March 5, 1940. E. B. SPARROW 2,192,369

HIGHWAY CONSTRUCTION

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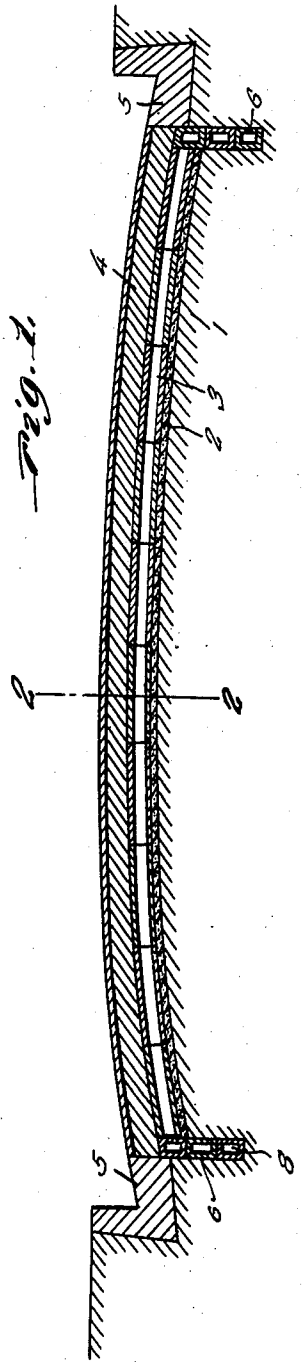


Fig. 1.

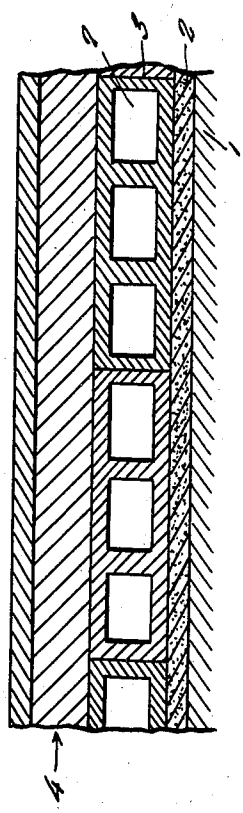


Fig. 2.

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HIGHWAY CONSTRUCTION

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2 Claims. (Cl. 94—4)

This invention relates to a pavement or highway structure, the general object of the invention being to provide a pavement having tiles between the paving material and the subgrade so as to provide an air space and drainage space between the paving material and the subgrade, thus reducing damage to the pavement by moisture and temperature changes to a minimum.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts to be hereinafter fully described, illustrated in the accompanying drawing and specifically pointed out in the appended claims.

In describing the invention in detail, reference will be had to the accompanying drawing wherein like characters denote like or corresponding parts throughout the several views, and in which—

Figure 1 is a transverse sectional view through the improved highway or pavement.

Figure 2 is a section on the line 2—2 of Figure 1.

In this drawing, the numeral 1 indicates the sub-base of the highway on which is placed a layer 2 of sand or the like to provide a cushion and then on this layer 2 is placed the tiles 3. Then the pavement material shown generally at 4 is placed on these tiles, this material being of any suitable kind. The gutters or curbs are shown at 5 and a vertical arrangement of tiles 6 extends downwardly from the edges of the pavement where it joins the gutters or curbs, with the tiles 3 abutting the upper portion of the tiles 6. As shown the passages 7 of the tiles 3 extend transversely with the passages of one tile in alignment with those of the other tiles so that the tiles form endless passages from one side edge of the pavement to the other, while the passages 8 of the tiles 6 extend longitudinally of the pavement or highway. The tiles 6 prevent moisture from reaching the roadway from the sides thereof or from under the gutters or curbs and the entire tile arrangement provides drainage and air spaces. It is well understood that deterioration of pavements and highways is mainly due to moisture collecting in the sub-grade, overload and improper construction. The tile arrangement of this invention drains off moisture as any moisture passing through the pavement itself will enter the passages of the tiles and drain off and any moisture rising to the bottom of the pavement from the subgrade is disposed of over the entire area formed by the tiles, the tiles 6 intercepting any moisture that would seep through the ground outside of the curb lines. Also the air space formed by the tiles between the subgrade and the paving maintains a more uniform temperature in the subgrade so that movement of the subgrade due to temperature changes and degree of moisture is practically eliminated which greatly enhances the stability of the paving proper. There is practically no expansion or contraction of the subbase due to the tiles and thus the rolls or bumps and cracks in the surface caused by movement of the sub-base are eliminated. Due to the air space formed by the tiles the pavement will quickly cool off after a hot day and freezing does not penetrate to the subgrade because of the dry condition. The cost of construction of the improved highway is reduced and the maintenance cost is reduced to a minimum.

The tiles used can be of load bearing type and of non-absorbent nature and the passages 8 of the tiles 6 should be arranged so that they will discharge into a sewer or the like.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts provided that such changes fall within the scope of the appended claims.

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

1. A highway structure comprising a porous cushioning layer on the sub-grade, drain tiles resting on the cushioning layer, each tile having passages therein entirely enclosed by the body of the tile excepting at the ends where the passages open out through the ends of the body, said tiles being laid with the passages extending transversely of the pavement with the passages in alignment to provide continuous passages from one side edge of the highway to the opposite side thereof, said tiles being rectangular and abutting to completely cover the road bed and the abutting ends of the tiles forming open joints for the entrance of moisture, and road surfacing material supported on the tiles.

2. A highway structure comprising a porous cushioning layer on the sub-grade, drain tiles resting on the cushioning layer, each tile having passages therein entirely enclosed by the body of the tile excepting at the ends where the passages open out through the ends of the body, said tiles being laid with the passages extending transversely of the pavement with the passages

in alignment to provide continuous passages from one side edge of the highway to the opposite side thereof said tiles being rectangular and abutting to completely cover the road bed and the abutting ends of the tiles forming open joints for the entrance of moisture, road surfacing material supported on the tiles, and a vertical row of drain tiles at each side edge of the highway structure and extending downwardly from the side edges of the structure, the passages of the vertical row of tiles extending longitudinally of the highway structure and said vertical row having an upper tile abutting an end of an end tile of the first-mentioned tiles and the other tiles of the vertical row extending downwardly beyond the cushioning layer.

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