April 6, 1954 A. E. BRICKMAN 2,674,164

TRANSLOAD DEVICE

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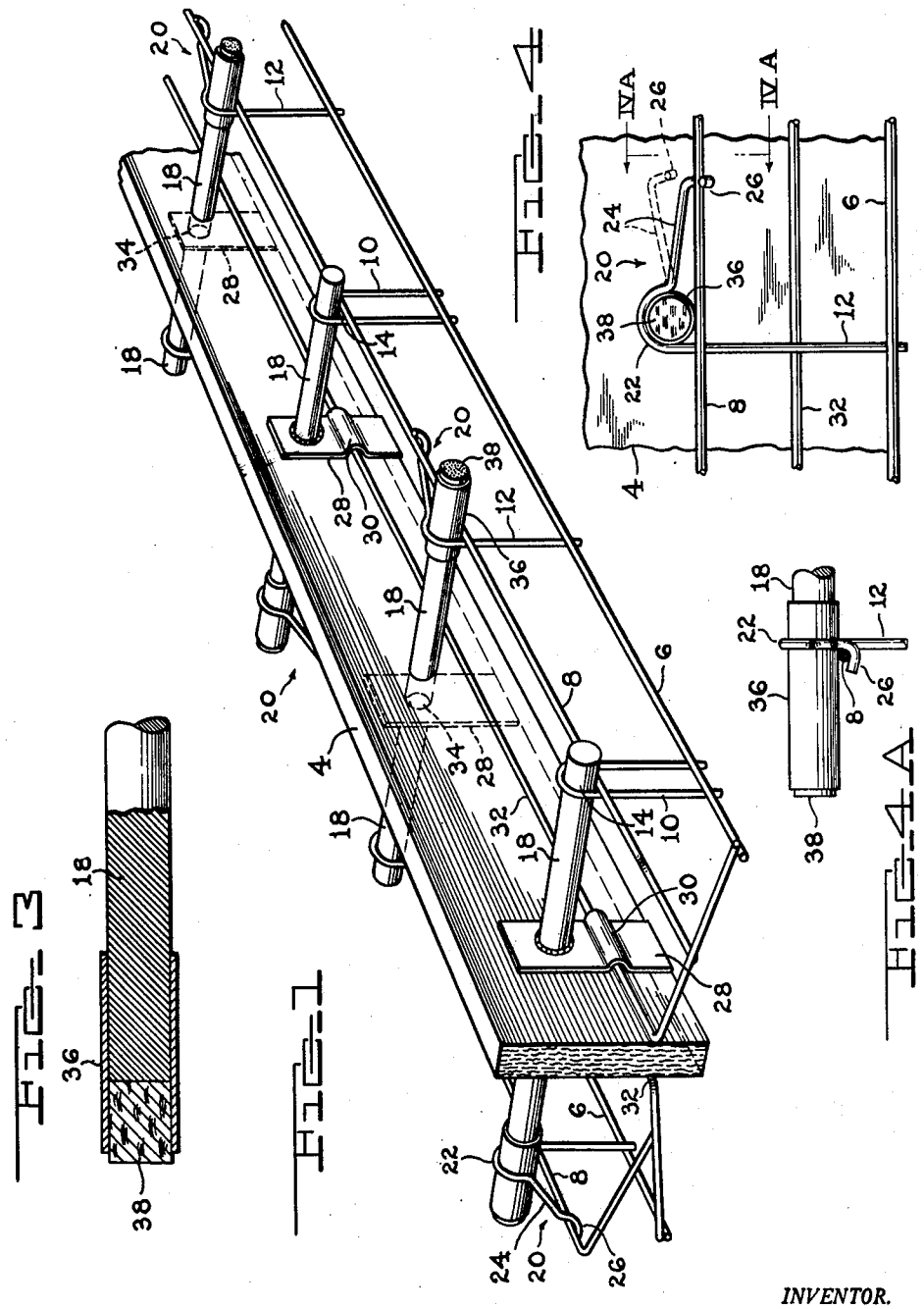


FIG. 1

FIG. 4

FIG. 4A

FIG. 3

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FIG. 2

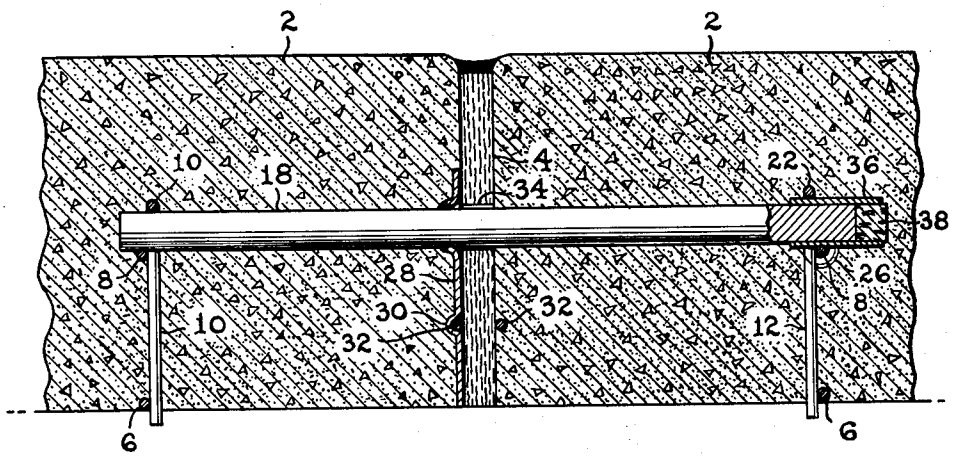
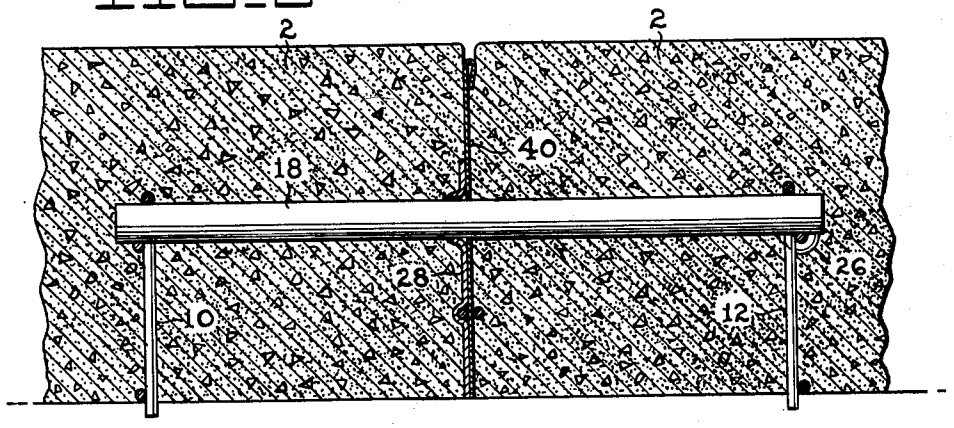


FIG. 5



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FIG. 6.

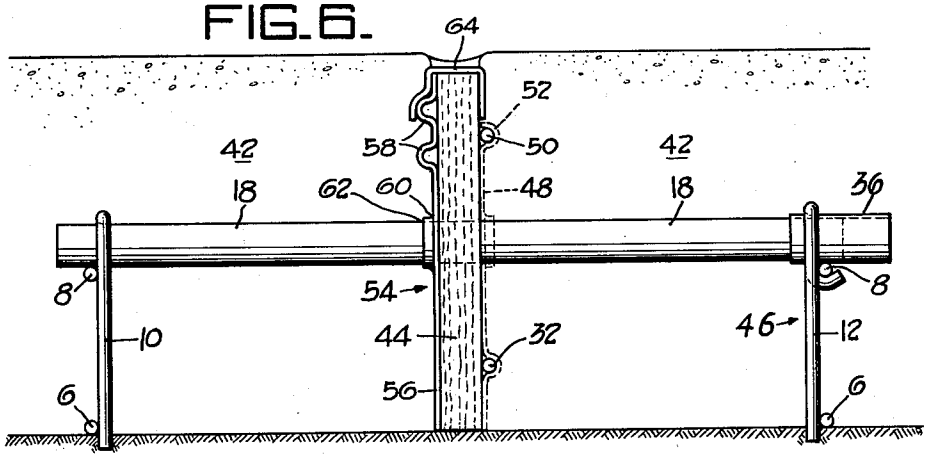


FIG. 7.

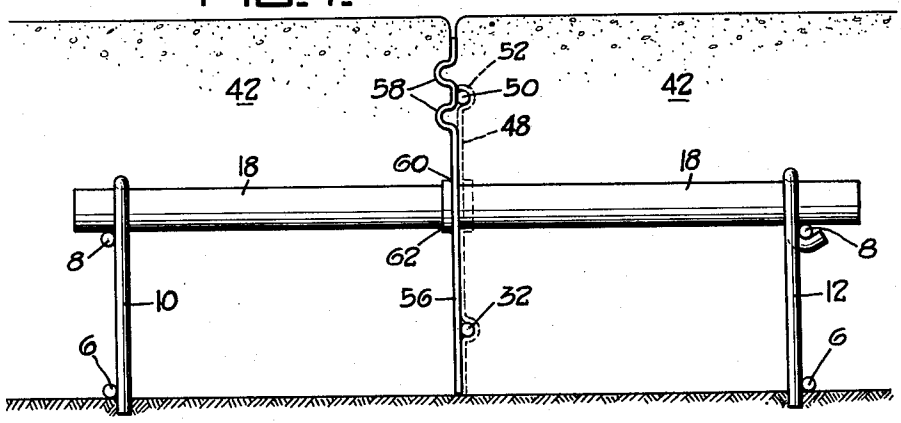
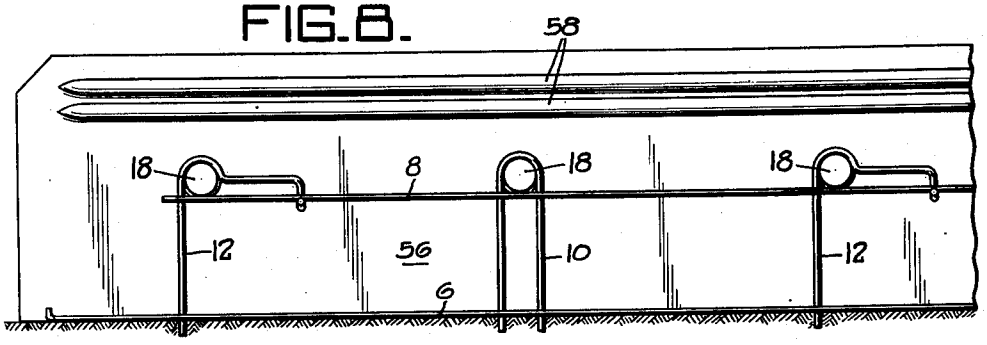


FIG. 8.



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FIG. 9

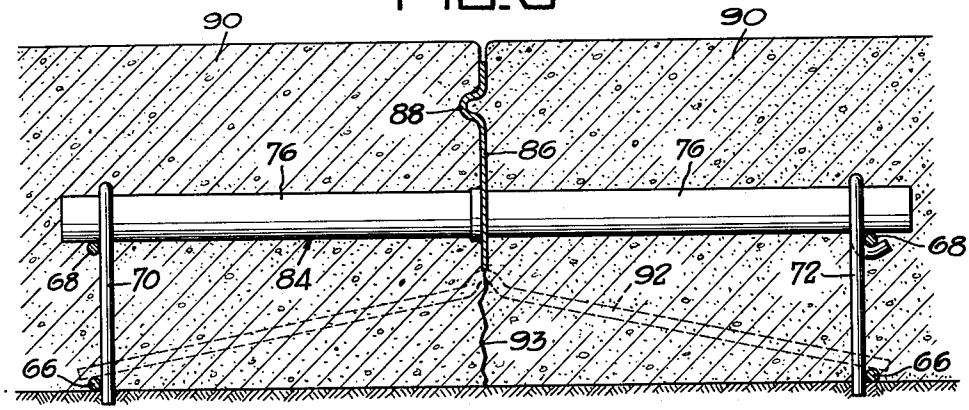


FIG. 10.

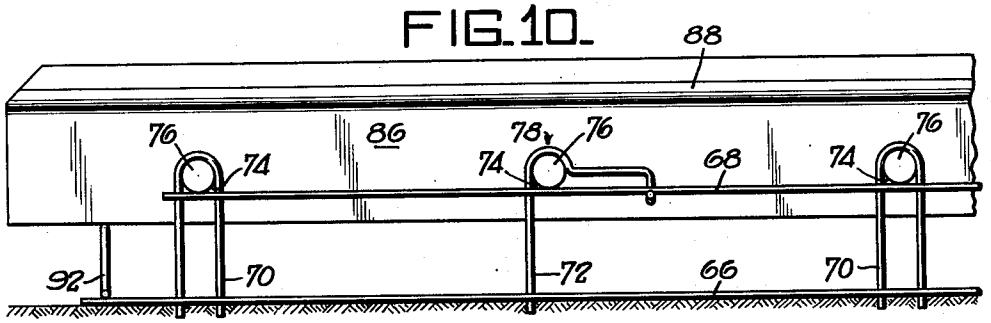


FIG. 11.

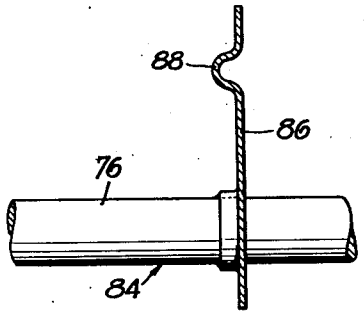
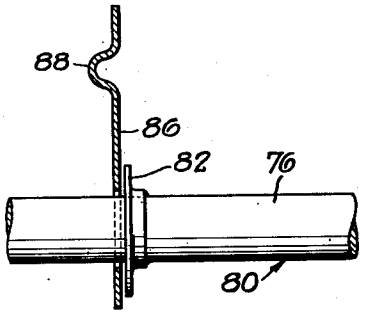


FIG. 12.



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UNITED STATES PATENT OFFICE

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TRANSLOAD DEVICE

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Application November 14, 1951, Serial No. 256,306

4 Claims. (Cl. 94—8)

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This invention, which is a continuation-in-part of my copending application, Serial No. 61,876, filed November 24, 1948, now Patent No. 2,642,789, relates to a transload device and more particularly to such a device for use in pavement joints, concrete highways, airport runways and the like. Such devices are quite commonly used to carry the load between adjacent slabs of concrete, but those transload devices now in common use have various drawbacks. They may be difficult to assemble, or their cost may be excessive. In some instances, the device is so constructed that it is difficult or impossible to flow or pack the concrete solidly around the dowel adjacent the joint.

It is therefore an object of my invention to provide a transload device which is inexpensive and is easily fabricated by welding the various parts together.

Another object is to provide such a device made of two units which can be easily assembled by telescoping the units together.

Still another object is to provide a transload device which enables the concrete to flow or be packed solidly around the dowel adjacent the joint.

These and other objects will be more apparent after referring to the following specification and attached drawings, in which:

Figure 1 is a perspective view of an expansion joint assembly;

Figure 2 is a transverse section of the expansion joint of Figure 1;

Figure 3 is an enlarged sectional view of a detail;

Figure 4 is an elevation of a detail;

Figure 4A is a view taken on the line IV–A—IV–A of Figure 4;

Figure 5 is a view similar to Figure 2, but showing a contraction joint;

Figure 6 is a transverse sectional view of a slight modification of my device;

Figure 7 is a view, similar to Figure 6, but showing a contraction joint;

Figure 8 is an end elevation of the joints of Figures 7 and 8, the joint of Figure 6 being shown with the joint shield removed;

Figure 9 is a sectional view of a modified contraction joint;

Figure 10 is an end elevation of the joint of Figure 9; and

Figures 11 and 12 are enlarged views of details of the joint of Figure 9.

Referring more particularly to the drawings the reference numeral 2 indicates a pair of concrete slabs having the usual filler member 4 therebetween. My device is made of two complementary units which are telescoped together. Each unit has two longitudinal rods 6 and 8 spaced from the filler 4 and connected by rods 10 and 12. Rod 10 is U-shaped with the open end of the U being welded to the lower wire 6 and the closed part of the U extending above and being welded to the top wire 8, thus providing an opening 14. A dowel 18 extends into the opening 14 and is welded to the rods 8 and 10. The rod 12 has a vertical portion, the lower end of which is welded to the rod 6, and a top portion which forms a clamping device 20. The clamping device, as best shown in Figure 4, is provided with a loop 22 for receiving the free end of the dowel 18 and a longitudinal portion 24 which extends along the rod 8. The free end of the portion 24 has a hook 26 which is adapted to pass below and extend around the rod 8 to a point just below the axis of the rod. The rods 10 and 12 are arranged alternately with the rods 10 of one unit being opposite the rods 12 of the other unit. A plate 28 is welded to each of the dowels 18 on that side of the filler 4 adjacent the rod 10. The plates 28 are bent at 30 to receive a longitudinal rod 32 which is welded to the plates 28 and extends the length of the joint. As shown in Figure 1, the end of rod 32 is bent toward rod 6 to which it is welded and the end of rod 8 is bent downwardly and welded to the bent portion of rod 32. Holes 34 are provided in the filler 4 for passage of the dowels, the free ends of the dowels having sleeves 36 telescoped thereover. An expansible filler 38 is provided in the sleeve 36 at the outer end thereof.

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In assembly, the two units are brought together by passing the free ends of the dowels through the openings 34 into the loops 22. The sleeves 36 and fillers 38 are then applied to the dowels and the hook 26 is moved from the dotted line position of Figure 4 to the full line position, thus locking the two units together with the plates 28 bearing against opposite sides of the filler 4 to hold it in position while concrete is poured. The plates 28 do not interfere with the flow or packing of the concrete around the dowels adjacent the joint, thus making it possible to provide dense concrete at the most critical places. The device functions in the usual manner as the concrete slabs 2 expand and contract.

Figure 5 shows my device as applied to a contraction joint. The only differences in the two joints are the omission of the sleeves 36 and filler

38 in the contraction joint and the substitution of a steel separating plate or filler 40 for the expansible filler 4.

Figures 6 and 8 show a slight modification of my device as applied to an expansion joint. In this embodiment a pair of concrete slabs 42 have the usual filler member 44 therebetween. Two complementary units are provided which telescope together to form a complete device. One unit 46 is essentially the same as the units of the first described device, the only difference being that plates 48 are substituted for plates 28 and an additional longitudinal rod 50 is welded thereto. The rod 50 extends the length of the joint, the plates 48 being bent at 52 to receive the longitudinal rod 50. The second unit 54 has the same outboard supports as the first embodiment. However, in place of the plates 28 and longitudinal rod 32, a continuous plate 56 is provided which extends the length of the joint. This plate 56 is provided with corrugations or bead formations 58 at the top thereof to provide a stiffening effect. Alternate dowels 18 are welded to the plate 56 at the points 60 with holes 62 being provided in the plate between the points 60 for slidably receiving the remaining dowels. A removable joint shield 64 is provided over the filler member 44 as shown. The operation of this device is essentially the same as that of the first embodiment.

Figures 7 and 8 show the device of Figure 6 as applied to a contraction joint. The only differences in the two joints are the omission of the sleeves 36 and the filler 44 from the contraction joint.

Figures 9 through 12 show a further modification of my device as applied to a contraction joint. In this embodiment two complementary units are provided which telescope together to form a complete device. Each of the units has two longitudinal outboard rods 66 and 68 connected in spaced apart relationship by rods 70 and 72. Rods 70 are U-shaped with the open end of the U being welded to the lower wire 66 and the closed part of the U extending above and being welded to the top wire 68, thus providing an opening 74. A dowel 76 extends into each opening 74 and is welded to the rods 68 and/or 70. The rod 72 has a vertical portion, the lower end of which is welded to the rod 66 and a top portion which forms a clamping device 78 which is identical to the clamping device 20. Each of the dowels of the right hand unit 80 as shown in Figure 12 has a washer or stop member 82 welded thereto substantially on the transverse center line thereof. The dowels of the left hand unit 84 are welded to the contraction joint plate 86 intermediate their length. Plate 86 is provided with a bead formation 88 to give lengthwise rigidity thereto. The plate 86 extends from a point below the dowels 76 to a point approximately one-half inch below the top of the concrete slab 90. Truss wires 92 may be fastened to the ends of the longitudinal wires 66 and to the bottom of plate 86 to provide stability for shipping and handling. Similar truss wires may also be used in the embodiment of Figures 6 to 8. When the concrete slab 90 contracts, a crack 93 will form therein below the plate 86, thus forming two slabs.

While several embodiments of my invention have been shown and described, it will be apparent that other adaptations and modifications may be made without departing from the scope of the following claims.

I claim:

1. In a transload device for adjacent slabs, the combination including two telescoping supporting units; each unit comprising a pair of outboard longitudinal rods spaced apart one above the other, spaced apart U-shaped rods having their open ends welded to the lower rod and their closed ends welded to the upper rod and extending thereabove to form an opening, a dowel passing through each opening and welded to the surrounding rod, a clamping rod between adjacent pairs of said U-shaped rods extending between and welded to the bottom and top longitudinal rods, each of said clamping rods extending above the top longitudinal rod and having a loop for receiving a dowel of the opposite unit, each of said clamping rods extending from said loop along said top longitudinal rod and having a hook portion at the free end adapted to pass below and around the top longitudinal rod, one of said units having a vertical plate welded to the dowels thereof intermediate the length thereof and extending therebetween, said vertical plate having spaced holes therein one for each of the dowels of the other unit.

2. In a transload device for adjacent slabs, the combination including two telescoping supporting units; each unit comprising a pair of outboard longitudinal rods spaced apart one above the other, spaced apart U-shaped rods having their open ends welded to the lower rod and their closed ends welded to the upper rod and extending thereabove to form an opening, a dowel passing through each opening and welded to the surrounding rod, a clamping rod between adjacent pairs of said U-shaped rods extending between and welded to the bottom and top longitudinal rods, each of said clamping rods extending above the top longitudinal rod and having a loop for receiving a dowel of the opposite unit, each of said clamping rods extending from said loop along said top longitudinal rod and having a hook portion at the free end adapted to pass below and around the top longitudinal rod, one of said units having a vertical plate welded to the dowels thereof intermediate the length thereof and extending therebetween, said vertical plate having spaced holes therein one for each of the dowels of the other unit, each of the dowels of said other unit having a collar rigidly fastened thereto intermediate its length adapted to bear against said plate.

3. In a transload device for adjacent slabs, the combination including two telescoping supporting units; each unit comprising a pair of outboard longitudinal rods spaced one above the other, means connecting the longitudinal rods in spaced relationship, dowels rigidly fastened to the top longitudinal rod at spaced intervals, a clamping rod between adjacent pairs of dowels extending between and welded to the bottom and top longitudinal rods, each of said clamping rods extending above the top longitudinal rod and having a loop for receiving a dowel of the opposite unit, each of said clamping rods extending from said loop along said top longitudinal rod and having a hook portion at the free end adapted to pass below and around the top longitudinal rod, one of said units having a vertical plate welded to the dowels thereof intermediate the length thereof and extending therebetween, said vertical plate having spaced holes therein one for each of the dowels of the other unit.

4. In a transload device for adjacent slabs, the combination including two telescoping sup-

porting units; each unit comprising a pair of outboard longitudinal rods spaced one above the other, means connecting the longitudinal rods in spaced relationship, dowels rigidly fastened to the top longitudinal rod at spaced intervals, a clamping rod between adjacent pairs of dowels extending between and welded to the bottom and top longitudinal rods, each of said clamping rods extending above the top longitudinal rod and having a loop for receiving a dowel of the opposite unit, each of said clamping rods extending from said loop along said top longitudinal rod and having a hook portion at the free end adapted to pass below and around the top longitudinal rod, one of said units having a vertical plate

welded to the dowels thereof intermediate the length thereof and extending therebetween, said vertical plate having spaced holes therein one for each of the dowels of the other unit, each of the dowels of said other unit having a collar rigidly fastened thereto intermediate its length adapted to bear against said plate.

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