United States Patent [19]

Koester

[11] **3,722,379**

[45] **Mar. 27, 1973**

[54] **METHOD OF CONSTRUCTING AN EXPANSION GAP DEVICE AND LOST CASING FOR SUCH EXPANSION GAP**

[75] Inventor: **Waldemar Koester**, Forsbach, Germany

[73] Assignee: **Friedrich Mauer Soehne**, Munich, Germany

[22] Filed: **Mar. 10, 1971**

[21] Appl. No.: **122,788**

[30] **Foreign Application Priority Data**

Sept. 19, 1970 Germany.....P 20 46 400.0

[52] **U.S. Cl**.....**404/68**

[51] **Int. Cl**.....**E01c 11/10**

[58] **Field of Search**.....94/18, 22, 51

[56] **References Cited**

UNITED STATES PATENTS

3,474,589	10/1969	Cheatwood	94/18 X
3,447,430	6/1969	Gausepohl	94/18
2,041,210	5/1936	Robertson	94/18
2,246,903	6/1941	Spears	94/18
3,172,237	3/1965	Bradley	94/18 X

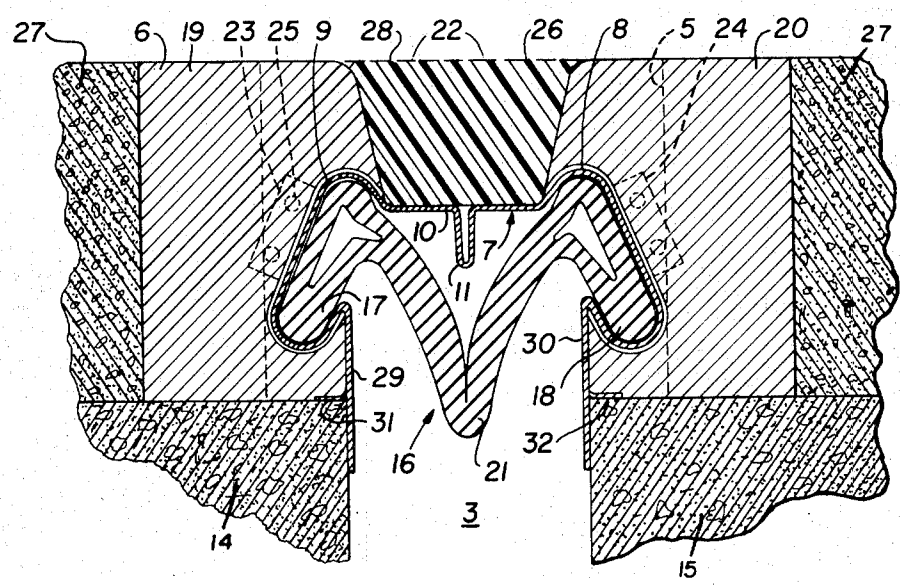
Primary Examiner—Nile D. Byers, Jr.

Attorney—Wolfgang G. Fasse

[57] **ABSTRACT**

The present invention relates to a method of constructing an expansion gap between two structural members such as concrete slabs in roads or on bridges. First the concrete slabs are formed with a gap between two adjacent slabs whereupon a surface layer is applied to the slabs to cover the slabs as well as the gap. Thereafter, a recess is formed in the surface layer above the gap but wider than the gap. A lost casing is then inserted into the recess and gap and the space laterally adjacent to the lost casing is filled with a synthetic resin concrete. When the concrete is set, a cross portion of the lost casing which bridges the gap is removed, for example by sawing. An elastic sealing body or strip is inserted either as a unit with the lost casing or it is snapped into position, after said cross portion has been removed, in recesses formed by said lost casing in the synthetic resin concrete. The lost casing is a downwardly open profile with shaped side members for forming said recesses and interconnected by said cross portion.

24 Claims, 11 Drawing Figures



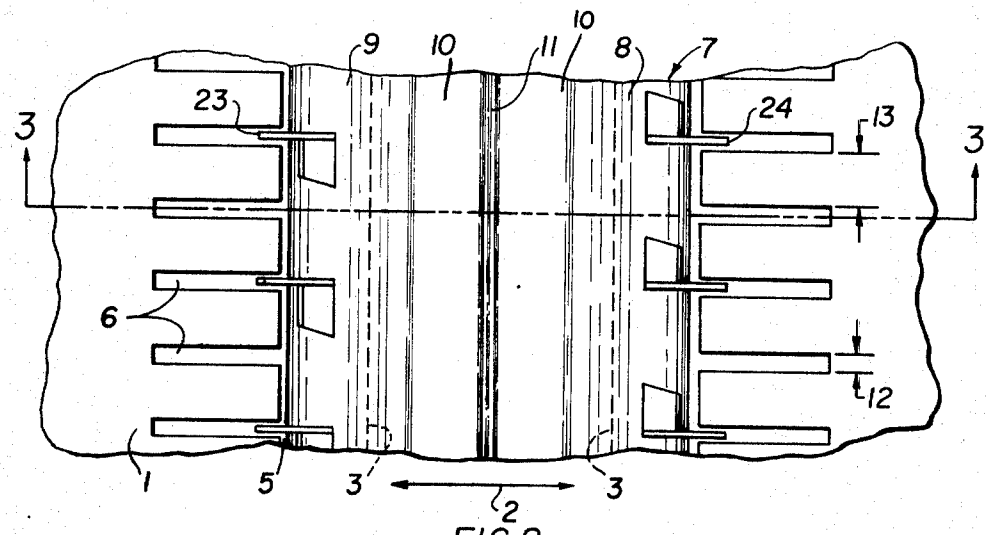


FIG. 2

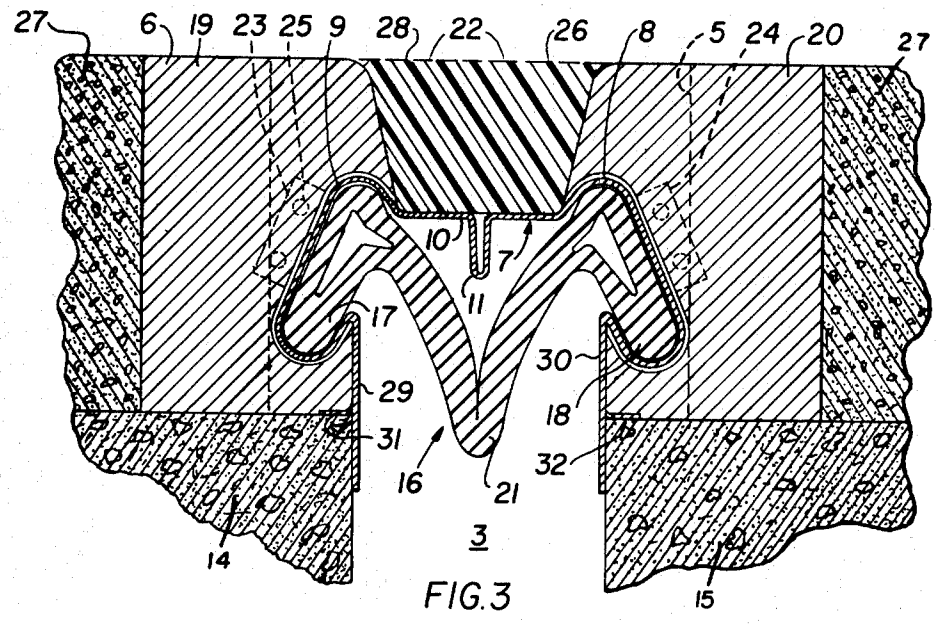


FIG. 3

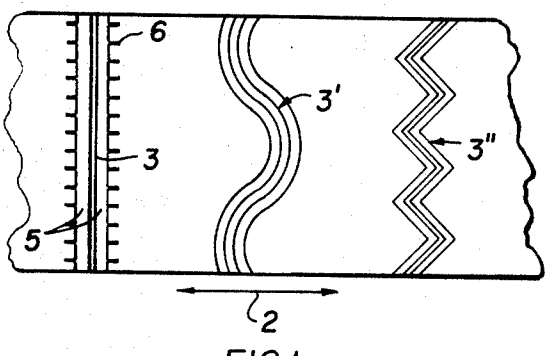


FIG. 1

INVENTOR
WALDAMAR KÖSTER

BY W. G. Fasse

ATTORNEY

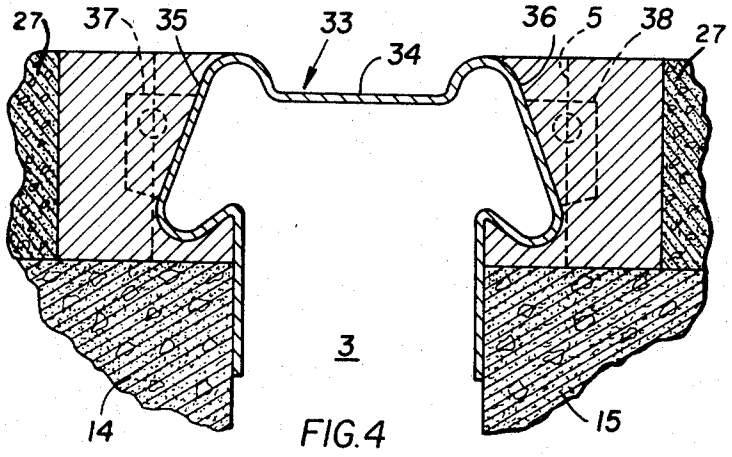


FIG. 4

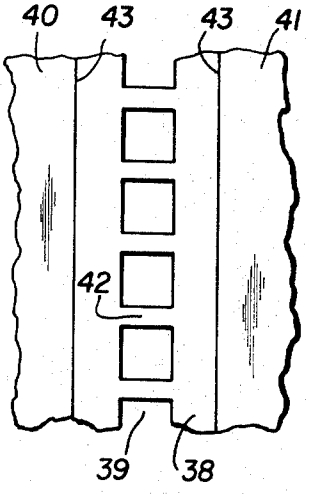


FIG. 5

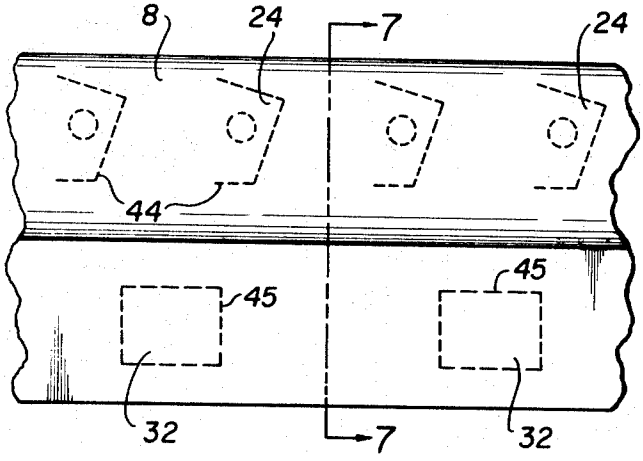


FIG. 6

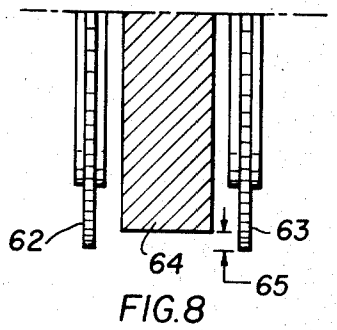


FIG. 8

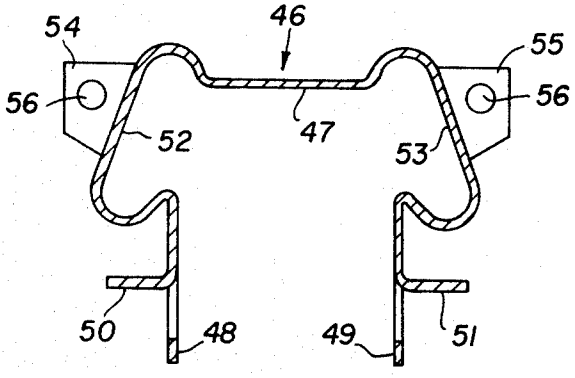


FIG. 7

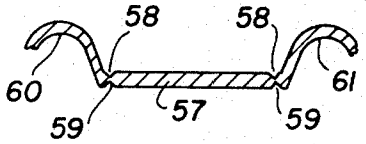


FIG. 9

INVENTOR
WALDAMAR KÖSTER

BY G. G. Fasse

ATTORNEY

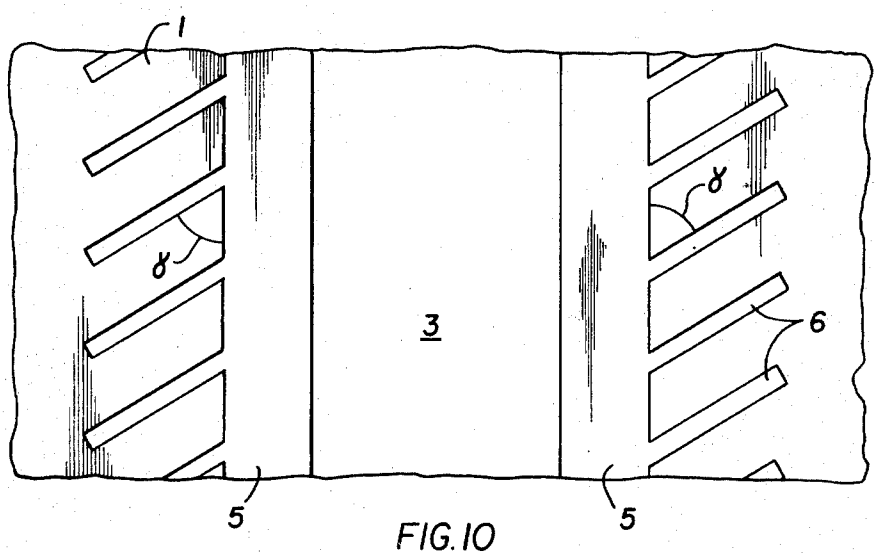


FIG. 10

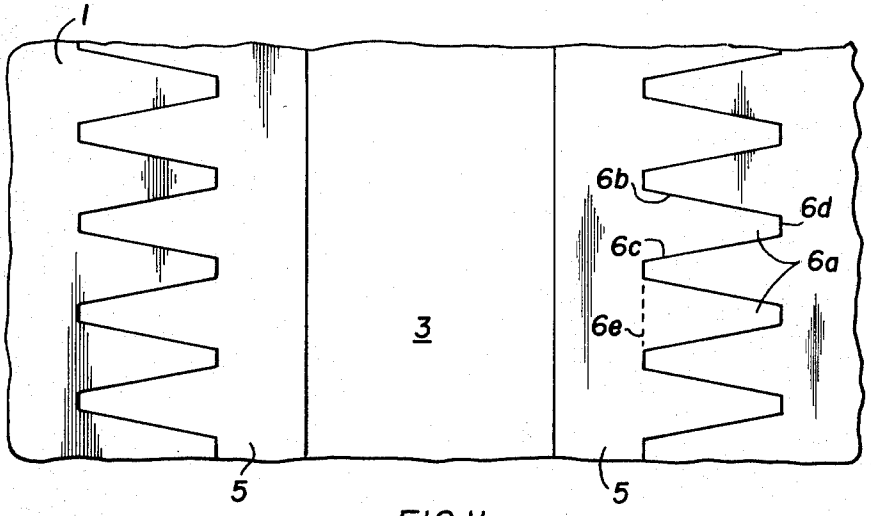


FIG. 11

INVENTOR
WALDAMAR KÖSTER

BY W. G. Fasse

ATTORNEY

METHOD OF CONSTRUCTING AN EXPANSION GAP DEVICE AND LOST CASING FOR SUCH EXPANSION GAP

BACKGROUND OF THE INVENTION

The present invention relates to a method for producing an expansion gap sealing device for roads, bridges, parking facilities or the like, wherein an elastic sealing body, such as a sealing strip which interconnects the structural members forming the gap in the road or the like is secured along both of its sides to the layer forming the road surface.

The invention relates also to a casing having side legs interconnected by a removable cross portion and formed as a hollow profile channel member for use in performing the present method. Since the side legs remain permanently installed in the gap, the casing will be referred to as a lost or partially lost casing.

According to a conventional method it is known to cut strips out of a road surface layer in the area above the gap between the underlying structural members. The cut out strips are removed and the space thus provided is then filled with an epoxy resin. According to the known method a respective casing or sheathing is inserted into the gap prior to the pouring of the epoxy resin. The sheathing is removed and thereafter an elastic sealing profile or strip bridging the gap in the roadbed, is inserted.

In order to perform the known method, in which the elastic sealing strip or profile is inserted into recesses in the edges of the structural members which form the gap, it is necessary that said recesses are constructed with regard to their form in such a manner that it is possible to remove the casing from the gap and from said recesses after the epoxy resin has set or hardened. Accordingly, this method for producing expansion gap bridging devices imposes a substantial limitation on the shapes for said recesses which otherwise might be desirable or reasonable. The casings employed in present day practice are usually of multi-sectional construction, whereby one section forms the upper region of the gap, whereas the remaining sections form said recesses. Thus, the casing sections forming the recesses can be removed after the casing section filling the gap proper has been removed, whereby the casing sections forming the recesses are pulled upwardly through the gap.

It is just this multi-sectional construction of the casing which requires additional devices for properly arranging and locating the several sections of the casing prior to casting the concrete in order to assure that all sections of the casing take up the desired position relative to each other. Another disadvantage of this type of securing the casing is seen in that the casing cannot follow the movements of the edges of the structural members which form the expansion gap after the concrete has set. Thus, temperature changes which may occur prior to the removal or withdrawal of the known casing cause the danger that the movement of the gap edges imposes on the respective concrete portions immediately adjacent to the casing forces which under unfavorable conditions may cause a crumbling of the concrete or even its destruction.

U.S. Pat. No. 3,276,335 discloses in connection with the construction of expansion gap bridging devices used in concrete roads, a lost casing comprising essentially a hollow box profile which is open at its lower side and which is adapted to receive the elastic sealing profile or strip. The casing is made of sheet metal. In this connection it should be noted, that a so called "lost casing" comprises casings which remain in position in the expansion gap even after the insertion of the elastic sealing strip. The box profile or casing comprises at its open lower side extensions which are formed as anchoring means which simultaneously form the wall of the gap after the lost casing has been inserted. This known lost casing is mounted into its proper position by pressing it into the still unset concrete.

The just described type of lost casing has the drawback, especially when used for constructing an expansion gap in concrete roads or runways, that the concrete edges which border on or contact the casing adjacent to the road surface crumbled rather quickly, as a result of which the size of the gap is undesirably increased. Such size increase of the gap loosens the casing and there is a danger that the elastic sealing strip or body located between the casing sections or members may be damaged. Moreover, the known casing is not suitable for transmitting larger forces between the gap edges because the casing, due to its box type shape or construction, is not well anchored in the gap edges.

Another known so called lost casing for constructing an expansion gap sealing or bridging device for concrete roads is described in U.S. Pat. No. 3,455,215. This known lost casing comprises on each side a back taper relative to the concrete of the gap edge. However, this back taper forms a hollow space inside the casing which is not filled by the sealing strip. The sealing strip which is pressed into the inner space of this known casing under a biasing force is retained in its position substantially by its own elasticity so that the danger is not completely avoided that the sealing strip is torn out or that it simply moves out of its proper position, especially when the expansion gap is in its expanded condition.

OBJECTS OF THE INVENTION

In view of the foregoing the invention aims at achieving the following objects, singly or in combination:

to overcome the above outlined drawbacks of the prior art;

to provide a method for constructing an expansion gap sealing device which is especially economical;

to provide a method for constructing a sealing gap device which takes into consideration the special conditions prevailing in the construction of bridges, roads, parking facilities, runways and the like;

to avoid interrupting the application of a top surface on concrete slabs forming a road so that said surface may be applied in a single uninterrupted pouring;

to provide a method which permits placing a lost casing into its proper position by filling the space around it with a synthetic resin concrete which has the advantageous characteristic that it bonds itself intimately to different materials, namely the material of the top layer forming the road surface which may be an asphalt or bituminous compound, the underlying concrete slabs, and the sheet metal of the lost casing;

to assure a precise and easy locating as well as securing of the sealing strip between the edges of the gap;

to make it possible that the lost casing as well as the sealing strip may be mounted simultaneously into the proper position in the gap;

to employ a lost casing and sealing strip which form a preassembled sealing unit;

to provide a method which facilitates the anchoring of the elastic sealing strip in the gap edges to assure its sufficient stability as well as a good sealing;

to shape the lost casing so that it provides a seat for an easily removable form body, whereby the lost casing and the sealing strip may be placed at any desirable depth inside the gap;

to provide a lost casing which will accommodate expansions and contractions of the gap forming edges, even prior to the insertion of the sealing strip;

to provide a lost casing which is especially suitable for use in performing the present method; and

to provide a lost casing which may be easily adapted to different gap shapes, for example, corrugated or zig-zag gap shapes.

SUMMARY OF THE INVENTION

According to the invention there is provided a method of constructing an expansion gap sealing device, wherein first a concrete layer is formed having an expansion gap therein. Thereafter, a surface layer is applied to the concrete layer in a single, uninterrupted pouring, whereby the surface layer forms the road surface proper. In the next step, a strip of the surface layer is cut out above the gap to form a recess in the road surface above the gap, whereby the recess extends in parallel to the gap and is wider than the gap itself. Comb like slots are then provided in the layer adjacent to the recess, whereby the slots become part of the recess. Thereafter, a lost casing adapted to receive a sealing strip or body is inserted into the gap and the lateral space adjacent to the lost casing is filled, for example by pouring, with a synthetic resin concrete. After the concrete has set, a cross portion of said lost casing which faces upwardly and which interconnects the side portions of the casing, is removed as far as it bridges the gap.

According to the invention there is further provided a lost casing, especially for use in performing the above method, which comprises a downwardly open hollow profile including side members interconnected by a cross portion which bridges the gap, said side members having a shape corresponding to the shape of the sealing strip or body so that bulging ridges of the sealing strip may, for example, be snapped into said side members to hold the sealing strip in position in the gap.

In order that the invention may be clearly understood it will now be described by way of example, with reference to the accompanying drawings, wherein:

FIG. 1 is a top view onto a portion of a road surface and illustrating different shapes of expansion gaps;

FIG. 2 is a partial plan view of the straight joint of FIG. 1 but on an enlarged scale;

FIG. 3 is a sectional view perpendicularly through the gap as indicated by the sectional line 3—3 in FIG. 2;

FIG. 4 is a sectional view similar to that of FIG. 3 but illustrating a different embodiment of the present invention;

FIG. 5 is a top view onto a portion of a lost casing embodiment according to the invention;

FIG. 6 is a side view of a portion of a lost casing according to the present invention;

FIG. 7 is a sectional view through FIG. 6 along sectional line 7—7;

FIG. 8 is a partial diagrammatic view of a tool employed for removing the cross portion of the present lost casing;

FIG. 9 is a partial sectional view similar to that of FIG. 7 illustrating tear notches along the edges of the cross portion of the present lost casing; and

FIGS. 10 and 11 are views similar to that of FIG. 2 but illustrating lateral gap slots of different inclination or shape.

DESCRIPTION OF EXAMPLE EMBODIMENTS

FIG. 1 shows a top view onto a road surface 1. The longitudinal extension of the road is indicated by the double arrow 2. A straight expansion gap 3 is shown at the left hand side of FIG. 1. The dashed line 4 surrounds approximately the portion which is shown on an enlarged scale in FIG. 2. Above the gap 3 there is cut a recess 5 into the road surface 1 as will be explained in more detail below. After cutting or otherwise removing the material from the recess 5, slots 6 extending preferably but not necessarily in the longitudinal direction of the road surface are cut into the road surface to form extensions of the recess 5. The slots 6 are shown in more detail in FIG. 2.

FIG. 1 further illustrates a corrugated shape of an expansion gap 3' and a zig-zag shape of another expansion gap 3''.

Referring to FIG. 2, the gap 3 has inserted therein a lost casing 7 which has side members 8 and 9 as well as a center portion 10. The center portion includes a downwardly extending fold 11 more clearly seen in FIG. 3.

Adjacent to the recess 5 in the top surface 1 and as extensions of such recess 5 there are provided according to the invention slots 6 which may have a width 12 of, for example, about 5 to 10 mm. The spacing 13 between adjacent slots 6 may, for example, be approximately 10 cm. The depth of the slots 6, that is their dimension downwardly into the road, will usually correspond to the thickness of the surface layer 1 as best seen in FIG. 3. However, the slots may also extend down into the concrete slabs 14 and 15 shown in FIG. 3. For example, the slots 6 may extend into the concrete slabs 14 and 15 for several millimeters. The slots are produced, for example, by cutting tools such as a saw having a circular blade with the required dimension for the width and depth of the slots 6.

As seen in FIG. 3 the expansion gap 3 between the concrete slabs 14 and 15 is closed by sealing means such as a sealing body or sealing strip 16 made of rubber elastic material, for example, in the form of foam rubber or in the form of a rubber profile as shown. The sealing strip 16 comprises lateral wings 17 and 18 which snap or grip into the shaped side members 8 and 9 of the lost casing. The shaped side members 8 and 9 form respective back tapers in the synthetic resin concrete which is poured laterally into the recess 5 in the top surface layer 1 for securing and locating the lost casing 7. Thus, the synthetic resin concrete bodies 19 and 20 form the edges and upper side wall of the expansion gap. The side members 8 and 9 of the present expansion gap are shaped so as to

snugly receive the lateral wings **17** and **18** of the sealing strip **16**. On the other hand, these side members **8** and **9** are securely held in said synthetic resin concrete bodies **19** and **20** the lateral extension of which is defined by the recess **5** in the surface layer **1** of the road.

After the synthetic resin concrete bodies **19** and **20** have set or hardened, the cross portion **10** along with the center fold **11** of the lost casing is severed along the edges **22** where the center portion **10** is connected to the side members **8** and **9**, whereby these side members remain in position in the synthetic resin concrete bodies **19** and **20**.

The sealing strip **16** comprises a center portion **21** which is folded downwardly as shown in FIG. **3** when the gap is relatively narrow during expansion of the concrete slabs **14** and **15**.

Preferably, the side members **8** and **9** of the lost casing are provided with laterally and outwardly extending anchoring means **23** and **24** shown in dashed outlines in FIG. **3** and in full outlines in FIG. **7**. The anchoring means **23**, **24** may be provided with apertures **25** which serve for assuring a solid monolithic interconnection between the anchoring means and the synthetic resin concrete bodies **19** and **20**.

The downwardly extending fold **11** of the cross portion **10** of the lost casing permits a widening of the cross portion **10** in response to a widening of the gap **3** prior to the severing of said cross portion **10** from the remainder of the lost casing. This has the advantage that the forces which might be effective during the setting of the synthetic resin concrete bodies **19** and **20** are rather low.

The present method is performed by first placing the concrete slabs **14** and **15** with the gap **3** therebetween, whereupon the surface layer **1** is applied over the concrete slabs and over the gap. Thereafter the recess **5** is cut into the surface layer so that it is wider than the gap **3**. Then the slots **6** are cut so that they become extensions of the recess **5**. Thereafter the lost casing **7** is inserted into the gap **3** and into the recess **5**, whereupon the synthetic resin concrete bodies **19** and **20** are poured so as to secure the lost casing in its proper position. The sealing strip **16** may be secured into the shaped side members of the lost casing either prior to the insertion of the lost casing or after such insertion. In any event, the cross portion **10** of the lost casing will be severed after the synthetic resin concrete bodies **19** and **20** have hardened. It is an advantage of the just described method according to the invention that the surface layer **1** of the road may be produced without any interruption of the advance of the machine which is used for making the surface layer **1**. Another advantage of the invention is seen in that due to the use of said lost casing **7** the entire expansion gap bridging device may be mounted simply as well as quickly even for especially wide expansion gaps which cannot be sealed without the insertion of elastic sealing means such as sealing strips or bodies of a rubber type material. In this connection it should be noted that the positioning and securing of the lost casing **7** by means of said synthetic resin concrete bodies **19** and **20** is especially advantageous because this material has the characteristic that it can form an intimate bond with several kinds of material, more specifically with the asphalt of the surface layer forming the road surface, with the concrete slabs **14** and **15** and simultaneously with the material of the lost casing which may, for example, be made of sheet metal. This intimate bond eliminates the danger of damaging or crumbling of the synthetic resin concrete bodies, especially near the surface because this material has a large toughness and elasticity.

Another advantage of the present invention is seen in its flexibility in that the sealing strip **16** may be mounted either simultaneously or subsequently to the mounting of the lost casing. In connection with the simultaneous mounting, the sealing **16** and the lost casing **7** are pre-assembled as a unit which is then mounted as such at the construction site, whereby the unit is simply placed into the gap and fixed into position by the pouring of said synthetic resin concrete.

The use of the lost casing provides the possibility of constructing the anchoring means **23** and **24** for the elastic sealing strip **16** in such a manner that a sufficient strength as well as a good sealing is achieved between the sealing strip proper and the edges of the gap. Thus, it is possible to use, without any difficulty, sealing means such as sealing strip **16** which has said lateral wings **17** and **18** which grip into the gap edges and which may be shaped solely with regard to considerations of suitability and with regard to the special wear and tear to which the sealing strip is subject. Even the provision of the back taper of the side members **8** and **9** which assures an especially secure seating of the sealing strip does not cause any difficulties since the back taper is provided by the shape of the lost casing itself.

The invention is suitable for accommodating a wide range of gap depths because the lost casing may be located at any desirable depth due to the fact that the invention provides a form body **26** which will assure the formation of the gap above the lost casing **7**. The form body **26** is simply seated on top of the cross portion **10** of the lost casing **7**. The form body **26** will be employed especially where the top layer **27** is not flush with the surface of the sealing strip, that is, where the sealing strip is located with its center portion surface at a given depth between the synthetic resin concrete bodies **19** and **20** as shown in FIG. **3**. The form body **26** is placed in position atop the cross portion **10** prior to the pouring of the synthetic resin concrete bodies **19** and **20**. The form body **26** will be dimensioned so that its top surface **28** will be flush with the top layer **27** of the road or runway. Thus, it is possible to locate the sealing strip **16** at any desirable depth below the road surface proper.

The locating of the lost casing **7** at the desired depth is facilitated according to the invention by side walls **29** and **30** which extend out of the side members **8** and **9** and which point downwardly and substantially in parallel with the edges of the concrete slabs **14** and **15**. Between the side walls **29** and **30** on the one hand and the respective edges of the concrete slabs **14** and **15** there may be inserted sealing means, for example, of foam material (not shown). Such sealing means may be inserted alongside the side walls facing the concrete slabs and/or the synthetic resin concrete bodies **19** and **20**. The proper positioning of the lost casing **7** is further facilitated by the supporting lugs **31** and **32** which are provided in the side walls **29** and **30** as is more clearly seen in FIG. **7**. These supporting lugs extend laterally outwardly of the side walls **29**, **30** so that the lost casing

may rest with these lugs **31, 32** on the upper horizontal wall or edge of the concrete slabs **14, 15**.

Referring to FIG. **4** there is shown a modified embodiment of the present invention, though, the essential members correspond to those in FIG. **1** and are thus provided with the same reference numerals. The concrete slabs **14** and **15** are again covered by a surface layer **1** having a recess **5** therein above the gap **3**. The lost casing **33** has a cross portion **34** which does not have a downwardly extending center fold as shown in FIG. **3**. Further, the lost casing **33** does not comprise any supporting lugs which are unnecessary where the lower hight of the surface layer **1** does not call for positioning the lost casing at any particular depth within the gap **3**. Nevertheless, the embodiment of FIG. **4** constitutes a complete solution of the above outlined problems solved by the present invention. If desired, the center fold for the lost casing may be used even in the embodiment of FIG. **4**. However, where it is not used it may be desirable to construct the expansion gap sealing or bridging device at such a time that weather temperature changes are avoided and thus undesirable change in the gap width is prevented during setting of the synthetic resin concrete. Further, it is desirable to sever the cross portion **34** immediately after the synthetic resin bodies **19** and **20** have hardened. The side members **35** and **36** correspond in shape and purpose substantially to those of FIG. **3**. However, the anchoring means **37, 38** have a slightly different shape.

Just as in the embodiment of FIG. **3**, the sealing strip **16** may be inserted into a lost casing according to FIG. **3** simultaneously with the lost casing **33** or after the cross portion **34** has been severed.

In both instances the lost casing may be formed, for example, from sheet metal in a cold forming process or it may be formed from a thermoplastic material such as a thermoplastic polymer which is shaped in its heated condition into the final form of the lost casing.

Referring to FIG. **5** there is shown a top view of a modified lost casing according to the invention having a cross portion **38** which is provided with a longitudinal slot **39** approximately intermediate its side members **40** and **41**. The slot **39** is interrupted by relatively narrow cross pieces or lands **42** which hold the two mirror symmetrical portions of the lost casing together prior to severing the cross portion **38** along the edges **43** from the side members **40** and **41**.

FIG. **6** illustrates a side view of a lost casing as shown in section in FIG. **3**. The anchoring members **24** in the side member **8** are indicated by dashed lines **44** in order to show that in this stage these anchoring members are still in the plane of the side members **8**, that is, prior to pushing the anchoring members **24** laterally outwardly. Similarly, the supporting lugs **32** are illustrated by dashed lines **45**. The lines **44** and **45** represent indentations or grooves formed for example, by stamping prior to pushing the anchoring members and the supporting lugs outwardly. The anchoring members as well as the supporting lugs may also be secured to the sides of the lost casings, for example, by welding or riveting.

FIG. **7** illustrates a sectional view through a lost casing according to the invention which is a combination of the features of the casings according to FIGS. **3** and **4**. The casing **46** has a cross portion **47** without a fold as in FIG. **4**. However, the downwardly extending side walls **48** and **49** are provided with supporting lugs **50** and **51** bent laterally outwardly as shown in dashed lines in FIG. **3** at **31** and **32**. Moreover, the side members **52** and **53** are provided with anchoring members **54, 55** as in FIG. **4**. Each anchoring member includes apertures **56** which strengthen the anchoring.

In the embodiment of FIG. **9**, the cross portion **57** is provided with notches **58, 59** which reduce the thickness of the cross portion **57** along the edges between the cross portion and the side members **60, 61**. This embodiment has the advantage that the cross portion **57** may be severed after the synthetic resin concrete has hardened simply by tearing it out along said notches **58** and **59**. Although a double notch has been shown, the same purpose can be achieved by a single notch provided along each edge.

Another way of severing the cross portion from the remainder of the lost casing is illustrated in a schematic manner in FIG. **8** which shows only the lower half of a saw comprising circular saw blades **62** and **63** and a guide member **64** adapted to ride along the cross portion of the lost casing just slightly ahead of the advancing saw blades. The lower tips of the saw blades extend downwardly somewhat more than the lower end of the guide member which, for example, may be a skid. In this manner the spacing **65** may be adjusted, for example, by raising or lowering the skid **64** in a well known manner relative to the saw blades, whereby the saw blades are prevented from entering into the space below the cross portion more than necessary for merely severing the cross portion. This feature is particularly advantageous in connection with the embodiment where the sealing strip **16** and the lost casing are formed as a pre-assembled unit because in this manner damage to the sealing strip by the saw blades is prevented.

With regard to the lost casing according to the invention it should be noted that the side members may have any desirable shape as required by shapes of the sealing strip or body. Thus, the lost casing may be formed to accommodate sealing strips having, for example, rectangular or quadratic cross sectional shapes, whereby lateral, upper, and/or lower bulges may be formed along said rectangular shapes.

With regard to the downwardly extending fold **11** and the lands **42** in the lost casing it should be mentioned that these features accommodate gap expansions or contractions, even after the resin concrete has already hardened and prior to the severing of the respective cross piece. This has the advantage that high tensile or compressive forces in the anchoring means of the casing are avoided. This is desirable since it prevents destruction of the casing. Another advantage of the downwardly extending side walls, such as **48** and **49** of the casing is seen in that these side walls properly guide the casing as it is inserted so that it may take up the desired proper position. It should also be noted that the top surface of the cross portion advantageously serves as a seat for a form body **26**.

Incidentally, synthetic resin concretes are well known in the art and comprise, for example, epoxy-resin or polyester-resin compounds with an admixture of sand.

Referring to FIG. **10**, the view is similar to that of FIG. **2**, except that the slots **6'** are enclined by the angle

γ relative to the length of the gap. In practice the angle γ will be preferably about 60°, whereby the side walls 6'' of each gap 6' have the same inclination and thus extend in parallel to each other.

FIG. 11 illustrates slots 6*a* having side walls 6*b* and 6*c* inclined in different directions, whereby a horizontal section through a slot will have the shape of a trapeze, two sides of which run, for example, in parallel to the length of the gap. In this embodiment the shorter side 6*d* of the two parallel sides 6*d* and 6*e* should have a length corresponding to about 0.33 to 0.50 times the length of the longer side 6*e*.

The gap formation as illustrated in FIGS. 10 and 11 has, due to the inclined slot side walls, the advantage of a better resistance against wear and tear caused by the traffic on the road. The forces applied to the gap structure are divided into components due to said inclination, whereby the force components are less effective as they are smaller than the total forces. In addition the inclination provides a larger surface perpendicularly to the direction in which the traffic forces are effective.

Although specific embodiments have been described, it should be noted, that it is intended to cover all modification and equivalents within the scope of the appended claims.

What I claim is:

1. A method for constructing an expansion gap sealing device located between adjacent structural members with elastic sealing means inserted in the completed gap, comprising the steps of:
   a. placing the structural members adjacent to each other to form the expansion gap therebetween,
   b. covering said structural members including the gap therebetween with a surface layer,
   c. removing out of said surface layer above said gap and in parallel to the gap, surface layer material to form a recess in the surface layer above the gap, said recess having a width larger than that of the gap,
   d. providing lateral slots adjacent to said recess so that the slots form extensions of the recess,
   e. securing in said gap a casing adapted to retain said elastic sealing means in the gap,
   f. filling said recess with its slots laterally and adjacent to said casing with synthetic resin concrete,
   g. setting said synthetic resin concrete, and
   h. removing a cross portion of said casing which bridges the gap.

2. The method according to claim 1, wherein said sealing means and the casing are pre-assembled as a unit and are thus inserted into the gap simultaneously prior to the removal of said cross portion.

3. The method according to claim 1, wherein said sealing means are inserted into said casing after said cross portion has been removed from the casing.

4. The method according to claim 1, comprising cutting said lateral slots so that they extend substantially perpendicularly to the longitudinal axis of the gap.

5. The method according to claim 1, comprising cutting said lateral slots so that they extend through the surface layer.

6. The method according to claim 1, comprising cutting said lateral slots so that they extend through the surface layer and into said concrete layer.

7. The method according to claim 1, further comprising the intermediate step of placing, prior to said filling step, a form body on top of said casing, said form body having the shape of the gap above the casing and a top surface which extends substantially in the same plane as the top of said surface layer.

8. The method according to claim 1, wherein said removing of the gap bridging cross portion of the casing is performed by moving along the top of the casing, cutting means having two cutting members spaced from each other sufficiently to sever said bridging cross portion from remaining side members of the casing while simultaneously moving a guide member of said cutting means along said bridging cross portion, whereby the guide member is supported at least partially on said bridging cross portion ahead of the advancing cutting members.

9. The method according to claim 1, wherein said removing of the bridging cross portion of the casing is accomplished by severing said bridging cross portion form the remainder of the casing along notches which reduce the thickness of said bridging cross portion substantially adjacent to the remainder of said casing.

10. The method according to claim 1, comprising cutting said lateral slots so that the slots have side walls extending at an angle relative to the length of said gap.

11. The method according to claim 10, wherein said slots are cut so that said side walls of each slot extend in parallel to each other and at said angle relative to the length of said gap.

12. The method according to claim 10, wherein said slots are cut so that the two side walls of each slot are inclined in different directions.

13. In a casing for an expansion gap sealing device which casing remains at least partially in an expansion gap formed between edges of adjacent structural members, wherein a profiled right leg and a profiled left leg are arranged substantially mirror-symmetrically to each other, and wherein the legs are interconnected by removable gap bridging means extending longitudinally between the legs to form a channel member having an open side opposite said gap bridging means, said open side facing downwardly relative to the built-in position of the casing in said gap, the improvement comprising profiled recesses in said legs which recesses face each other for snapping into said recesses a respectively profiled sealing strip to be held and retained in said recesses, said gap bridging means further comprising expandable means extending in a longitudinal direction between the legs and stretchable in a direction perpendicularly to said longitudinal direction.

14. The casing according to claim 13, wherein said expandable means of the gap bridging means comprise a longitudinal, downwardly extending fold located substantially along the center line of said gap bridging means.

15. The casing according to claim 13, wherein said expandable means of the gap bridging means comprise a longitudinal slot located substantially along the center of said cross portion, and spaced narrow lands for bridging said longitudinal slot.

16. The casing according to claim 13, wherein said profiled right and left legs comprise downwardly extending side walls spaced from each other so as to extend in parallel to said edges of said structural members forming the gap.

17. The casing according to claim 16, wherein said downwardly extending walls of the right and left leg comprise punched out and bent out supporting lugs extending laterally out of said downwardly extending walls for supporting the casing on the edges of the structural members adjacent to the gap.

18. The casing according to claim 13, wherein said profiled right and left legs comprise punched out and bent out anchoring means extending laterally out of said legs.

19. The casing according to claim 13, wherein said gap bridging means is shaped as a seat for receiving a form body.

20. The casing according to claim 13, wherein said channel member has a corrugated shape relative to its length so as to fit into a correspondingly corrugated gap.

21. The casing according to claim 13, wherein said channel member has a zig-zag shape relative to its length so as to fit into a correspondingly zig-zag shaped gap.

22. The casing according to claim 13, wherein said channel member is made of sheet metal.

23. The casing according to claim 13, wherein said channel member is made of thermoplastic material.

24. The casing according to claim 13, further comprising means for facilitating the severing of said gap bridging means from said right and left leg, said means being located longitudinally between said gap bridging means and each of said legs.

* * * * *