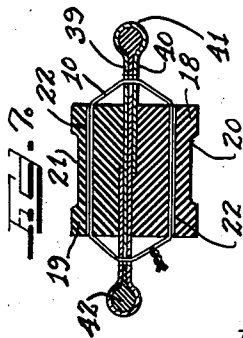
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ROAD EXPANSION JOINT

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3 Sheets-Sheet 2



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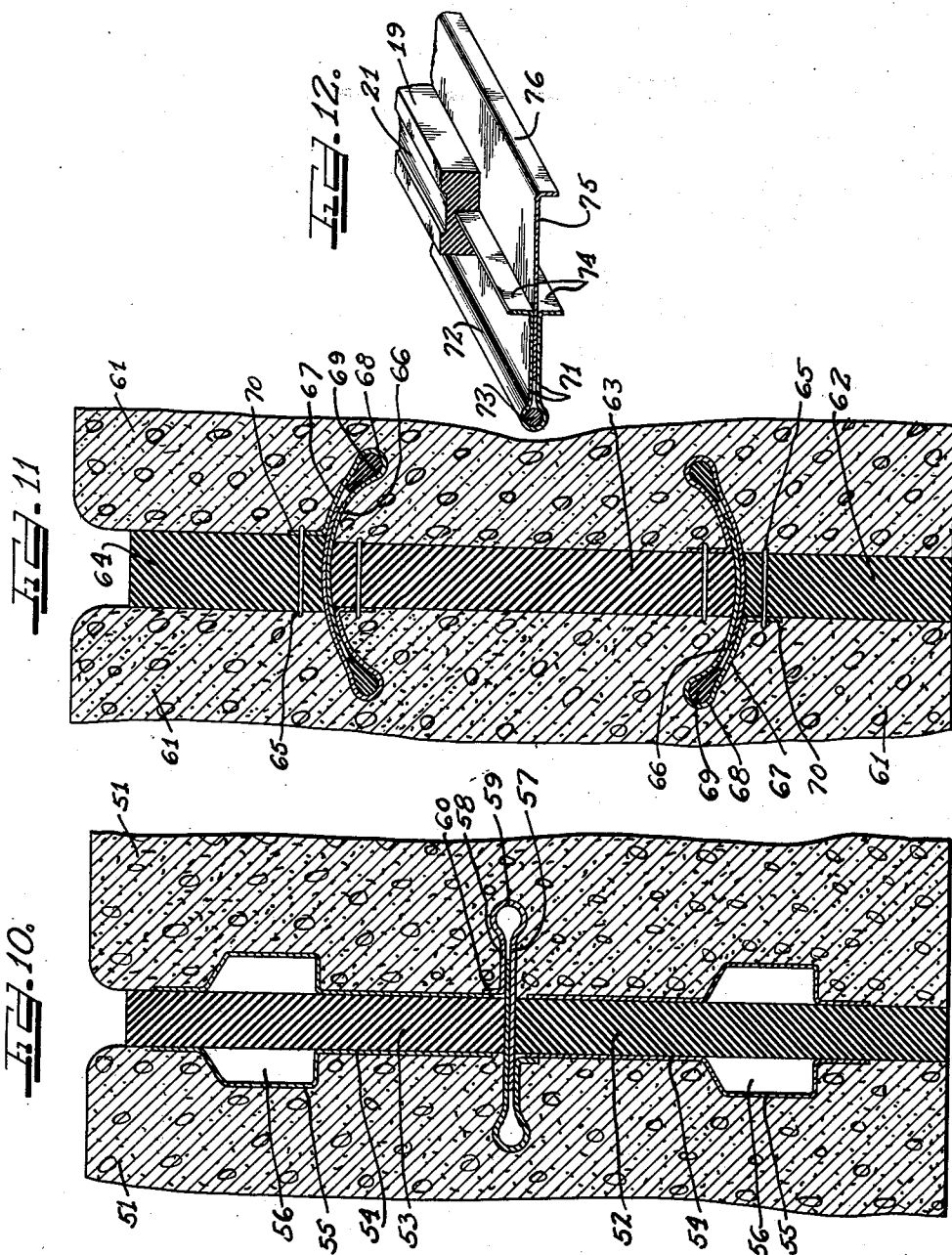
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ROAD EXPANSION JOINT

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3 Sheets-Sheet 3



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ROAD EXPANSION JOINT

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15 Claims. (Cl. 94—18)

This invention relates to an improved road expansion joint adapted to be embedded between concrete road slabs, said joint including in combination an assembled core unit comprising a plurality of superimposed precast mastic boards or bars, selected members of which have disposed transversely therethrough slidably adjustable shield members having reinforced projecting margins adapted to be anchored in the concrete road slabs, whereby the adjustable shields serve as closures for the top and bottom of the main portion of the expansion joint to prevent moisture from entering the main portion of the joint from the top or from the bottom of the slab.

Heretofore in the construction of concrete roads it has been the practice to divide the road into two sides by means of a centrally disposed center strip or center joint. The two sides of the road are furthermore divided into concrete road slabs by means of transversely disposed expansion joints and by means of contraction joints, a plurality of which are usually disposed between each pair of the widely separated expansion joints. It has been found in the usual type of road construction just described that in addition to providing road expansion and contraction joints, it is necessary to make the expansion joints rather wide, in order to compensate for the expansion of the plurality of road slabs formed between each pair of the widely separated expansion joints. The difficulty with this construction is that when one road slab expands, it usually pushes the other two or more slabs, thereby causing all of the road slabs between a pair of expansion joints to slide over the subgrade, since the contraction joints are not capable of taking up any of the expansion. To obviate the above-mentioned difficulties, the present invention has been devised to permit a road to be constructed without the use of contraction joints, and using only expansion joints between the road slabs. With the use of only expansion joints in each side of the road, said joints are made comparatively narrow, and it is possible to employ thin compressible filler boards or core members which are divided by means of improved load transmission sealing shields which may be constructed of comparatively thin sheets of metal, since the shields need not be made very wide, due to the narrowness of the expansion joints. With the use of the improved narrow load transmission expansion joint between the road slabs, said slabs may move independently of one another longitudinally of the road,

without disturbing the other road slabs, since the movement of the independent slabs is absorbed by the compressible expansion joint cores provided on opposite sides of the slabs.

It is an object of this invention to provide a road expansion joint device including superimposed preformed plastic filler boards having telescoping sealing shields projecting therethrough to be embedded in concrete road slabs and also having supported on the uppermost preformed core board a removable steel bar to facilitate edging of the upper edges of the concrete slabs on opposite sides of the top of the joint.

It is also an object of this invention to provide a road expansion joint forming device in the form of a unit adapted to be set up on a road subgrade for the separation of concrete road slabs, said device consisting of an assembled preformed mastic core having channeled core plates secured against opposite sides thereof, and also having disposed transversely therethrough above and below the plates telescoping or adjustable separating shields adapted to be anchored in the road slabs for slidable adjustment thereby with the expansion and contraction of the road slabs due to temperature changes, said adjustable shields serving to prevent water or other foreign materials from entering the main portion of the expansion joint from the top and the bottom of the joint.

It is a further object of this invention to provide a road expansion joint unit wherein a compressible core is divided by transversely disposed adjustable shields, the projecting margins of which are adapted to be embedded in concrete road slabs to permit the shields to serve as closures for the top and bottom of the main portion of the expansion joint to prevent water or other foreign substances from entering the joint.

It is furthermore an object of this invention to provide a compressible expansion joint filler having overlapping or slidably interfitting shield members projecting transversely therethrough, leaving reinforced margins exposed to be embedded in concrete for the formation of an expansion joint between concrete road slabs.

Another object of the invention is to provide a road expansion joint wherein superimposed compressible fillers are separated or divided by means of load transmission shields consisting of slidably interfitting sections adapted to be embedded in the concrete slabs on opposite sides of the joint to serve as means for transmitting loads from one slab to another, and also serving the purpose of a seal to prevent water or foreign

substances from entering into the main portion of the expansion joint.

It is a further object of this invention to provide a road expansion joint wherein superimposed compressible filler members are divided by means of arched or convexo-concave adjustable load transmitting shields projecting beyond the sides of the filler members for embedding in the concrete slabs on opposite sides of the joint.

It is also an object of this invention to provide a road expansion joint wherein comparatively narrow filler members have void-forming plates secured on opposite sides thereof, and wherein the filler members are separated by a transversely adjustable load transmitting shield device projecting beyond the sides of the filler members for embedding in the concrete slabs.

It is an important object of this invention to provide a road expansion joint which is of comparatively thin construction made of thin compressible filler members or plates superimposed on one another and having disposed transversely thereof at one or more elevations adjustable or telescoping shield members of either straight or curved form, having the outer margins thereof reinforced and embedded in opposite concrete road slabs between which the expansion joint is formed for the purpose of transmitting loads from one slab to the other.

Other and further important objects of this invention will be apparent from the disclosure in the specification and the accompanying drawings.

The invention (in preferred forms) is illustrated in the drawings and hereinafter more fully described.

On the drawings:

Figure 1 is a fragmentary vertical detail section taken through an expansion joint forming unit including adjustable load transmitting shields and a removable top edging bar to provide an assembled unit adapted to be set up upon a road subgrade ready to have concrete poured on opposite sides of the unit for the formation of road slabs separated by the improved expansion joint.

Figure 2 is a fragmentary vertical section through the joint after the concrete has been poured and after the removal of the top edging bar and the substitution of a plastic top filler therefor to seal the top crack of the expansion joint.

Figure 3 is a fragmentary isometric and sectional view of the top asphalt seal of the joint unit, illustrating the reinforced adjustable load transmitting shield projecting through the seal bar.

Figure 4 is a fragmentary top plan view of one end portion of the top seal unit illustrated in Figure 3, showing end closure caps for the outer ends of the telescoping or adjustable load transmission shield sections when metal reinforcing rods are used to fill the sleeve-shaped bead or rim in place of a plastic filler, as illustrated in Figures 1 to 3 inclusive.

Figure 5 is a vertical sectional view through a modified form of road expansion joint consisting of two filler sections and a top edging bar, with the sections and bar separated from one another by means of telescoping or adjustable load transmitting shields, the sleeve-shaped beads or margins of which are reinforced by means of metal rods.

Figure 6 is a fragmentary vertical sectional view of the upper portion of the road expansion

joint illustrated in Figure 5 after the top edging bar has been removed and the space at the top of the joint has been closed by means of an asphalt top filler which sealingly seats upon the upper side of the middle portion of the top load transmission shield.

Figure 7 is a detail transverse section of a mastic top seal block, the upper and lower sections of which are separated by means of a modified form of load transmission shield which is wired in position between the upper and lower portions of the top seal block.

Figure 8 is a fragmentary sectional view of the upper portion of a road expansion joint forming mechanism including another modified form of a load transmission shield, the sections of which slidably telescope or interfit with one another and are connected with different filler sections of the upper portion of the joint forming mechanism.

Figure 9 is a fragmentary side elevational view of the modified form of the joint forming mechanism illustrated in Figure 8.

Figure 10 is a fragmentary vertical sectional view through another modified form of road expansion joint wherein the joint mechanisms between the road slabs consist of upper and lower compressible fillers having void-forming plates contacting the opposite sides thereof, and wherein the upper and lower fillers are separated by means of a single load transmission shield illustrating another modification.

Figure 11 is a vertical sectional view through another modified form of road expansion joint mechanism wherein a joint forming unit is embedded between concrete road slabs, and wherein the three compressible filler sections are separated by means of another modified form of arched or concavo-convex form of load transmission shield.

Figure 12 is a fragmentary isometric and sectional view of still another modified form of load transmission shield illustrating a portion of an expansible filler block in engagement with the shield.

As shown on the drawings:

In the form of load transmission expansion joint mechanism illustrated in Figures 1 to 3 inclusive, the joint forming unit is adapted to be assembled as illustrated in Figure 1, with the various sections comprising the unit adapted to be assembled and tied together and then shipped to location, or the various sections may be shipped to location and assembled as shown in Figure 1 upon the road subgrade ready to have concrete poured on opposite sides of the unit. The improved joint forming unit comprises a compressible bottom filler board or bar 1 constructed of asphalt, sponge rubber, cork or a compressible material known to the trade as "Flexcel", or any other suitable material. The bottom filler board 1 is provided at intervals with transversely disposed openings 2. Disposed above the bottom filler board 1 is a bottom filler bar 3 constructed of substantially the same material as the filler board 1, and also having disposed at intervals therethrough openings 4.

Disposed transversely between the bottom filler board 1 and the seal bar 3 is a lower load transmission unit comprising two sections constructed of sheet steel each bent to provide a wide plate 5 and a narrower plate 6 substantially parallel thereto and having one margin deflected at substantially right angles to form an anchoring flange 7. The plates 5 and 6 of each section are integrally connected by means of a bight 75

portion in the form of a rounded sleeve or bead 8, which is filled with a reinforcing plastic filling 9, such as asphalt or the like. The two load transmission sections telescope or slidably interfit one another, with the long plate 5 of one section slidably projecting between the plates 5 and 6 of the other section and projecting across and a little beyond the side of the filler board 1 and the filler seal bar 3. As shown in Figure 1, the flanges 7 of the load transmission sections respectively project into the material forming the filler board 1 and the seal bar 3. For the purpose of holding the load transmission shield between the filler board 1 and the filler bar 3, wires 10 are engaged or threaded through the openings 2 and 4 of the filler members and through openings 11 provided in the plates 5 and 6 of the load transmission shield sections. The ends of the binding wires 10 are twisted together to hold the filler board 1, the filler bar 3 and the load transmission sealing unit bound together in a convenient form for shipment and for mounting upon a road subgrade when the expansion joint forming mechanisms are assembled.

The top surface of the bottom seal bar 3 is provided with a longitudinal groove at 12 in which a main or intermediate filler board 13 is seated. The filler board 13 is constructed of a compressible mastic material similar to the material out of which the filler board 1 is constructed. Seated against the opposite sides of the main filler board 13 are sheet metal plates 14, each of which is provided with a longitudinally disposed channel section 15 which is so disposed when in position that a void 16 is provided between the channel section 15 and the side of the filler board 13. The longitudinal margins of each of the core plates 14 are deflected outwardly and upwardly to provide angle members 17. The lower angle members 17, as clearly illustrated in Figure 1, seat over the side edges of the bottom seal bar 3, thereby sealing the connection between the seal bar 3 and the bottom of the intermediate filler board 13.

Seated in the upper angle members 17 and upon the top of the intermediate filler board 13 is a top seal unit comprising a split upper seal bar constructed of a mastic or compressible material, such as asphalt, sponge rubber, cork, or "Flexcel". The top seal bar comprises a bottom bar section 18 and top bar section 19, the bottom bar section 18 being provided with a longitudinally disposed groove 20 in the bottom surface thereof, while the upper bar section 19 is provided with a longitudinally disposed groove 21 in the top surface thereof. The seal bar sections 18 and 19 are connected together by means of transversely adjustable or telescoping load transmission shields of exactly the same construction as the shields which separate the filler members 1 and 3. The flanges 7 of the shield sections are forced into the material forming the bar sections 18 and 19, and the bar sections together with the shields are secured together by means of wires 10 disposed at spaced intervals along the length of the unit and projecting through the openings 11 in the shields and through openings 22 provided transversely through the filler bar sections 18 and 19. The top seal unit in assembled form, as illustrated in Figure 3, is adapted to be shipped to location and placed upon the top edge of the intermediate filler board 13 and seated in the top angle members 17 of the core plates 14. To complete this expansion joint forming unit, as illustrated in Figure 1, a

steel edging bar 23 is seated in the top groove 21 of the seal bar section 19.

The expansion joint forming mechanisms assembled as in Figure 1 are adapted to be disposed transversely across the road subgrade and extending from the center strip of the road outwardly to the outer edge thereof. The concrete is now deposited on opposite sides of the joint forming mechanism to embed the same and form the concrete road slabs 24 in which the projecting bead rims or margins 8 of the load transmission shields are embedded or anchored. After the pouring of the concrete and the initial set thereof, the upper edges of the road slabs 24 are edged or rounded as at 25 in Figure 2, after which the steel edging bar 23 is removed from between the road slabs to leave an upper groove or crack which is then filled with a plastic filler such as asphalt or the like. The plastic filler thus deposited forms a top compressible seal bar 26, the bottom of which fills in the top groove 21 of the seal bar section 19.

When a load is applied to one of the concrete road slabs 24, said load is adapted to be transmitted from said slab to the opposite concrete slab by means of the load transmission telescoping shield sections which form an adjustable or slidable connection between the road slabs and which span the expansion joint. The load transmission shields forming part of the expansion joint forming mechanism also coat with the compressible bottom and top seal units to seal the main or intermediate portion of the joint so that water and foreign substances cannot enter the main part of the joint.

Figure 4, which illustrates a modified form of a load transmission shield, has the shield sections thereof constructed identical with the shield sections illustrated and described in connection with Figures 1 to 3 inclusive. Like parts are accordingly designated by corresponding reference numerals. In the modified form of the load transmission shield, the bead-like sleeves 8 are reinforced by means of metal rods 27. When metal rods are used as reinforcing members, the outer ends of the load transmission shields are closed by means of caps 28 which extend inwardly from the sides of the shields to close the openings at the ends of the shield plates. The inner ends of the caps 28 extend inwardly far enough to project into the plastic material of the compressible seal bars of the expansion joint core.

Figures 5 and 6 illustrate a modified form of expansion joint forming mechanism in which a simplified form of core unit is used in combination with the load transmission shields. In this form of the device, the reference numeral 29 indicates a bottom filler board which is preformed and is constructed of asphalt, sponge rubber, cork, or a material known to the trade as "Flexcel". Positioned above the bottom filler board 29 is a main or intermediate filler board 30 which is constructed of the same material as the bottom filler board 29. Disposed transversely between the filler boards 29 and 30 is an adjustable load transmission shield of the type illustrated in Figure 4, with the hollow beads or sleeves 8 reinforced by means of metal reinforcing rods 27. As clearly illustrated in Figure 5, the flange portions 7 of the shield sections project into the filler boards 29 and 30.

Positioned on opposite sides of the main or intermediate filler board 30 are metal core plates 31 having the middle portions thereof deformed to provide longitudinally extending void forming

channels 32 to provide voids between the channel 32 and the sides of the filler board 30.

Supported upon the upper end of the main or intermediate filler board 30 and upon the upper edges of the core plates 31 is an upper load transmission shield identical to the lower load transmission shield. The downwardly projecting flange 7 of the upper shield projects into the top surface of the intermediate or main filler board 30, while the upwardly projecting flange 7 projects into a groove 34 which is formed longitudinally in the middle of the bottom portion of a steel edging bar 35.

After the expansion joint forming mechanism is assembled as illustrated in Figure 5, concrete is poured on opposite sides of said mechanism to form concrete road slabs 36. After the concrete has partially set, the upper edges on opposite sides of the joint space are rounded or edged as at 37, after which the metal edging bar 35 is pulled upwardly from between the adjacent road slabs 36, leaving a top crack or space which is then filled with a plastic material such as asphalt or the like to provide a compressible top filler board or seal 38 to form the top of the completed expansion joint.

In the modified form of the joint forming mechanism illustrated in Figures 5 and 6, loads applied to one of the concrete slabs 36 are adapted to be transmitted to the opposite slab by means of the lower and upper load transmitting shields having the load transmitting shield sections on one side of the joint embedded in one of the slabs, and the shield sections on the opposite side of the joint embedded in the opposite slab, so that with the expansion and contraction of the road slabs the load transmission shield sections slidably interfit or telescope with one another and always maintain a seal below and above the intermediate filler board 30 to prevent water or foreign substances from entering the main middle portion of the expansion joint.

Figure 7 illustrates a modified form of load transmission shield for use between the preformed compressible core forming filler boards or between split members thereof. In the form of the load transmission shield illustrated in Figure 7, said shield is associated with the upper compressible seal unit of the type illustrated in Figure 1, and like parts are accordingly designated by corresponding reference numerals. The modified form of load transmission shield comprises two interfitting or telescoping shield sections each comprising a wide plate 39 and a narrower plate 40 slightly spaced apart and substantially parallel to one another. The plates 39 and 40 are integrally connected by a bight portion in the form of an integral sleeve or bead 41. Each of the split or open sleeve or bead portions 41 is reinforced by means of a plastic filling 42, which not only fills the sleeve, but also projects into the space between the shield plates 39 and 40. The shield plates 39 and 40 are provided with apertures to permit the tie wires 10 to be engaged therethrough and through the openings or slots 22 in the seal bar sections 18 and 19 to hold the seal bar sections and the load transmission shield assembled as a unit for shipment to location to be used in combination with other members to form an expansion joint forming mechanism. The binding wires 10 forming part of the joint forming mechanism may be left in position to be embedded in concrete or, if desired, may be cut, if deemed necessary.

Figures 8 and 9 illustrate another modified

form of load transmission shield adapted to be connected between expansion joint core boards 43 and 44, which are constructed out of a mastic compressible material. The filler boards 43 and 44 are provided with pairs of transverse openings through which fastening wires 45 are adapted to be engaged. The wires 45 also project through apertures in flange members 46. The modified form of load transmission shield illustrated in Figures 8 and 9 comprises two slidably interfitting or telescoping shield sections, each of which comprises a wide plate 47 and a narrower plate 48 which are connected by means of a bight portion 49. One margin of the narrower shield plate 48 is bent outwardly at substantially right angles to form the apertured flange 46 hereinbefore referred to. As shown in Figure 8, the wide plates 47 of the shield sections each slidably interfit between the plates 47 and 48 of the opposite shield section. The openings at the outer ends of the load transmission shield sections may be closed by deflecting a portion of either of the shield section plates 47 or 48 transversely across the outer end of the shield section to form a closure flange 50. The bent over flanges 50 serve the same purpose as do the end caps 28 illustrated in Figure 4.

Figure 10 illustrates another modified form of load transmission expansion joint provided between concrete road slabs 51. This form of expansion joint mechanism comprises a preformed compressible lower filler board 52 and a preformed compressible upper filler board 53. Each of the filler boards has engaged against opposite sides thereof metal core plates 54, each of which is formed with a groove-forming channel 55 to afford a void 56 between the channel 55 and the side of the filler board. In this form of the expansion joint forming mechanism, only a single load transmission shield is provided between the lower and upper filler boards 52 and 53 respectively. The modified form of load transmission shield illustrated in Figure 10 comprises two interfitting or telescoping shield sections each comprising a wide plate 57 and a narrower plate 58 connected by means of a bight sleeve or bead 59. One margin of the narrow shield plate 58 is deflected at substantially right angles to form a flange 60 which may be apertured to permit a binding wire 45 to be engaged through the filler boards similar to the arrangement illustrated in Figure 8, or, if desired, nails or retaining members may be engaged through the apertures of the flange 60 to project into the plastic filler boards. The plate members 57 of the shield sections are wide enough to permit maximum contraction of the road slabs 51, without causing the end margins of the wide plate 57 to move completely out of the load transmission shield sections in which they are slidably engaged. In this form of the device, the voids or spaces provided in the bight sleeves or beads 59 of the load transmission shield sections are left empty. It will, however, be understood that, if desired, the voids in the members 59 may be filled with either a plastic filling or with reinforcing rods.

Figure 11 illustrates another modified form of load transmission expansion joint embedded between concrete road slabs 61. The joint forming mechanism comprises a preformed compressible mastic bottom filler board 62, a main or intermediate filler board 63 and an upper filler board 64. The filler boards 62, 63 and 64 are separated by means of load transmission shields which are secured to the respective filler boards by means

of wires 65 or other suitable means. Each of the load transmission shields comprises two slidably interfitting or telescoping shield sections, each constructed of sheet metal and comprising a wide curved or arched plate 66 and a narrower curved or arched plate 67, which is integrally connected with the plate 66 by means of a curved bight sleeve or bead 68 which is reinforced by means of a filling of plastic material 69. One margin of the curved plate 67 is deflected at an angle to provide a flange 70 which is provided with apertures to permit the mounting wire 65 to be engaged through the flange. The shield sections are arranged in reversed interfitting relation, and have the bight portions thereof embedded in the concrete road slabs 61. The upper load transmission shield has the ends thereof curved downwardly, while the lower load transmission shield has the end portions thereof curved upwardly. It has been found in practice that the curved load transmission shields provide a stronger expansion joint than the straight type of load transmission shield.

Figure 12 is a fragmentary isometric view of another modified form of load transmission shield for use in the formation of expansion joints between concrete road slabs. The modified form of load transmission shield is illustrated in combination with a precast compressible seal bar of the type illustrated in the upper portion of Figure 1. The load transmission shield comprises two sections, one of which is constructed of sheet metal which is bent upon itself to provide two substantially parallel plates 71 connected by a rounded bight forming a sleeve or bead 72, which is reinforced by means of a filler 73, which may be either a steel rod or a plastic filling. The side margins of the plate 71 are deflected in opposite directions to provide flanges 74 for engagement in the plastic seal bar. The second shield section comprises a metal plate 75 which slidably projects between the plates 71 of the opposite load transmission shield section. The outer margin of the shield plate 75 is deflected at an angle to provide an anchoring flange 76 to anchor the plate 75 in one concrete road slab while the opposite load transmission shield section is anchored in an opposite road slab by means of the enlarged rounded sleeve-like bead 72.

It will, of course, be understood that various details of construction may be varied through a wide range without departing from the principles of this invention, and it is, therefore, not the purpose to limit the patent granted hereon otherwise than necessitated by the scope of the appended claims.

I claim as my invention:

1. A road expansion joint former and load distributor comprising a pre-formed compressible core, and a load transmission shield device projecting through the core and comprising two identically constructed chambered telescoping sections reversed to interfit one another and having anchoring means formed thereon in the form of slotted sleeves.

2. An expansion joint for embedding in concrete and including in combination a preformed filler, a load transmission shield projecting through the filler and comprising a pair of reversed identically constructed slidably interfitting sections, and including reinforced anchoring sleeves embedded in the concrete for anchoring the shield sections in the concrete on opposite sides of the filler for transmitting a load applied to the concrete on one side of the joint to the con-

crete formed on the opposite side of said joint.

3. A road joint former for embedding in concrete and comprising a pre-formed compressible core, a plurality of spaced load transmission shields projecting through the core and including hollow means for anchoring the shields in the concrete on opposite sides of the core, and means for closing the ends of the hollow means at the outer end of the joint.

4. A road expansion joint for embedding in concrete and including in combination a pre-formed compressible core, a plurality of adjustable load transmitting shields projecting through the core and including hollow means for anchoring the projecting portions of the shields in the concrete on opposite sides of the core, means for closing the outer ends of the hollow means at the outer end of the joint, and void forming core plates positioned against the sides of the core and between the load transmission shields to provide voids between the core and the concrete on opposite sides of the joint.

5. A load transmitting device for use at the joints of concrete roadways and the like comprising hollow members having reinforcing means therein, said members respectively embedded in the roadway structure at opposite sides of the joints, with the members on opposite sides of the joints each formed with plate members adapted to be disposed transversely of the joints with the plate members positioned in slidable overlapping engagement with one another.

6. A load transmitting device for use at the joints of concrete roadways and the like comprising a pair of load transmitting shield sections embedded in the concrete roadway on opposite sides of the joint and of such shape to anchor the shield sections in the concrete, each of said shield sections including a straight plate member and an angled plate member, said plate members projecting from the concrete and directed transversely across the joint in overlapping sliding engagement with the plate members of the opposite shield section, and reinforcing means within the anchored portion of each of said shield sections.

7. The combination with adjacent concrete road slabs placed side by side and having a joint core therebetween, of a load transmitting means anchored in the road slabs on opposite sides of the joint core and projecting transversely through said core, said load transmitting means comprising a pair of slidably interfitting sections each consisting of a hollow bight portion connecting a pair of plates and enclosing a reinforcing means, said load transmitting sections arranged with one of the plates of each of said sections slidably projecting between the two plates of the opposite load transmission section.

8. The combination with adjacent concrete road slabs placed side by side and having a joint core therebetween, of a load transmitting means anchored in the road slabs on opposite sides of the joint core and projecting transversely through said core, said load transmitting means comprising a pair of slidably interfitting sections each consisting of a hollow bight portion connecting a pair of plates and enclosing a reinforcing means, said load transmitting sections arranged with one of the plates of each of said sections slidably projecting between the two plates of the opposite load transmission section, and the other plate of each load transmission section having a flange integrally formed thereon and embedded in the joint core.

9. The combination with adjacent concrete road slabs, of a compressible core separating the concrete slabs, sealing and load transmitting shields projecting across the upper and lower portions of the core to seal the main portion of the joint between said load transmitting shields, each of said load transmitting shields comprising a pair of curved interfitting sections secured to opposite sides of the core and formed with anchor means for anchoring the interfitting sections in opposite slabs and forming a concave shield across the lower portion of the joint and a convex shield across the upper portion of the joint.

10. The combination with adjacent concrete road slabs, of an expansion joint therebetween comprising a plurality of compressible filler boards of thin construction, a concave lower load transmitting shield projecting between two of the lower filler boards, a convex load transmitting shield projecting between two of the upper boards, said shields providing seals at the lower and upper portions of the main body of the joint, each of said shields comprising curved interfitting sections formed with hollow anchoring means embedded in opposite concrete slabs and filled with reinforcing means.

11. A load transmission expansion joint forming mechanism comprising core members separated by load transmitting devices and shields constructed of interfitting adjustable sections each comprising a straight plate, an angled plate and a split sleeve integrally connecting said plates and enclosing a reinforcing means.

12. A load transmission expansion joint form-

ing mechanism comprising core members separated by load transmitting devices constructed of interfitting unitary sections each section comprising a straight plate, an angled plate and a bight portion integrally connecting said plates.

13. In a concrete construction, a load transmission device comprising reversed slidably interfitting sections each section including a pair of plates integrally connected by a bight portion, with a plate of one section slidably projecting between and in frictional contact with both of the plates of the other section.

14. In a concrete construction, a load transmission device comprising core members separated by reversed slidably interfitting sections each section including an angled plate secured to one of the core members and a straight plate integrally connected to the angled plate by a bight portion and projecting transversely between the core members into the bight portion of the other section.

15. The combination with adjacent road slabs placed side by side and having a joint core therebetween, of a load transmitting means anchored in the road slabs on opposite sides of the joint core and projecting through said core, said load transmitting means comprising a pair of slidably interfitting sections each consisting of a split bight portion connecting a pair of plates, said sections arranged with one of the plates thereof slidably projecting between the two plates of the opposite section, and the other plate of each section secured to the core.

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