

J. C. TRAVILLA.
PAVEMENT AND PROCESS FOR MAKING THE SAME.
APPLICATION FILED NOV. 4, 1908.

936,493.

Patented Oct. 12, 1909.

Fig. 1.

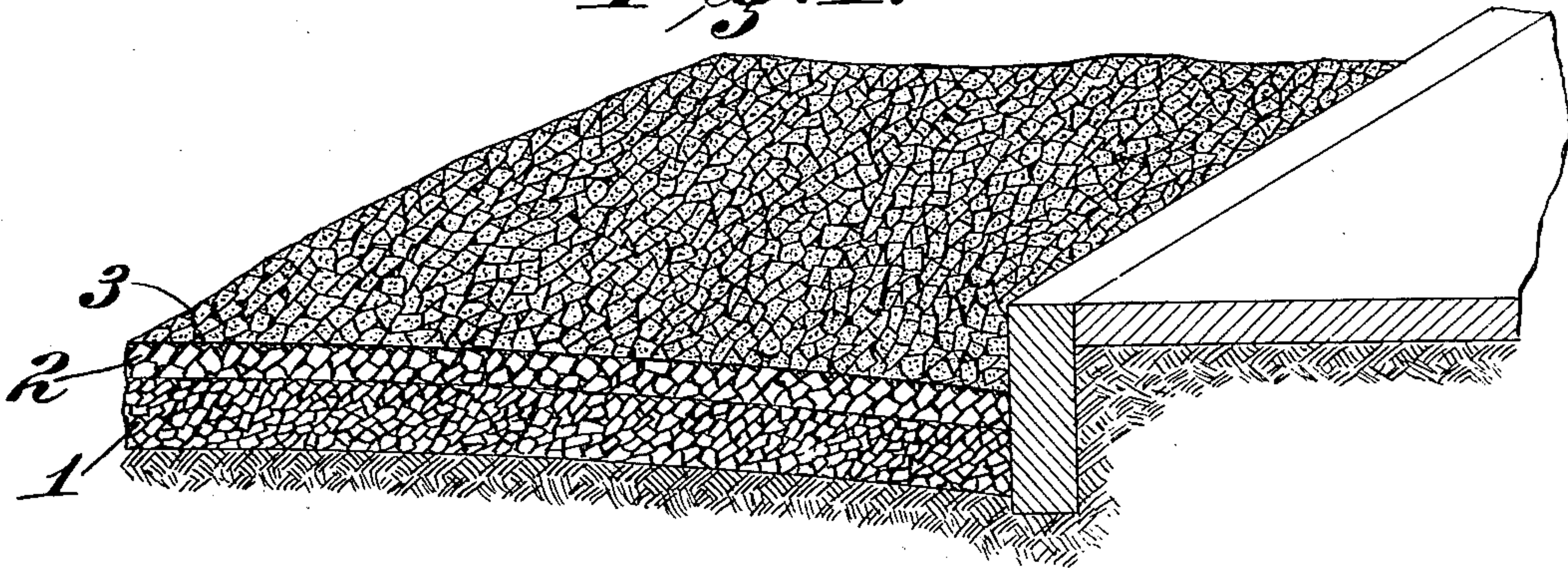


Fig. 2.

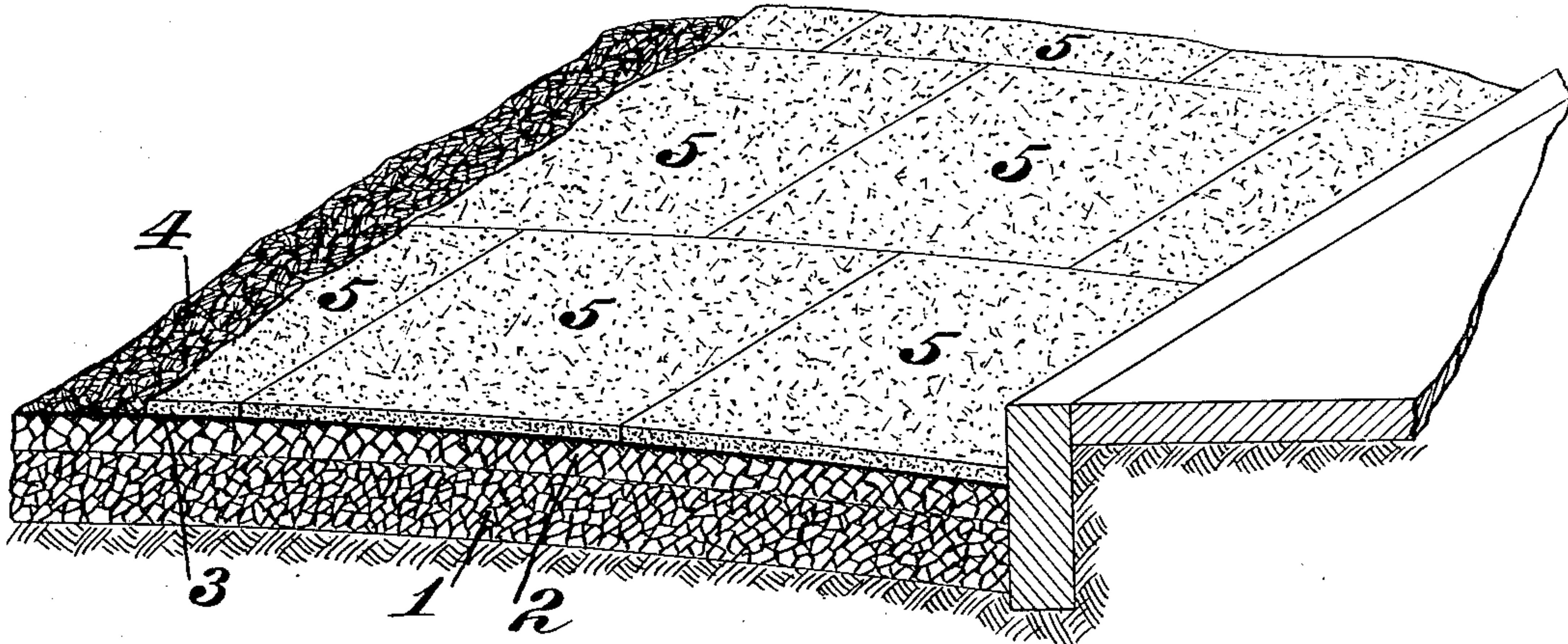


Fig. 4.

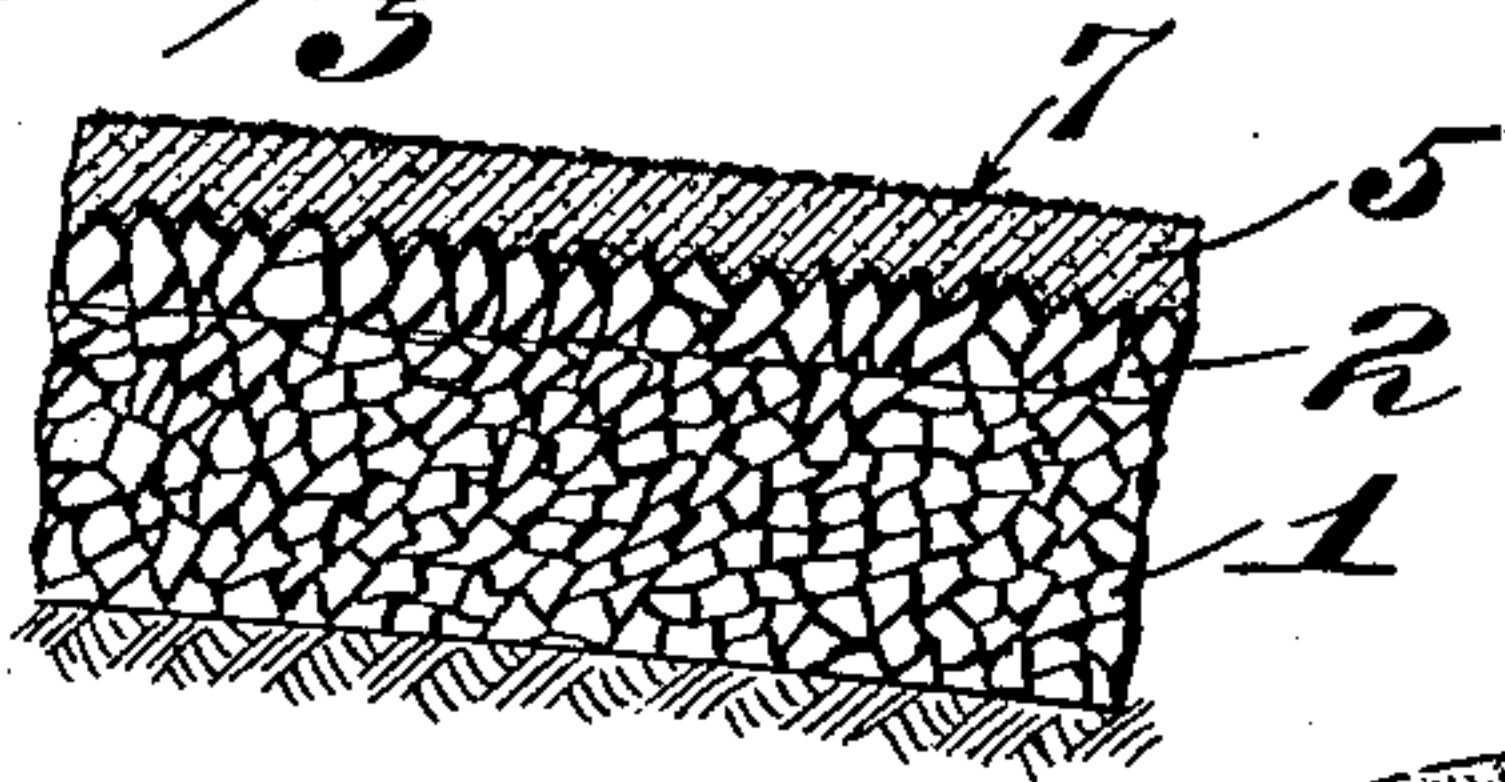
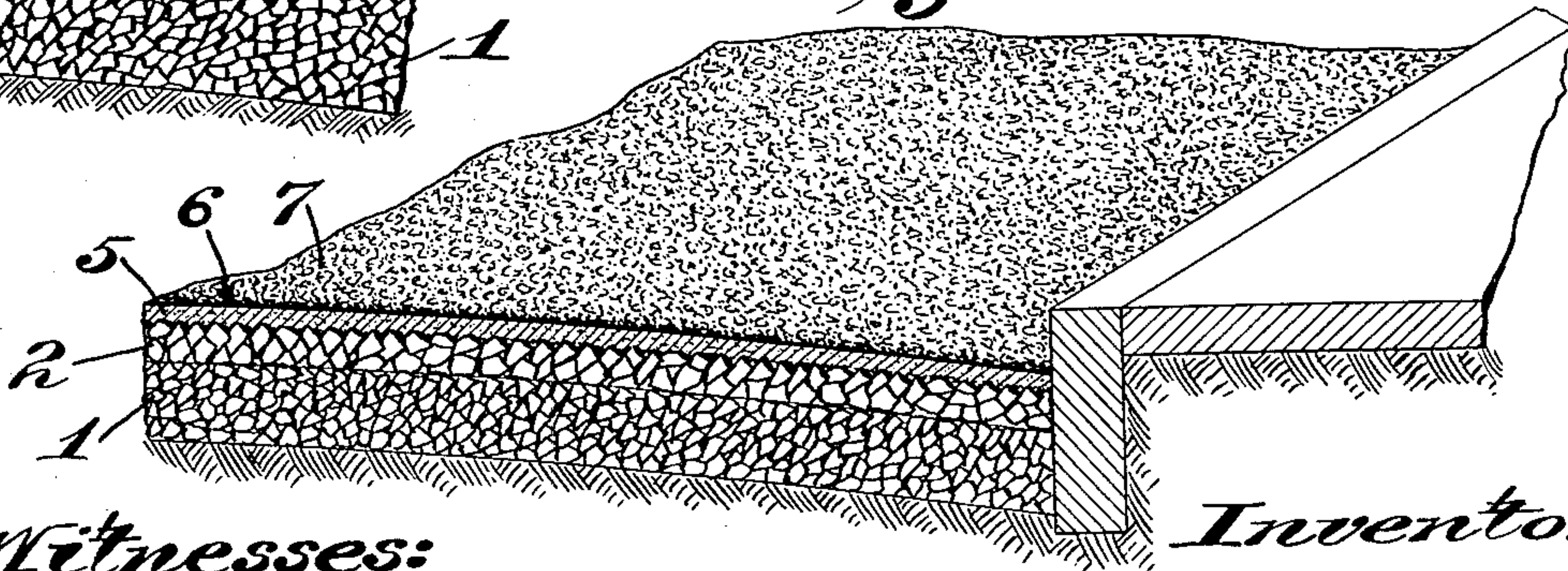


Fig. 3.



Witnesses:

G. A. Pennington
Edgar T. Farmer.

Inventor:

James C. Travilla,
By *Amos C. Davis,*
Attys.

UNITED STATES PATENT OFFICE.

JAMES C. TRAVILLA, OF ST. LOUIS, MISSOURI.

PAVEMENT AND PROCESS FOR MAKING THE SAME.

936,493.

Specification of Letters Patent.

Patented Oct. 12, 1909.

Application filed November 4, 1908. Serial No. 461,051.

To all whom it may concern:

Be it known that I, JAMES C. TRAVILLA, a citizen of the United States, and a resident of the city of St. Louis and State of Missouri, have invented a certain new and useful Improvement in Pavements and Processes of Making Same, of which the following is a specification.

My invention relates to pavements and has for its principal objects to provide a resilient, durable, waterproof, dustless and comparatively inexpensive pavement; and to provide a simple process of making the same.

It consists principally in compressing against a suitable substructure slabs of a bituminous mixture of such consistency that the material thereof will be forced into the interstices in the upper surface of the substructure and will be spread laterally to form a continuous layer.

It also consists in the details of construction and in the process of construction hereinafter described and claimed.

In the accompanying drawing, which forms part of this specification, and wherein like symbols refer to like parts wherever they occur, Figure 1 is an isometric view, partly in cross section, showing a completed stone base for my pavement; Fig. 2 is a similar view showing the malleable slabs in place on said stone base preparatory to their initial compression; Fig. 3 is a similar view showing the top coating and cross section of the pavement before the final compression; and, Fig. 4 is a fragmentary cross-section of the completed pavement.

My pavement comprises a substructure of any suitable construction. The substructure comprises a base 1 of macadam, telford slag, gravel, cinders or other like material. This material is suitably bonded and thoroughly rolled. Upon this base is a course or layer 2 of stone, preferably, macadam ranging in dimension from one and one half inches to two and one half inches, which is lightly rolled or compressed in position. Over this upper layer 2 is spread a thin coating 3 of sand or particles of stone or stone dust sufficient to partially fill the void spaces or interstices therein. Then a coat 4 of bituminous cement is applied over the surface thus

formed, and previously prepared slabs 5 are laid on such cement.

The slabs are made of a lightly compacted mixture consisting of bitumen, sand, and stone particles and dust in such proportion that the slab will maintain its shape while being handled and transported but will be sufficiently soft or plastic to permit it to be squeezed into the spaces in the surface of the substructure. It is believed to be unnecessary to specify any particular composition or proportion of ingredients, as the art fully discloses how to secure the desired qualities. The slabs 5 are laid close to each other and are given a preliminary compression sufficient to squeeze the material of the lower portion thereof into the interstices in the upper surface of the substructure. Then, a coating 6 of bituminous cement is applied to the top and sides of the partially compressed slabs. Before the cement hardens, a thin layer 7 of small particles of sharp stone, or sand or mineral dust is applied thereon, and then the pavement is rolled or compressed with a heavy roller to the ultimate extent. By this last rolling operation, the following results are produced: The particles of stone and sand and dust are forced into the bituminous body of the slabs, the slabs are compressed vertically so that the substance thereof completely fills the upper interstices of the substructure, they are compacted to form a hard wearing surface; and at the same time, the slabs are spread or elongated so that the sides thereof are consolidated or welded together to form a substantially monolithic layer. In consequence of this method of construction, the bituminous mixture which originally consisted of a multiplicity of slabs becomes ultimately a continuous, hard and smooth layer of substantially uniform thickness. By reason of its being made of portable slabs of uniform thickness the application thereof may be made with the greatest rapidity and assurance of accuracy, without any particular skill; and as the slabs are sufficiently plastic at the ordinary atmospheric temperature, it is unnecessary to heat them *in situ*; and thus great economies are effected. By reason of the material of the slabs being compressed

into the interstices of the substructure, a strong continuous mechanical interlock is formed between them, which will prevent the creeping of the surface layer and will bind the stone together. The application of the surface coat of cement serves to harden and more effectually waterproof the wearing surface and to cooperate in the welding or coalescence of the abutting ends of the slabs, and the topmost layer of the particles of stone serves to harden and roughen the wearing surface. It is noted, however, that said top coat of cement and the finish coat of stone particles may both be dispensed with, and that the coat 4 of bituminous cement is also unnecessary.

Obviously, my invention admits of considerable variation from the details hereinbefore specified. For instance, instead of the substructure being formed as hereinbefore described, it may consist of a single thick layer of macadam or it may consist of any other common type of construction. So, too, the slabs may be applied directly to the substructure without the interposition of sand, cement or other substance. Again, the composition of the slabs may be varied as desired, and either the sand, the stone dust or the small stone or particles of stone may be omitted, so long as there is a sufficient aggregate of stony matter. I do not, therefore, wish to restrict myself to the details of construction hereinbefore described.

What I claim is:

1. A pavement comprising a substructure and a layer of lightly compacted malleable slabs compressed thereon.

2. A pavement comprising a substructure of macadam and a layer of lightly compacted malleable slabs of bituminous mixture compressed into the interstices thereof.

3. A pavement consisting of a substructure and a layer of lightly compacted malleable slabs of bituminous mixture compressed thereon, said substructure comprising a base of macadam and a layer of coarse macadam thereon.

4. A pavement consisting of a substructure and a layer of malleable slabs of bituminous mixture compressed thereon, said substructure comprising a base of macadam and a layer of coarser macadam thereon, and sand and stone screenings partially filling the interstices of said coarser layer.

5. A pavement consisting of a substructure, a layer of malleable slabs compressed thereon, and a coat of bituminous cement between them, said substructure comprising a base of macadam, a layer of coarse macadam thereon, and sand and stone screenings partially filling the interstices of said coarser layer.

6. A pavement consisting of a substructure, a layer of malleable slabs of bituminous

mixture compressed thereon, a coat of bituminous cement between said substructure and said slabs, a coat of bituminous cement on said slabs and a thin layer of small particles of stone dust or sand compressed into said slabs.

7. A pavement consisting of a substructure, a layer of malleable slabs of bituminous mixture compressed thereon, a coat of bituminous cement between said substructure and said slabs, a coat of bituminous cement on said slabs and a thin layer of small particles of stone compressed into said slabs, said substructure comprising a base of macadam, a layer of coarse macadam thereon, and sand partially filling the interstices of said finer layer.

8. A pavement comprising a substructure having a rough upper surface and a layer of malleable slabs compressed into the interstices of such surface, said slabs consisting of a mixture of bitumen, sand and stone dust shaped with slight pressure so as to render the finished slabs malleable at ordinary temperature.

9. The process of building a pavement which consists in forming a substructure, applying thereto lightly compacted malleable slabs and compressing said slabs into the surface interstices of such substructure.

10. The process of building a pavement which consists in forming a base of macadam and a layer of coarse macadam, and applying thereto lightly compacted malleable slabs of bituminous mixture and compressing said slabs into the interstices in said upper layer.

11. The process of building a pavement which consists in forming a substructure, coating the same with bituminous cement, applying lightly compacted malleable slabs on said cement, and compressing said slabs into the surface interstices of such substructure.

12. The process of building a pavement which consists in forming a base of macadam and a layer of coarser macadam thereon, partially filling the interstices of said upper layer with sand or stone particles and then applying a coat of bituminous cement and then applying malleable slabs of bituminous mixture and compressing said slabs to fill the interstices in said upper layer.

13. The process of building a pavement which consists of forming a suitable substructure, coating the same with bituminous cement, applying malleable slabs on said cement, partially compressing said slabs, then coating the partially compressed slabs with bituminous cement and covering the same with small particles of stone, and then rolling the surface to compress and spread said slabs into a continuous layer.

14. The process of building a pavement

which consists in forming a base of macadam and a layer of coarser macadam thereon and partially filling the interstices of said upper layer with sand or stone particles,
5 coating the surface thus formed with bituminous cement and then applying malleable slabs of bituminous mixture on said cement, partially compressing said slabs, then coating the partially compressed slabs with
10 bituminous cement and covering the same

with small particles of stone, and then rolling the surface further to compress said slabs and spread them into a continuous layer.

Signed at St. Louis, Missouri, November 2, 1908.

JAS. C. TRAVILLA.

Witnesses:

JAMES A. CARR,
J. B. MEGOWN.