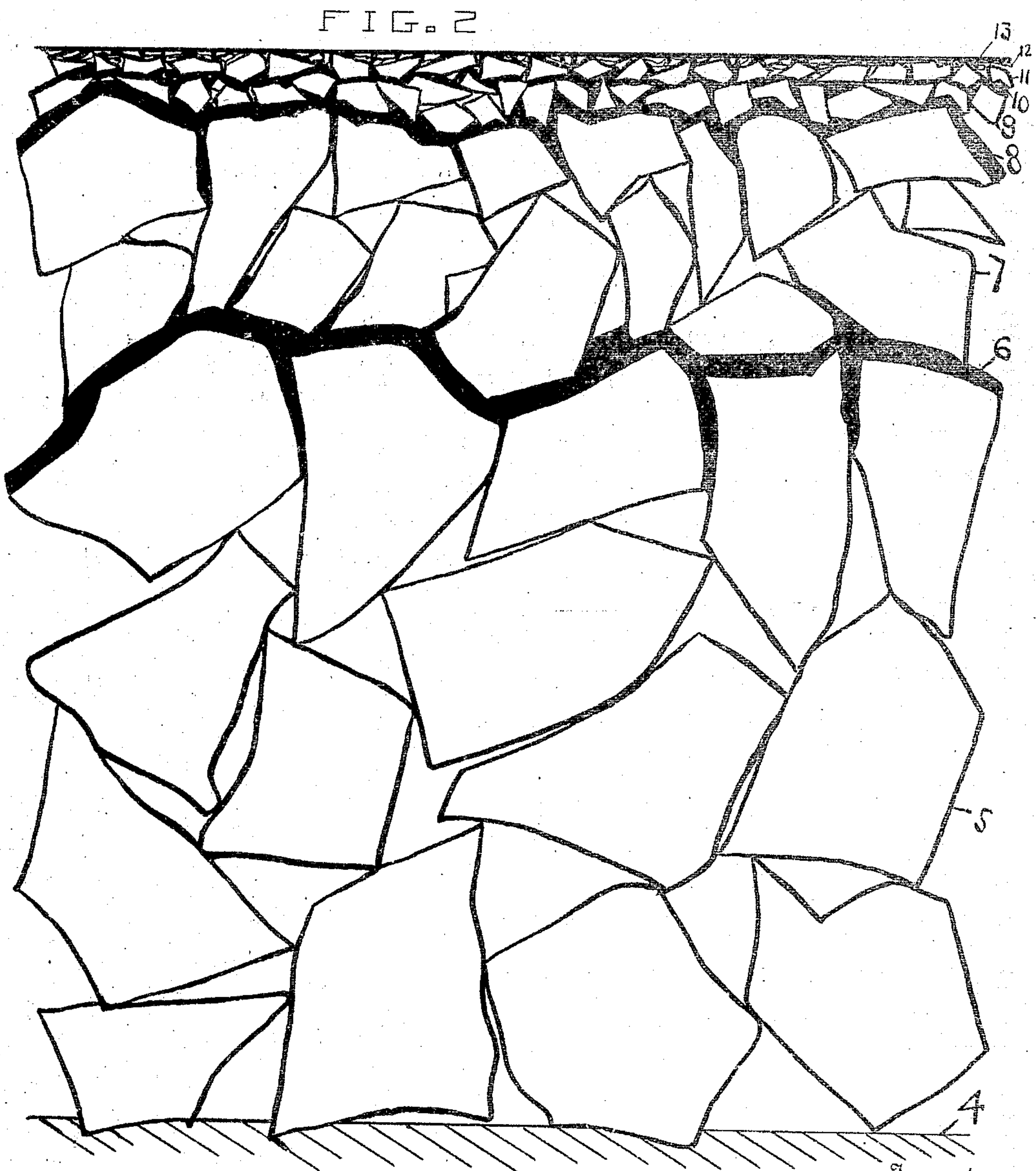
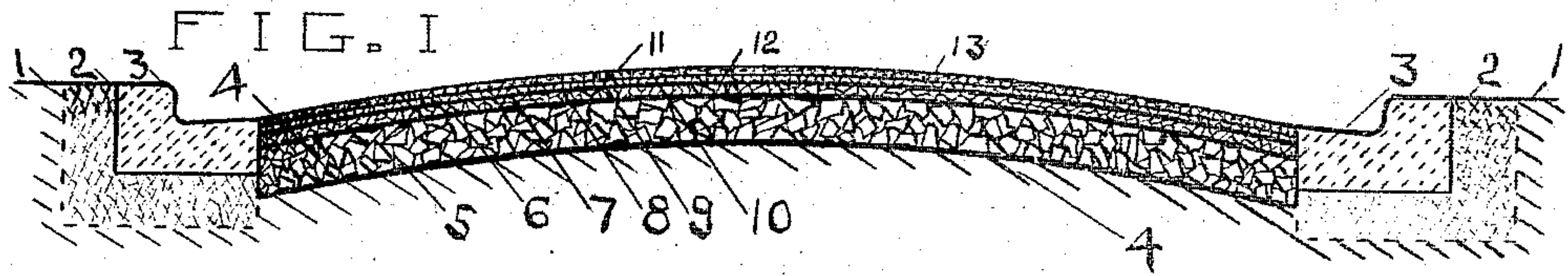


H. G. JENNISON.
COMPOSITE PAVEMENT.
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995,147.

Patented June 13, 1911.



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COMPOSITE PAVEMENT.

995,147.

Specification of Letters Patent. Patented June 13, 1911.

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To all whom it may concern:

Be it known that I, HARRY G. JENNISON, a citizen of the United States, residing at Toledo, Lucas county, Ohio, have invented 5 new and useful Composite Pavements, of which the following is a specification.

This invention relates to certain new and useful improvements in paving.

This invention has utility when embodied 10 in and applied to composite pavements comprising separate layers of road metal and binder.

Referring to the drawings: Figure 1 is a transverse section of a roadway showing 15 an embodiment of the invention; and Fig. 2 is a fragmentary sectional view, on an enlarged scale of the roadway shown in Fig. 1.

A road 1 is shown as having filling 2 in 20 which are set the curbing and gutters 3 along each side of the way proper. The portion of the way 4, intermediate the gutters is prepared by leveling and rolling to provide a uniform footing or sub-grade. 25 Upon this sub-grade 4 is applied the regular base 5 to provide an irregular or rough upper surface. The base in this instance is shown as comprising broken stone, although concrete or other form of base may be used. 30 In practice it is desirable to have this stone grade say two and one-half inches and applied for a depth of say six inches. This compacted base is coated with a hydrocarbon layer 6 which may be of a viscosity to 35 permit of ready applying as a coating, but of such sluggish flow or normal consistency as to not penetrate into lower voids. Over this binding layer 6 is distributed a layer of road metal 7 shown as of graded stone 40 which is firmly anchored in position as to the base 5 by the binder 6. The coating 6 is of an adhesive nature and coats with the irregular surface of the base and the applied layer 7 to insure a firm anchoring of 45 the pavement against buckling or relative loosening of the layers by creeping action. This layer 7 in practice may run up to two and one-half inches in thickness and comprise about two inch stone or a grade somewhat smaller than that of the base 5. This 50 course 7 is the regular wearing layer and after being slightly compacted is coated with a layer of hydrocarbon binder 8 to resist weathering attacks and form an effective waterproof coating for the wearing course 55 and base. In practice it is often desirable

to have this binder of considerable consistency, somewhat more so than the binder 6. As thus protected the binder 6 may be of such fluidity as to be readily effective in 60 uniting the layers 5 and 7 and still not liable to disintegration due to weather conditions.

To level up the wearing course 7, a layer of graded stone is distributed over the waterproof binder 8. In practice this graded 65 stone may run say one-half inch. The wearing course comprising these layers 7 and 9 with the intermediate waterproof binder 8 is thus brought to an approximate level by rolling or compacting and the way is 70 ready for the sealing course. The sealing course includes a heavy hydrocarbon binder 10 disposed over the leveling course 9, and over this binder 10, a course of graded stone 11. In practice the course 11 runs about 75 the same as course 9. The way is then compacted.

To finish the way, a course 12 of road metal, running in practice say close to the grade of screenings is distributed over the 80 course 11 and topped off by a hydrocarbon binder or oil coating 13. These graded layers of road metal are shown as clean, uniform runs which, laid together, produce a firm level top pavement. As the layers 5, 7 and 9 are compacted before applying the 85 layers 6, 8 and 10, a minimum of hydrocarbon is required. This hydrocarbon binder 13 may in practice be desirable of a fluidity even greater than that of binder 6, 90 which binder 6 is more fluid than the binders 8 and 10. The fluidity of binder 13 permits of its ready application without heating so that it freely distributes itself over the screening course 12 to cause this 95 course to quickly unite with course 11. This binder 13, while sparingly applied, may even work down to the binder 10 and act as a solvent to more firmly unite these finish layers of the pavement. 100

In applying the binder layers, the amount is varied according to weather conditions. It is not the purpose of these binders to fill the voids but merely to firmly anchor the 105 various layers of material. The rough upper surface of the base 5 is coated with sufficient of the binder 6 that the wearing course 7 may be anchored thereto against any creeping. The compacting of the layers effects a slight permeation thereof into the 110 binders. The binders 8 and 10 are even more sparingly applied in practice, being

of greater consistency and distributed hot, but are continuous to provide a waterproof coat. The finish with the thin hydrocarbon 13 results in an early cementing or union of 5 the surface materials of the roadway to maintain the elements of the layers in their proper level relation from the time the pavement was built.

A greater advantage of this form of pavement is the ease with which it may be laid, 10 requiring no special or expensive installation and thus being susceptible for building any quantity of roadway economically. The materials are firmly united by the alternating 15 layers to resist attack from wear, while the waterproofing is a further protection against weather influences. In conjunction with these points of merit there is the additional feature of cementing the finishing 20 course to this laminated way. The great preponderance of road metal eliminates possibility of any breaking through of the layers or floating of the road metal on the hydrocarbon binder, thus insuring against 25 hydrocarbon oozing out to the surface of the way to cling to the vehicles and thereby work disintegration of the way to draw out portions of the road metal.

What is claimed and it is desired to secure 30 by Letters Patent is:

1. The combination in a pavement of a base, a hydrocarbon binder thereon, a wearing layer wholly of road metal anchored

by said binder, said layer having unfilled voids, and a hydrocarbon binder covering 35 said road metal layer and spaced from said anchor binder, the quantity of binder being gaged to preserve cushioning effect of the unfilled voids in road metal layer upon laying 40 to thereby confine hydrocarbon binders to serve only as binders.

2. The combination in a pavement of an anchoring or base layer wholly of road metal, a wearing layer wholly of road metal, 45 provided with unfilled voids, a finishing layer wholly of road metal, and hydrocarbon binders of different viscosities between said road metal layers, said binders only providing continuous holding means between 50 said layers whereby the unfilled void carrying wearing layer is effective to space the binding layers.

3. The combination in a pavement of a plurality of layers of broken stone having 55 hydrocarbon binder between the layers, the quantity of binder being gaged to preserve cushioning effect in the broken stone due to said broken stone having unfilled voids therein, the hydrocarbon binder being effective 60 to serve only as a binder.

In testimony whereof I affix my signature in the presence of two witnesses.

HARRY G. JENNISON.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
