My invention relates to a joint construction as developed for use in forming concrete slab joints for run-ways of air-fields but which may be used for roadway or floor slab joints.

One object of my invention is to provide a joint construction in which the dowels, spacer bars and supports are completely fabricated in the shop so that skilled mechanics or special handling devices are not required at the job site.

Another object of my invention is to provide a joint construction in which the units may be needed for compact shipment and which may be easily and quickly assembled with the composition joint filler so that the assembly may be made and placed in position by relatively unskilled labor at the job site.

Still another object of my invention is to provide a joint construction which will have great rigidity and will retain its proper shape and position, when the slabs are poured, without the use of auxiliary means or equivalent.

Having thus briefly described my invention, I will now refer to the two drawings which form a part of this specification.

Figure 1 is a perspective view of my improved road joint construction in which the composition joint filler is partially broken away at the lower right hand portion of the view.

Figure 2 shows an end view of one of the dowels with a section through the dowel cap taken on line 2—2 of Figure 3.

Figure 3 is a cross sectional view through the joint showing the dowels in position in the concrete slabs.

Figure 4 is a top view of the joint construction with the joint filler removed.

Figure 5 is a side view of the construction shown in Figure 4.

Figure 6 is a section taken through the center of Figure 4 as indicated by line 6—6.

Figure 7 is a perspective view of the split sheet metal dowel cap.

Figures 8, 9, 10 and 11 are side views showing a dowel cap in the various stages of being placed in position upon the end of a dowel.

Figure 12 is an end view of the dowel cap.

Referring in detail to the drawings, 13 indicates the sub-grade upon which the concrete slabs 11 and 12 rest, between these slabs is the composition joint filler 13, which may be of pressed cork, rubber, bituminous treated fibre or other suitable material which will allow for expansion or contraction of the concrete slabs 11 and 12. The joint filler is provided with a projection cap 14. The dowels 15 are held in properly spaced position by the sinusoidal bars 16 together with the straight bars 17, at sub-grade level are the substantially straight bars 18 extending from the bars 19 past the bars 17 are the slightly inclined supports 19 having hooked ends 20 which partially encircle the dowels 15. These supports 19 are secured to bars 17 and 18 by welding. Alternate dowels are secured to both the upper loop of the sinusoidal bar 16 and the loop of the support 19 on the same side of the joint by welding at 21 and 22. It will be seen that the spacing and supporting means on one side of the joint are thus designed to half the number of dowels in the joint and the spacing and supporting means on the opposite side of the joint are secured to the other half of the dowels. This provides two identical units for each joint structure which can be shipped in bundles containing several units, conveniently nested, which upon arrival at the job site may be quickly assembled with the joint filler. Since the units are alike no time is required to select pieces to suit certain conditions or locations. One of these units is placed on each side of the joint filler and the dowels are inserted through spaced holes in the filler until the sinusoidal bars 16 contact the composition filler 13. A split dowel cap 23 is then placed upon the unattached end of each dowel 15. In Figures 4, 5 and 6, the ends of the straight bar 18 are bent horizontally as shown at 24 and welded to the ends of the sinusoidal bar 16 while the ends of bar 17 are bent downwardly at 25 and welded to the portion 24. While this treatment of the ends of the spacer bars is not claimed as a part of my invention it provides a method of not only stiffening the ends of the units but eliminates rough ends which might cause injury or otherwise prove a nuisance when handling or shipping the units.

The dowel cap 23 which is shown in Figures 7 to 12 inclusive is stamped from sheet metal and may conveniently be shipped in the form shown in Figure 7. It consists of two throughlike portions 25 and 27 with an intermediate rounded portion 28. The portion 26 has a hooked end 29 and a nodular protrusion 30 in proximity thereto, while the portion 27 has side flanges 31 and an end projection 32. In applying this cap to the dowel the procedure is as follows: the hooked end 29 is placed over bar 17 directly beneath the dowel 15 with the nodular protrusion 30 against the bar as shown in Figure 8, the cap is then swung about the bar 17 as a pivot until the trough portion 25 engages the bot-
3. In a joint construction for paving slabs an assembly comprising a composition joint filler, a longitudinal vertically sinuous bar adjacent to each side of said filler, a series of spaced dowels piercing the joint filler, substantially straight longitudinal bars adjacent to either end of said dowels, a second pair of straight bars at the bottom of the joint structure adapted to rest upon a sub-grade and parallel to but slightly further from the joint than the first mentioned straight bars, inclined supports at each dowel with securing means to straight bars at both levels, also means attaching the dowels to the sinuous and straight spacer bars on the same side of the joint, the unattached dowel end provided with a cap of sheet material or the like comprising a split tubular member in which the halves may be applied to the dowel in a pincerlike manner with the end as the fulcrum and the top half pushed longitudinally of the dowel to be engaged by a hooked portion on the upper end of said inclined support and the cap be thus held in position.

4. In a dowel bar assembly a plurality of spaced parallel dowels, parallel transverse dowel support rods disposed inwardly of the ends and directly beneath said dowels, ground engaging base rods vertically spaced below each support rod and also spaced outwardly therefrom, inclined support members secured to each pair of vertically spaced rods below the opposite ends of said dowels and being provided with projecting loops above said dowel support rods, a pair of sinuous spacer bars located intermediate the ends of said dowels, alternately the dowels being secured to an upper bend of a sinuous bar and the projecting loop of a support member on the same side of the structure, the opposite end of each dowel being slidably received in the loop of a corresponding support member.

The following references are of record in the file of this patent:

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