

UNITED STATES PATENT OFFICE.

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CONCRETE PAVEMENT.

SPECIFICATION forming part of Letters Patent No. 413,278, dated October 22, 1889.

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To all whom it may concern:

Be it known that I, THOMAS F. HAGERTY, a citizen of the United States, residing at San Francisco, county of San Francisco, State of California, have invented new and useful Improvements in Bituminous Concrete Pavements for Streets, Sidewalks, Roofing, and Flooring, of which the following is a specification.

Heretofore asphaltum concrete pavements when laid on streets or sidewalks in a homogeneous mass required to have the foundation-bed prepared for the reception of the bituminous covering, and the cumbersome heating apparatus and fuel, asphaltum, tar, oil, gravel, sandstone, &c., were brought to the place, encumbering the streets for days and weeks, involving a great deal of time and labor. To obviate this difficulty is one of the main objects of my invention; and to this end my improved process consists in preparing a solid foundation with as even a surface as possible by laying a sufficient thickness of coarse rubble and a top coating of a thin grout prepared with sand and cement, or with evenly-laid stone blocks having a grout of cement and sand poured between the interspaces, or in the case of sidewalks preparing the surface with stone rubble and leveling off the top with either sand or mortar, the object in all cases being to secure a well-prepared even surface to receive the top dressing, which can be accomplished by any of the well-known methods now in use.

Previous to laying the top dressing on a road-bed which has been coated with a grout cement, I coat the same when dry with a wash of hot pitch-tar all over the surface. Upon a foundation thus prepared I lay slabs of bituminous sandstone or other concrete asphaltum compounds of a uniform thickness. In practice I prefer to use bituminous rock—such as is now obtained in many parts of California—for the reason that nature has provided it with the greatest amount of fine quartz, sand, or gravel with the least practical quantity of volatile carbonaceous matter to unite said sandy particles, and cause them to adhere and form a black, firm, compact elastic mass.

In order to better unite the bituminous sandstones of different qualities and consist-

ency to produce the best results obtainable, and for sake of economy in handling and transportation, the slabs can be manufactured with better advantage at the mines. The material is reduced by heat to the proper consistency by any of the well-known methods, and by suitable presses and molds are formed into slabs of, say, two inches thick, or of any practical thickness and size to conveniently handle without bending or breaking.

I do not confine myself to reducing the natural bituminous sandstone to a plastic consistency by means of artificial heat in order to press it in the molds, as by sufficient pressure applied to the natural material the disintegrated particles will be forced to adhere and form a homogeneous mass.

The process of manufacturing the slabs or blocks forms no part of the present invention, and may be accomplished by any of the well-known methods.

Slabs thus prepared are laid upon a road-bed or sidewalk previously described as close as practicable, and by means of a heavy heated roller are pressed, so that by the heat and pressure applied the edges are caused to unite and the under side to adhere to the pitch-tar coating, thus forming a level homogeneous mass.

It is not an essential part of my invention to have a road-bed of a hard, even, uniform surface, as it is obvious that when the heat and pressure are applied the plastic mass will conform to any slight unevenness of surface that may exist; nor is it essential to previously wash the surface of the road-bed with pitch-tar, as the nature of the material used may be such as to have sufficient volatile carbonaceous matter to cause it to adhere without such coating.

I claim—

1. The process of covering streets and other surfaces with bituminous or concrete substances capable of being softened by heat in order to make pavements, floors, or roofs, consisting, first, in pressing the bituminous or concrete substance into blocks or slabs; secondly, laying these blocks or slabs upon the roadway or surface to be covered, so that their edges will be in juxtaposition, and, thirdly, in passing a heated iron or roller over the edges of the adjoining blocks or slabs, so

as to unite their edges by heat, substantially as described.

2. The process of making pavements, roofs, and floors, consisting, first, in preparing a
5 foundation of coarse rubble and a top coating of thin grout; secondly, coating the surface of the foundation with hot pitch-tar; thirdly, placing upon said pitch-coated foundation blocks or slabs of bituminous or concrete

substances which are capable of being soft- 10
ened by heat; fourthly, uniting the edges of such bituminous or concrete blocks or slabs by means of heat, substantially as above described.

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Witnesses:

JOHN HAGERTY,
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