Feb. 1, 1938. A. C. FISCHER 2,106,944

PAVING

Filed June 17, 1933 2 Sheets-Sheet 1

Fig. 1.

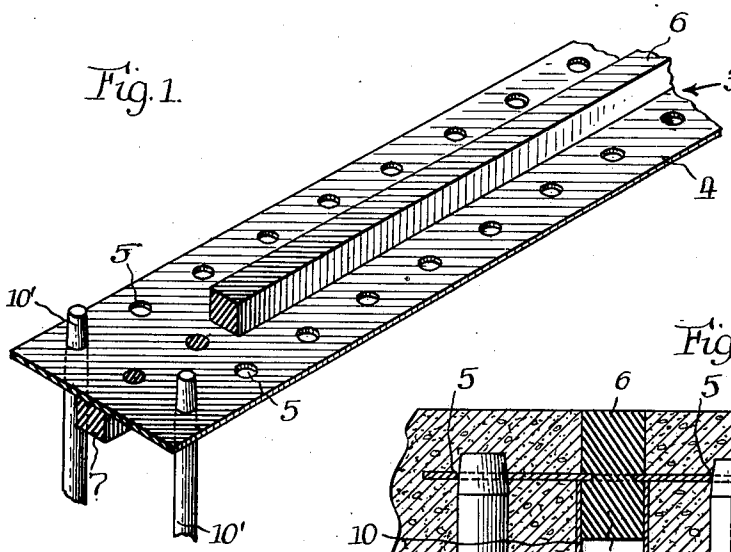


Fig. 2.

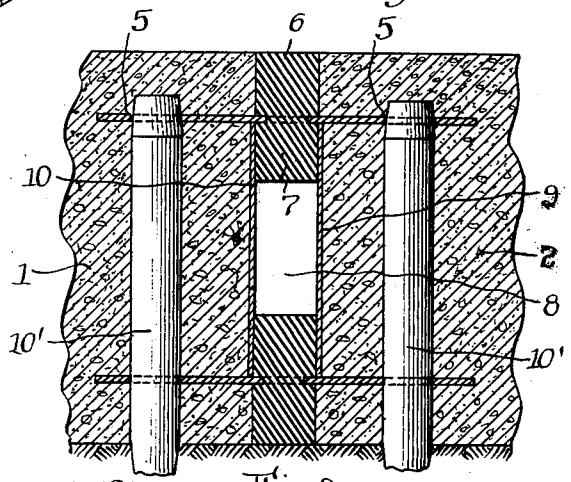


Fig. 3.

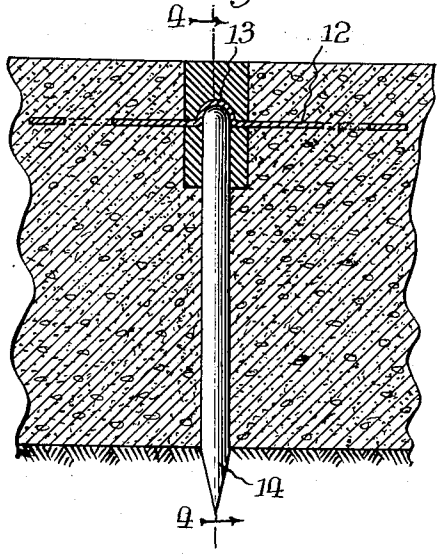
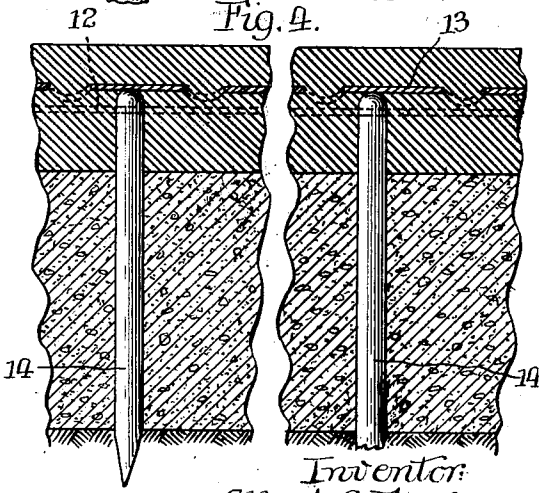


Fig. 4.



Inventor:
Albert C. Fischer,
By Albert H. Robinson Atty.

Feb. 1, 1938. A. C. FISCHER 2,106,944

PAVING

Filed June 17, 1933 2 Sheets-Sheet 2

Fig. 5.

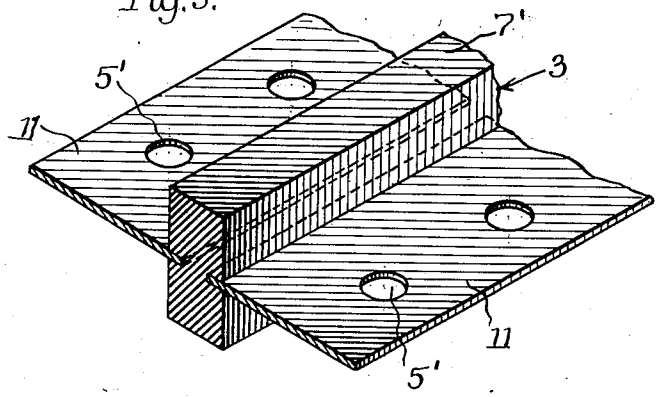


Fig. 6.

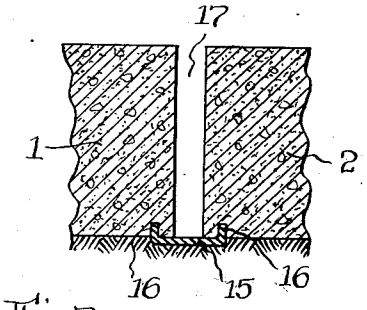
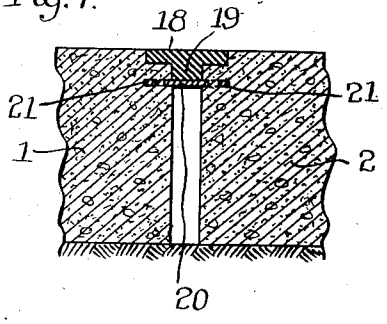


Fig. 7.



Inventor:
Albert C. Fischer,
By Albert & Robinson Atty.

Patented Feb. 1, 1938 2,106,944

UNITED STATES PATENT OFFICE

2,106,944

PAVING

Albert C. Fischer, Chicago, Ill.

Application June 17, 1933, Serial No. 676,247

5 Claims. (Cl. 94—18)

This invention pertains to paving or flooring, particularly pertaining to the structure of joints or seams between paving slabs which comprise the paving or flooring.

The invention accordingly consists in the features, constructions, combination of elements and arrangement of parts which will be exemplified in the constructions hereinafter set forth for carrying out the above stated object and such other objects as will hereinafter appear.

Generally described the invention relates to a pavement or flooring made of concrete or other plastic material which is poured in place in a plastic condition and thereafter sets or hardens. At predetermined intervals the concrete may be separated to have interposed a joint structure, said joint structure comprising means which are embedded in the adjacent ends of the slabs. Associated with this means is another means which is elastic and resilient in character and provides a sealing means to prevent water from seeping into the substructure. The joint structure may include a staking means which is adapted to hold the joint structure in place while the concrete material is poured in place.

For a better understanding of the invention reference may be made to the accompanying drawings, in which

Fig. 1 is a perspective view of a joint structure embodying the present invention;

Fig. 2 is a sectional view showing the joint structure comprising separate units inserted in a paving, one of which is inserted near the top of the paving and the other of which is inserted near the bottom of the paving;

Fig. 3 is a sectional view of a modified form of the joint construction;

Fig. 4 is a longitudinal view taken on lines 3—3 of Fig. 3;

Fig. 5 is a perspective view of still another modification of the joint structure; and

Figs. 6 and 7 illustrate still other embodiments of the present invention.

Referring specifically to the drawings there is disclosed a pavement comprising concrete sections 1 and 2 which are adapted to be poured in place. Interposed at intervals between these concrete sections is a joint structure, denoted generally by numeral 3. This joint structure comprises a plate or slab 4, preferably of metal, having a series of recesses 5 formed therein. Intermediate of the side edges and on both faces of the plate there may be applied strips 6 and 7 of plastic material, such as rubber, bituminous material, and the like. These strips may be adhered to the metal strip 4 and may also be further secured by having some of the recesses 5 positioned so that the plastic material from the strips 6 and 7 may project therethrough and bond said strips integrally together. This joint structure may be used singly in the paving structure applied adjacent the top or bottom or intermediate of the paving.

In the paving structure illustrated in Fig. 2 two of these paving structures are inserted, one being placed near the top of the paving and the other one near the bottom thereof. In order to entirely separate the ends of the adjacent slabs 1 and 2, it would be possible to have the strips 6 and 7 of both joint structures vertically continuous, thereby filling the intervening space 8 between the paving slabs. However, this intervening space 8 permits the plastic joint material to expand without projecting to the tread surface of the pavement, and is desirable for this purpose. In order to prevent this space 8 from filling with the concrete material when the slabs 1 and 2 are poured in place, the space may be protected by means of strips 9 and 10 of paper, saturated felt or the like, which are applied on the outside faces of the plastic strips between the top and bottom perforated metal plates.

Any means may be utilized for holding the joint structure in place while the paving slabs are being poured. This means is typified in the present invention by any number of stakes 10' which may project into the recesses and support the strips in place. The embodiment illustrated in Fig. 1 shows the plate 4 as being integral. In some constructions as typified in Fig. 5 this may be preferably divided longitudinally to provide separate plates 10 and 11. The two plates are joined by means of plastic material 12 which is formed or applied on the abutting ends of the strips 10 and 11. In this structure the two metal plates are securely fastened to adjacent slabs but are adapted to move in response to contraction and expansion by means of the plastic material, which joins them, thereby providing a contractible and expansible joint but yet securing a sealing means for the seam between the paving slabs.

The modifications in Figs. 3 and 4 are substantially the same as that above described. They show a joint structure which is inserted near the top of the paving. The plate 12 is substantially the same in construction as that

above described, except that it is provided with a longitudinal, intermediate rib 13, which is adapted to receive the top end of stake 14 which is used to support the joint structure in place while the concrete slabs are poured in place.

In the modification illustrated in Fig. 6 a sealing means 15 may be embedded in the adjacent ends of slabs 1 and 2 by some such means as flanges 16. Sealing means 15 may be constructed of rubber, bituminous material or a metal, or some similar means coated with a waterproofing material. This sealing means is formed preferably as a U-shaped channel member but, of course, may be of other form, and readily adapted to be embedded in the adjacent end of the slabs. If the sealing member is associated with the slab members 1 and 2 on the bottom side, the space 17 thereabove between the slabs may be left unfilled or may be filled with some preformed or poured filling material, such as, rubber, asphalt or the like. Where the space is left unfilled it will be preferable to have the slabs narrowly spaced apart so that any vehicles passing over the pavement will not be affected by the space.

The modification in Fig. 7 shows a sealing strip 18 applied to fill the space near the top of the paving sections 1 and 2 in order to provide a smooth uninterrupted tread surface. Plate member 20 is embedded in the adjacent ends of slabs 1 and 2 and is provided on opposite edges with spaces 21 in order that the cement material may project therethrough when poured and securely bond the plate 20 in place. Filling strip 18 is provided with a portion 19 extending therebeneath to contact with the plate 20 and may be adhesively adhered thereto, or by means of recesses, such as more particularly shown in the modifications in Figs. 1 and 5. The space between the slabs immediately below the metal strip 20 may be left unfilled or may be filled with a preformed or poured expansion joint material, as is more fully described in reference to Fig. 6.

While I have described various preferred embodiments in detail it will be understood that such detailed constructions are for the purpose of illustration and not as limitations of the invention. Various changes may be made in details without departing from the spirit of the invention.

I claim:

1. A paving construction comprising spaced apart expansion joint elements and paving sections having inserted therebetween an expansible joint, means embedded in the joint and in each of the sections, and means for supporting the first means in place while the sections are being assembled.

2. A paving construction comprising spaced apart paving sections, means projecting from the end of each of the paving sections intermediate the top and bottom thereof and with adjacent edges spaced apart, and an expansion joint strip inserted between and mounted upon the edges of the projecting means.

3. A pavement construction embodying spaced pavement sections and an expansion joint therefor including a plate having numerous perforations therethrough, a plurality of stakes tapered at their tops on which said plate is impaled, and an expansion filler strip partly above and partly below said plate and having its parts connected through the perforations thereof.

4. A paving construction comprising spaced apart paving sections having inserted therebetween an expansible filler, means embedded in the filler and extending into each of the sections for supporting the filler, and means spaced from the filler and embedded in the paving sections and supporting the first means in place while the paving sections are being laid.

5. A pavement construction comprising spaced pavement sections having a gap therebetween, a plate member embedded in the end of each pavement section intermediate the top and bottom thereof and protruding into said gap in a common horizontal plane with the edges spaced apart, and a yielding preformed expansion joint strip member inserted between and mounted upon the spaced edges of said plate members within said gap having the plate members embedded therein.

ALBERT C. FISCHER.