Aug. 13, 1946. J. B. HUNT, SR 2,405,654

CONTRACTION JOINT ASSEMBLY

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Fig. 1.

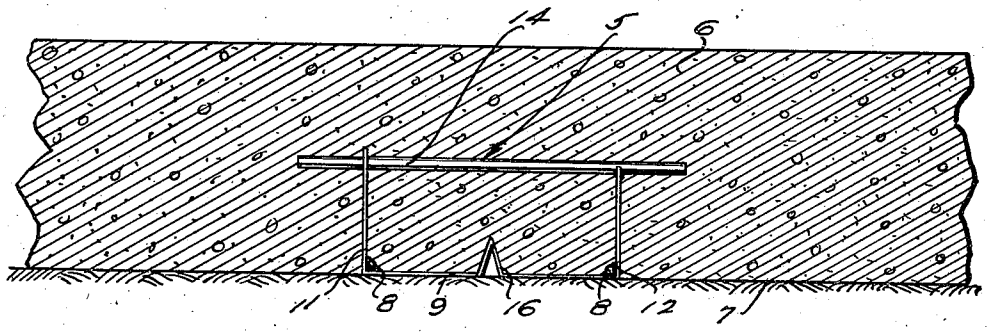
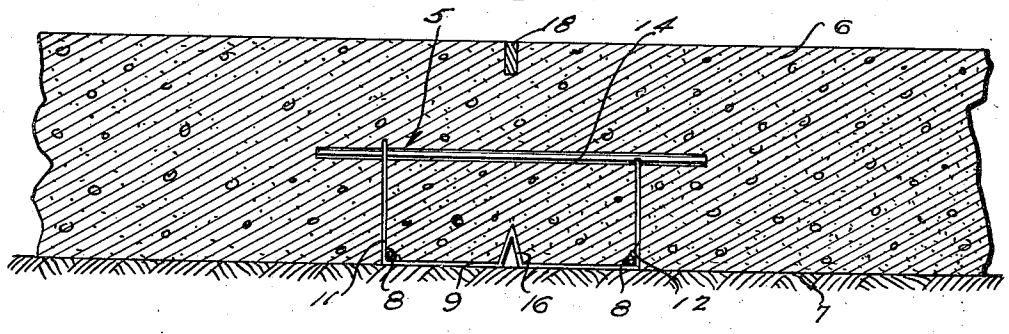
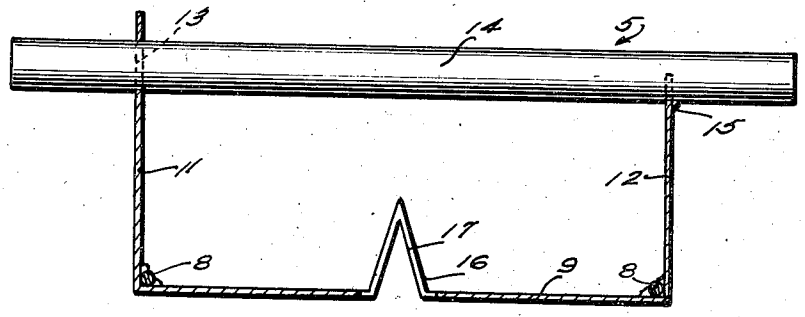


Fig. 2.





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Fig. 6.

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Fig. 4.

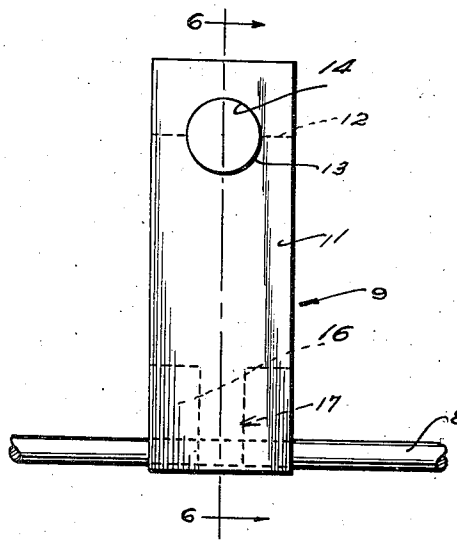


Fig. 5.

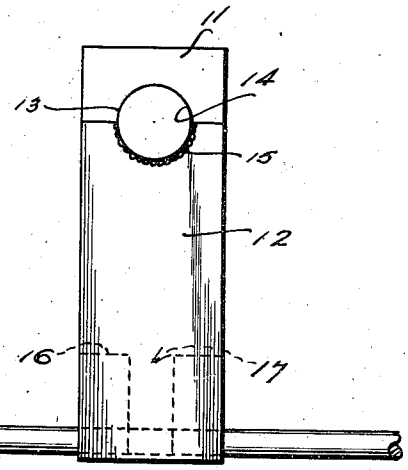
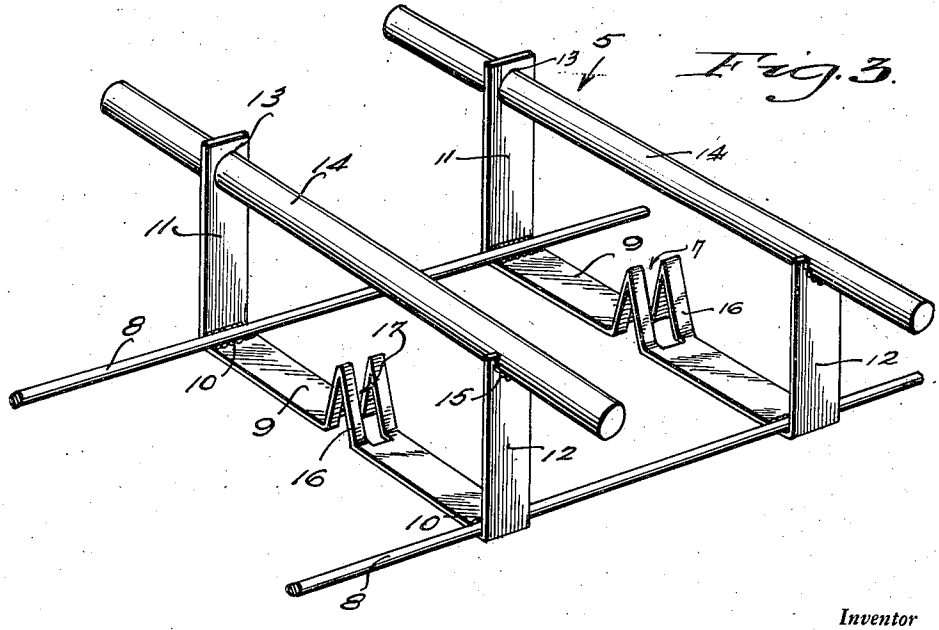


Fig. 3.



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UNITED STATES PATENT OFFICE

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CONTRACTION JOINT ASSEMBLY

Jesse B. Hunt, Sr., Raleigh, N. C.

Application September 16, 1944, Serial No. 554,466

2 Claims. (Cl. 94—17)

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This invention relates to new and useful improvements in contraction joints such as are used in the construction of concrete highways, airports, streets and other paved surfaces.

The principal object of the present invention is to provide a unitary open-work frame structure for not only properly holding dowel rods in properly spaced parallel relation to the sub-grade, but being so constructed as to spread and thus compensate for the contracting action which takes place in concrete.

Another important object of the invention relates to a method of installing dowel bars in contraction or dummy joints in concrete slabs in a more satisfactory manner than is now had with present-day equipment.

Another important object of the invention is to provide for a rigid assembly which can be brought to the site of the work already assembled and ready to set on the sub-grade between forms with the end in view of affording positive and definite alignment of the dowels, holding them at a set distance from the sub-grade and top of the slab as well as at a positive and definite space between each dowel.

A further important object of the invention is to provide a structure of the character stated which can be easily disposed in place and which remain in a definite position during the pouring of concrete.

Other objects and advantages of the invention will become apparent to the reader of the following description.

In the drawings:

Figure 1 represents a fragmentary sectional view through a concrete pavement showing the joint installed.

Figure 2 is a sectional view similar to that of Figure 1 but showing the use of a weakening strip.

Figure 3 is a fragmentary perspective view of the complete contraction joint assemblage.

Figure 4 is a fragmentary side elevational view looking at one end of one of the U-shaped chairs.

Figure 5 is a side elevational view looking at the opposite end of the chair shown in Figure 4.

Figure 6 is a sectional view through one of the chairs, the section being on the line 6—6 of Figure 4.

Referring to the drawings wherein like numerals designate like parts, it can be seen that numeral 5 generally refers to the improved contraction joint embedded in a concrete pavement or the like 6 and resting on a sub-grade 7.

The contraction joint 5 consists of a pair of

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elongated rods 8, 8, running longitudinally of the joint. A plurality of transversely disposed U-shaped chairs 9 are disposed transversely of the joint, the same passing under the rods 8, with the rods being welded as at 10 to the inside corner portions of said chairs 9.

The U-shaped chairs 9 each includes a pair of upstanding leg members 11, 12, the leg 11 being somewhat taller than the leg 12 and having a circular opening, or in fact, opening of any shape and denoted by numeral 13 and conforming with the cross-sectional shape of a corresponding dowel 14.

The dowel 14 is slipped through the opening 13 and rests in a crotch in the upper end of the leg 12 where it is welded inplace as at 15.

Alluding further to the U-shaped chair 9, it can be seen that the intermediate portion of its horizontal part is crimped or offset upwardly as at 16 in the form of an inverted V or some other accordion-like spreader and to afford ready flexibility at this point it is preferable that the chair be longitudinally slotted, as at 17, through said crimp 16.

It can now be seen, that the joint is placed on the sub-grade 7 in the manner shown in Figure 1 and the chairs will serve to maintain the dowels 14 in proper parallel spaced relation with respect to the sub-grade 7.

If desired, a weakening strip 18 may be embedded in the upper portion of the concrete pavement 6 as shown in Figure 2 immediately above the crimp 16 so that the concrete will crack at this point on a straight line.

It can be seen, that while the concrete is contracting, there will be a transverse exertion on the joint which will be taken care of by the yieldability of the crimps 16 and the fact that the dowels 14 are slidable through the legs 11.

The U-shaped chairs are formed of flat sheet material using a minimum width of 1½ inches and when placed in position on the sub-grade act as sand plates and bearing on the sub-grade for adequately and properly supporting the entire assembly.

As evident, the essence of this invention is the fact that I am using a self adapting V crimp which will allow the dowel supporting chairs to spread when the concrete contracts at the plane of weakness. The V crimp is shown at the bottom of the dowel support. The plane of weakness is formed as in Figure 2 by a groove in the top of the concrete slab over the center of the dowel assembly. This groove allows the concrete slab to crack in a straight line when the contrac-

tion takes place. My invention, however, has only to do with the dowel bar and chair assembly.

While the foregoing specification sets forth the invention in specific terms, it is to be understood that numerous changes in the shape, size and materials may be resorted to without departing from the spirit and scope of the invention as claimed hereinafter.

Having described the invention, what is claimed as new is:

1. A contraction joint comprising an elongated structure including a plurality of transverse chairs, said elongated structure being transversely yieldable and dowels supported by said chairs, each of said chairs being provided with an upstanding crimp to permit the transverse yieldability of said elongated structure, said dowels each having one end secured to one end of a corresponding chair and being slidable through the opposite end of said chair.

2. As a component part of an assemblage of the class described, a U-shaped chair, the horizontal connective portion thereof being provided with an inverted V-shaped spreader, said spreader being of a self-adapting and accommodating type, and a dowel rod, said rod being rigidly connected at one end to the upper end of one of the vertical limbs of said chair, the remaining limb having an aperture therein and the adjacent end of said dowel rod sliding freely through said aperture.

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