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3,170,268

EXPANSION JOINT COVER STRUCTURE

Filed May 7, 1962

2 Sheets-Sheet 1

Fig. 1.

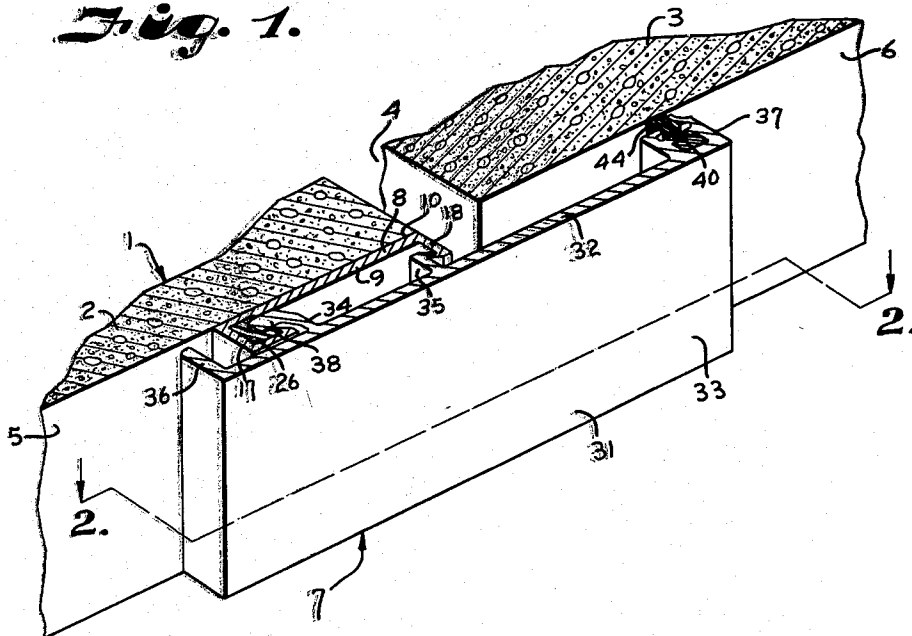


Fig. 2.

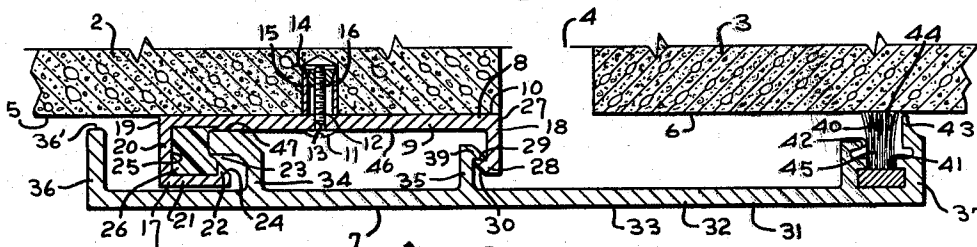
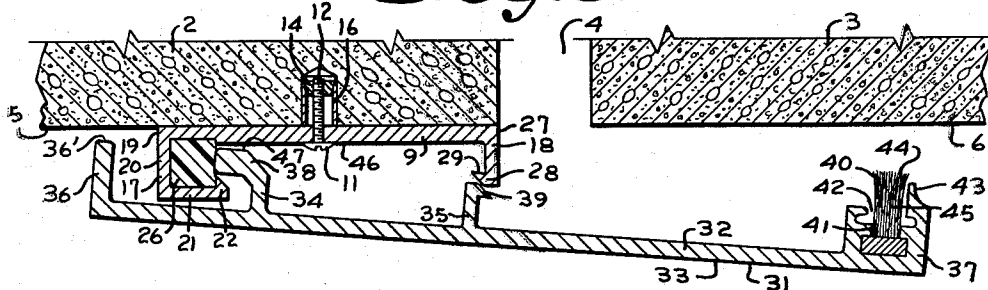


Fig. 3.



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2 Sheets-Sheet 2

Fig. 4.

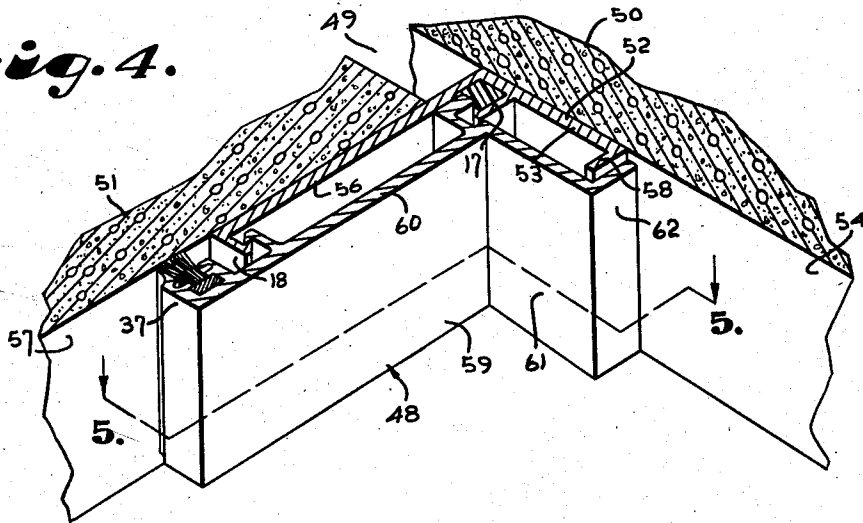


Fig. 5.

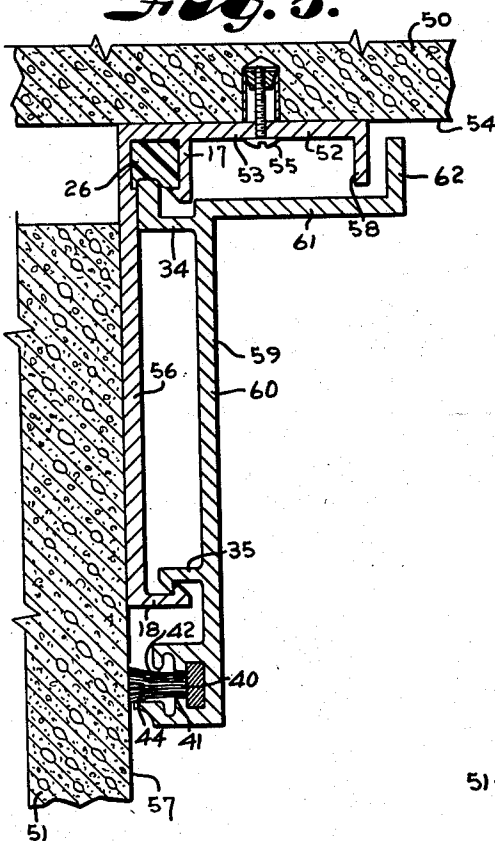
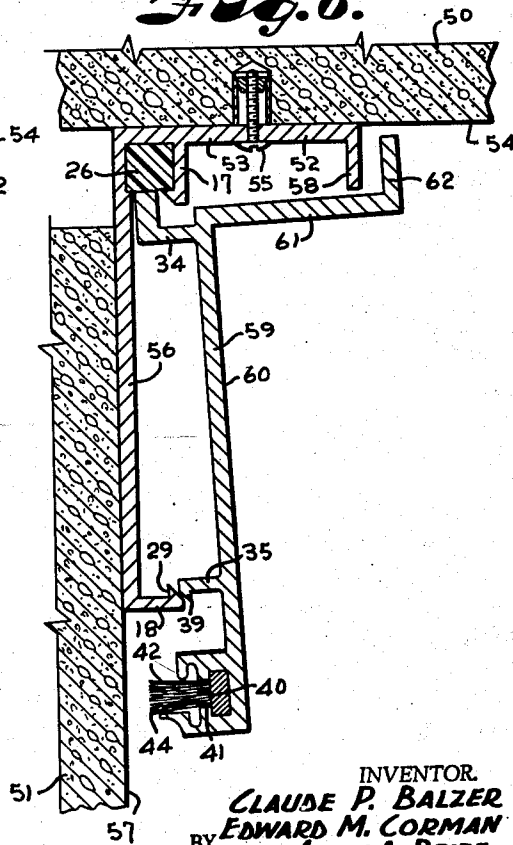


Fig. 6.



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EXPANSION JOINT COVER STRUCTURE

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This invention relates to building structures of the type having expansion joints in portions thereof such as in walls and/or ceilings, and more particularly to cover structures for such expansion joints.

It has been the practice in building structures having portions thereof of monolithic concrete, concrete blocks, bricks and the like, in order to prevent cracks in the structure due to expansion and contraction, to make the portions in sections with expansion joints to accommodate the expansion and contraction. Such joints have presented difficulties as they can be unsightly and provide problems in protecting the interior of the structures from atmospheric conditions such as snow, rain and the like. Attempts have been made to provide strips to cover the expansion joints, but those heretofore used have been difficult to use and install, have been unsightly both on the interior and exterior of the building and, in many instances, are inefficient in providing suitable protection. In some such structures, the covers are incorporated in the joint itself, providing difficulties in replacing and repairing the cover members.

The principal objects of the present invention are to provide an expansion joint cover structure adapted to cover expansion joints between sections of a wall and/or ceiling and eliminate the difficulties above-mentioned; to provide such an expansion joint cover structure adapted to cover an expansion joint between sections of a wall and/or ceiling having concrete, concrete blocks, brick or metal or combinations of them; to provide such a structure that includes a mounting member secured to a section of wall and/or ceiling adjacent the joint and a cover member mounted on said mounting member in covering relation thereto and having a portion extending in overlapping relation to the joint and the other section of wall at said joint; to provide such a structure wherein the mounting or base member and cover member have interengaging portions with means for resiliently retaining same in engagement for retaining the cover member on the base member; to provide such a structure wherein the cover member is snapped onto the base member and retained thereon without auxiliary fastening devices; to provide such a structure wherein the exposed surfaces have no visible fastening means; to provide such a structure that includes a seal member having resiliency at marginal portions of the cover for engagement with the surface of a wall section; and to provide such an expansion joint cover structure that is economical to manufacture, easily installed, convenient to repair or replace and which can be mounted exteriorly or interiorly after the building structure has been completed and which is decorative when installed.

Other objects and advantages of this invention will become apparent from the following description taken in connection with the accompanying drawings wherein are set forth by way of illustration and example certain embodiments of this invention.

FIG. 1 is a partial perspective view of an expansion joint cover structure embodying the features of the present invention in place on the interior of a building wall in covering relation to an expansion joint between two sections thereof.

FIG. 2 is a sectional view through the expansion joint

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cover structure and wall portions taken on the line 2-2, FIG. 1.

FIG. 3 is a sectional view through the expansion joint cover means similar to FIG. 2 with the cover and base members in partially assembled position as the cover member is moved into position on the base member.

FIG. 4 is a partial perspective view of a form of expansion joint cover structure in place on the interior of a building to cover an expansion joint between two sections of a wall arranged in angular relation.

FIG. 5 is a sectional view through the expansion joint cover structure, taken on the line 5-5, FIG. 4.

FIG. 6 is a sectional view through the expansion joint cover structure shown in FIG. 4 in partially assembled relation in position as the cover member is moved into position on the base member.

Referring more in detail to the drawings:

The reference numeral 1 generally designates a portion of a building structure having sections 2 and 3 separated by an expansion joint 4. The sections 2 and 3 may be wall or ceiling sections and may be of monolithic concrete, building block, brick, metal or combinations thereof or other suitable material. In the structure illustrated, the wall sections 2 and 3 have faces 5 and 6 respectively, and the expansion joint cover structure generally designated with the reference numeral 7 when mounted covers the expansion joint 4, as shown in FIGS. 1 to 3 inclusive. The expansion joint structure normally extends from floor to ceiling except when broken by a window or door or from wall to wall except when broken by other installations or fixtures.

The expansion joint structure includes a base member 8 preferably formed of metal in an elongated strip, as for example by aluminum extrusion. The base member includes a flat strip or plate portion 9 having a face 10 adapted to engage the face of a wall section, as for example the face 5 of the section 2, the base member preferably being secured to the section along the joint 4 by suitable fastening devices 11 spaced longitudinally along the plate 9. In the illustrated structure, the fastening devices 11 are in the form of bolts each having a shank 12 that extends through respective apertures 13 in the plate portion 9 and threadedly engaged in nuts 14 recessed in holes 15 in the wall section 2, the nut being anchored in said section when it is concrete by a suitable manner, as for example a bushing or other expansion member 16. The base plate portion 9 has outwardly projecting laterally spaced members 17 and 18 and, in the illustrated structure, the member 17 extends longitudinally of the strip portion 9 along an edge 19 and has a leg portion 20 extending outwardly from the base portion 8 and terminates in a leg portion 21 that extends toward the opposite side of the strip portion 9. An inwardly extending lip 22 is arranged on the free end of the leg 21, said lip terminating in spaced relation to the plate member 9 to provide an elongate entry opening 23. It is also preferred that the lip portion 22 have an inclined face 24 to facilitate entry of a cover portion into the opening 23, as later described. The base plate portion 9, legs 20 and 21 and lip 22 define a recess 25 having an access opening 23 and adapted to receive a resilient member 26. The member 18 is longitudinally of the plate portion 9 and extends outwardly from the edge 27 of the plate portion 9 and terminates in an inwardly extending portion or lip 28 forming a ledge 29 facing the plate portion 9. It is preferred that the lip portion 28 have its outer end surface inclined as at 30 to facilitate entry of cover portions, as later described. It is preferred that the members 17 and 18 be co-extensive with the plate portion 9 whereby the structure is adapted to be formed by extrusion of suitable metal such as aluminum, magnesium or the like;

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however, it is to be understood that the structure contemplates any suitable form of fabrication and that the members 17 and 18 may be interrupted along the length of the base member.

The expansion joint cover structure includes an outer or cover member 31 of suitable width to be engaged with the base member and have a portion overlapping the joint 4, as illustrated in FIG. 1. In the structure illustrated, the cover member 31 includes a substantially flat elongate plate or strip member 32 preferably presenting a smooth outer face 33. Extending inwardly from the plate portion 32 are laterally spaced longitudinally extending members 34 and 35 adapted to be positioned inwardly of the base member portions 17 and 18. The cover member also has inwardly extending flange-like members 36 and 37 that extend longitudinally of opposed edges of the plate portion 32. In the structure illustrated, the member 34 extends from the plate portion 32 oppositely from the face 33 thereof and has a laterally turned or outwardly extending flange or rib 38 adapted to extend through the opening 23 and engage the resilient member 26 whereby said resilient member urges the member 34 and the cover member 31 toward the member 18. The member 35 also extends from the plate portion 32 oppositely from the face 33 and is adapted to be positioned inwardly of the member 18 and terminates in a laterally extending portion 39 forming a ledge adapted to engage the ledge 29 to form an interengagement cooperating with the member 34 to retain the cover member on the base member. The flange or edge member 36 is spaced outwardly from the base member 17 to provide suitable clearance and has an inner edge portion 36' in spaced but close proximity to the surface 5 of the section 2 when in joint covering position. Suitable seal means 40 may be suitably mounted or carried by the cover member and slidably engage the wall sections. In the illustrated structure, the edge or flange member 37 has a channel 41 extending longitudinally thereof with a narrow opening 42 toward the wall section 3. Outwardly from the opening 42 the flange portion has an extension 43 that is adapted to be positioned in spaced relation but close proximity to the surface 6 of the wall section 3 when in joint covering position. A resilient seal member 40 is positioned in the channel 41 and has portions 44 extending through the opening 41 and adapted to engage the surface 6. In the illustrated structure, the seal member is in the form of an elongate body member 45 positioned in the channel 41 and the portion 44 is a thick pile extending through the opening and adapted to engage the surface 6 with some resiliency that would tend to urge the adjacent portion of the cover member outwardly from the wall section and thereby cooperate with the interengagement of the ledge portions 39 and 29 and the resilient member 26 in maintaining the cover member in position.

In assembling a structure constructed and illustrated as described, the base member 8 is preferably mounted on the face 5 of the section 2 with the member 18 extending along one side of the expansion joint 4, the base member being secured to the wall section by suitable fastening devices such as the bolts 11, it being understood that leaded holes or other suitable anchoring means may be used to provide secure and convenient mounting on the material of the wall section. The cover member 31 is then moved into overlying position relative to the base member with the member 34 thereof positioned as illustrated in FIG. 3 wherein the flange 38 engages the resilient member 26, the cover member being of such width that when assembled the flange portion 36 is arranged whereby the cover member covers the base member, the expansion joint and said flange portion 37 overlies the surface 6 of the wall section 3. The cover member 31 is then forced toward the member 17 of the base member to compress the resilient member 26 until the member 35 will pass inwardly of the member 18 whereby the cover member can be swung toward the wall sec-

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tions and engage the pile 44 with the surface 6 of the section 3. The cover member is then released whereby the pressure exerted by the resilient member 26 biases the cover member toward the member 18 to effect engagement of the ledges 29 and 39. In this position, the height of the member 17 from the surface 5 of the section 2 is such that the inner face 46 of the plate portion 9 substantially engages the surface 47 of the flange 38 to aid in positioning said cover member and co-operating with the resilient member 26, the pile 44 and the ledges 29 and 39 in retaining the cover member 7 in the position as illustrated in FIG. 1. The pile 44 provides a seal between the edge portion of the cover and the wall section 3 and it is to be understood that if desired the same type of seal could be applied to the flange member 36 to seal both sides of the cover and wall section joints. Also, other suitable seals such as rubber or resilient plastic, caulking or the like may be used to meet particular requirements and conditions of the installation.

In the form of the invention illustrated in FIGS. 4 to 6 inclusive, the expansion joint cover structure 48 is adapted for use in corners to cover the expansion joint 49 between sections 50 and 51 which can be either wall sections or ceiling sections wherein one section extends at a right angle to the other section with the expansion joint 49 therebetween. In this structure, the base member 52 has a plate portion 53 adapted to be mounted on a face 54 of the wall section 50 and secured thereto by suitable fastening devices such as a bolt 55. The base member also includes a plate portion 56 that extends therefrom and is adapted to lay across the face 57 of the wall section 51. This positions the base member portion 56 to properly cover the joint 49. The cover mounting portions on the base plate 56 are substantially the same as illustrated and described relative to the embodiment in FIGS. 1 to 3 inclusive, with the portion 17 adjacent the base plate portion 53 and forming a cavity containing the resilient member 26. The ledge-carrying member 18 extends longitudinally of the base member 52 at the opposite side thereof from the plate member 53 and extends outwardly of the plate portion 56 in the same direction or substantially parallel to the plate portion 53. It is preferred that the outer edge of the base plate member 53 have an outwardly extending flange 58 extending outwardly relative to the face 54 of the wall section 50. A cover member or outer member 59 is mounted on the base member 52 in substantially the same manner as in the embodiment illustrated in FIGS. 1 to 3 inclusive. The cover member 59 includes a plate portion 60 having inwardly extending members 34 and 35 adapted to engage the resilient member 26 and the ledge-carrying member 18 respectively to secure the cover plate to the base member. The cover plate or member has a plate portion 61 extending substantially at right angles to the portion 60 into overlying relation to the flange 58 and terminates in a flange portion 62 disposed outwardly from the flange 58 and extending toward the surface 54 of the wall section 50, said flange 62 terminating in spaced but close proximity to the surface 54, as illustrated in FIG. 5. Also, the plate portion 61 in assembled relation is in close proximity to the end edge of the flange 58. The plate portion 60 of the cover member extends beyond the member 35 and has an inwardly extending flange 37 which is substantially of the same construction as the flange member 37 in the structure illustrated in FIGS. 1 to 3 inclusive, it having the channel 41 and opening 42 mounting the seal member 40 with the resilient pile 44 or the like extending therefrom and resiliently slidably engaging the surface 57 of the wall section 51 to provide a seal between the cover plate member and the wall section.

It is to be understood that a similar seal could be arranged on the flange portion 62 of the cover member to seal both sides of the cover relative to the wall sections, if desired.

The assembly of the expansion joint cover member in

a corner joint, as illustrated in FIGS. 4 to 6 inclusive, is similar to that described relative to the structure illustrated in FIGS. 1 to 3 inclusive, the base member being suitably secured to the wall section 50 and then the cover member is moved to position same substantially as illustrated in FIG. 6, and then pressure is applied to compress the resilient member 26 whereby the ledge members can be engaged with the resilient member biasing the cover member and cooperating with the pile portion 44 to retain the ledge portions engaged and the cover member on the base member in a position substantially as illustrated in FIG. 3.

As will be readily evident, the expansion joint cover structures may be completely installed after the walls and ceiling of a building have been constructed, and that after the base member is installed the cover member can be quickly and easily applied with a snap-on action without auxiliary fasteners or tools and is characterized by an absence of visible fastening means extending through any of the external portions of the cover plate members. Also, the cover members can be easily removed for repairing or replacing by reversing the installation procedure, that is, by applying force to the cover member to compress the resilient members 26 sufficiently to release the interengagement of the ledges 29 and 39 and then said cover member can be bodily removed from the base member.

It is to be understood that while we have illustrated and described certain forms of our invention, it is not to be limited to the specific form or arrangement of parts herein described and shown except insofar as such limitations are included in the claims.

What we claim and desire to secure by Letters Patent is:

1. An expansion joint cover assembly for structural sections disposed in spaced relationship and defining an elongated joint therebetween, said assembly comprising,
 - (a) an elongated relatively rigid base member adapted to be mounted on the outer face of one of the structural sections adjacent the margin thereof,
 - (b) spaced longitudinally extending first and second member portions on said base member and projecting outwardly therefrom,
 - (c) one of said first and second member portions having an extension toward the other of said member portions and cooperating with the base member to define a longitudinally extending cavity,
 - (d) the second of said member portions having an extension toward the first member portion and defining a ledge facing the base member and spaced therefrom,
 - (e) an elongate resilient member positioned in said cavity between the first member extension and the base member and having a face exposed toward said second member portion,
 - (f) an elongated relatively rigid cover member overlying said base member and having a width extending laterally therebeyond to overlie the joint between said structural sections and a longitudinal segment of the other structural section in proximity to said joint,
 - (g) said cover member having a plurality of laterally spaced longitudinally extending member portions projecting toward said base member,
 - (h) a pair of said member portions on the cover member being positioned inwardly of said first and second member portions on the base member and having spacing for lateral movement relative thereto,
 - (i) one of said pair of member portions on the cover member having an extension extending into the cavity of the base member and engaging the resilient member therein whereby said resilient member urges said cover member toward the second member portion on the base member, and
 - (j) ledge means on the other of said pair of member

portions on the cover member to complementarily engage the ledge portion on the second member portion of the base member in interlocking relationship thereto in response to lateral movement of the cover member effected by the resilient member for cooperating therewith to retain the cover member on the base member.

2. An expansion joint cover assembly for structural sections disposed in spaced relationship and defining an elongated joint therebetween, said assembly comprising,
 - (a) an elongated relatively rigid base member adapted to be mounted on the outer face of one of the structural sections adjacent the margin thereof,
 - (b) spaced longitudinally extending first and second member portions on said base member and projecting outwardly therefrom,
 - (c) one of said first and second member portions having an extension toward the other of said member portions and cooperating with the base member to define a longitudinally extending cavity,
 - (d) an elongate resilient member positioned in said cavity between the first member extension and the base member and having a face exposed toward said second member portion,
 - (e) an elongated relatively rigid cover member overlying said base member and having a width extending laterally therebeyond to overlie the joint between said structural sections and a longitudinal segment of the other structural section in proximity to said joint,
 - (f) said cover member having a plurality of laterally spaced longitudinally extending member portions projecting toward said base member,
 - (g) a pair of said member portions on the cover member being positioned inwardly of said first and second member portions on the base member and having spacing for lateral movement relative thereto,
 - (h) one of said pair of member portions on the cover member having an extension extending into the cavity of the base member and engaging the resilient member therein whereby said resilient member urges said cover member toward the second member portions on the base member,
 - (i) means on the other of said pair of member portions on the cover member to complementarily engage the second member portion of the base member in interlocking relationship thereto in response to lateral movement of the cover member effected by the resilient member for cooperating therewith to retain the cover member on the base member,
 - (j) said cover member having a third projecting longitudinally extending member portion spaced transversely of the cover member from said pair of member portions thereon and adapted to overlie said longitudinal segment of the other of said structural sections,
 - (k) and resilient means mounted on said third projecting member portion on the cover member adapted to slidably overlie and engage said other structural section to form a seal between said structural section and the cover member.
3. An expansion joint cover assembly for structural sections disposed in spaced relationship and defining an elongated joint therebetween wherein said structural sections are disposed in perpendicular relationship, said assembly comprising,
 - (a) an elongated relatively rigid base member adapted to be mounted on the outer face of one of the structural sections adjacent the margin thereof,
 - (b) a longitudinally extending planar portion extending from said base member in overlying relation to the joint between the structural sections and a longitudinal segment of the other structural section in proximity to said joint,

- (c) an elongate resilient member carried by said base member adjacent said planar portion,
 - (d) a longitudinally extending latch member portion on said planar portion in transversely spaced relation to said base member,
 - (e) a cover member of generally transversely L-shaped configuration and having first and second planar elements,
 - (f) transversely spaced first and second member portions on the first planar element extending toward said base member,
 - (g) said first member portion on the cover member having a portion engaging the resilient member whereby said resilient member moves and urges said cover member toward the latch member portion on the planar portion of the base member,
 - (h) said second member portion on the first planar element of the cover member having means to complementarily and releasably engage the latch member on the planar portion of the base member in response to movement of the cover member toward said latch member and cooperating with the resilient member to releasably mount the cover member on said base member,
 - (i) said second planar element of the cover member being disposed in overlying relation to the base member,
 - (j) other member portions on the first and second planar elements of the cover member adjacent the longitudinal terminal edges thereof positioned outwardly of and in proximity to the adjacent longitudinal terminal edges of the base member and planar portion thereof, said other member portions extending toward said base member,
 - (k) and resilient seal means carried by one of said other extending member portions adjacent the terminal edges of the first and second planar elements of the cover member and adapted to resiliently and slidably overlie the adjacent structural section to form a seal between said cover member and the structural section.
4. An expansion joint cover assembly for structural sections disposed in spaced relationship and defining an elongated joint therebetween, said assembly comprising,
- (a) an elongated relatively rigid base member adapted to be mounted on the outer face of one of the structural sections adjacent the margin thereof,
 - (b) spaced longitudinally extending first and second member portions on said base member and projecting outwardly therefrom,
 - (c) an elongated relatively rigid cover member overlying said base member and having a width extending laterally therebeyond to overlie the joint between said structural sections and a longitudinal segment of the other structural section in proximity to said joint,
 - (d) said cover member having a plurality of laterally spaced longitudinally extending member portions projecting toward said base member,
 - (e) a pair of said member portions on the cover member being positioned with one adjacent said first member portion and the other adjacent said second member portion of the base member with the cover member movable laterally of the base member,
 - (f) laterally projecting means on each of said pair of member portions of the cover member and said first and second member portions of the base member and extending longitudinally thereof in spaced relation to the respective base and cover members with said projecting means of the cover member between the base member and the projecting means on the first and second member portions thereof and in interlocking engagement therewith in one lateral position of the cover member relative to the base

- member to resist removal of the cover member from the base member,
 - (g) and an elongate longitudinally extending resilient member positioned at one of said first and second member portions of the base member between the laterally projecting means thereon and the base member and engaged by the laterally projecting means on the adjacent of said pair of member portions on the cover member so said resilient member urges the cover member to said one lateral position wherein said interlocking engagement retains the cover member on the base member, lateral movement of the cover member relative to the base member to compress said resilient member releasing the interlocking engagement of the laterally projecting means on the other of said first and second member portions and the pair of member portions on the cover member to permit removal of the cover member from the base member.
5. An assembly as set forth in claim 4 adapted to be mounted on a pair of structural sections disposed in perpendicular relationship and wherein,
- (a) said cover member and base member are each of generally transversely L-shaped configuration provided with first and second planar elements,
 - (b) said pair of member portions on the cover member being on one of said planar elements thereof,
 - (c) said first member portion of the base member being on one and the second member portion being on the other of the planar elements thereof.
6. An expansion joint cover assembly for structural sections disposed in spaced relationship and defining an elongated joint therebetween, said assembly comprising,
- (a) an elongated relatively rigid base member adapted to be mounted on the outer face of one of the structural sections adjacent the margin thereof,
 - (b) spaced longitudinally extending first and second member portions on said base member and projecting outwardly therefrom,
 - (c) a lateral leg on said first member portion spaced from said base member and extending toward the second member portion,
 - (d) an elongated relatively rigid cover member overlying said base member and having a width extending laterally therebeyond to overlie the joint between said structural sections and a longitudinal segment of the other structural section in proximity to said joint,
 - (e) said cover member having a plurality of laterally spaced longitudinally extending member portions projecting toward said base member,
 - (f) a pair of said member portions on the cover member being inwardly of said first and second member portions on the base member and having lateral spacing for insertion therebetween and lateral movement relative to the base member,
 - (g) one of said pair of member portions on the cover member having an elongate laterally projecting portion extending between the base member and the lateral leg on said first member portion when the cover member is mounted on said base member,
 - (h) the other of said pair of member portions on the cover and said second member portion on the base member having laterally projecting members which inter-engage in response to lateral movement of the cover toward said second member portion and cooperate with said lateral leg and laterally projecting portion on the respective first member portion and said one of the pair of member portions on the cover in removably retaining the cover member on the base member,
 - (i) and an elongate longitudinally extending resilient member at said first member between the lateral leg thereon and said base member and engaged by the

lateral projecting portion of said one of the pair of member portions on the cover urging the cover member into said retained position on the base member,

(j) a third of said projecting longitudinally extending member portions spaced transversely of the cover member from said pair of member portions thereon and adapted to overlie said segment of said other structural section. 5

7. An assembly as set forth in claim 6 adapted to be mounted on a pair of structural sections disposed in perpendicular relationship and wherein, 10

(a) said cover member and base member are each of generally transversely L-shaped configuration provided with first and second planar elements with the first planar element of the base member adapted to be mounted on one structural section and the second planar element of the base member overlying the second structural section with the first and second member portions being on the second planar element of the base member, 15 20

(b) said pair of member portions on the cover member being on the second of said planar elements thereof and overlying the second planar element of the base member,

(c) said third member portion on the cover member being on said one planar element of the cover member adjacent the longitudinal terminal edge.

References Cited by the Examiner

UNITED STATES PATENTS

1,758,720	5/30	Sodergren	-----	160—392
2,877,514	3/59	Mears	-----	20—52.5
2,917,792	12/59	Franzblau et al	-----	20—52.2
2,948,994	8/60	Thom	-----	50—434
2,990,040	6/61	Stevenson	-----	189—75

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