106. COMPOSITIONS,
COATING OR PLASTIC.

98

187,926

Cross Reference

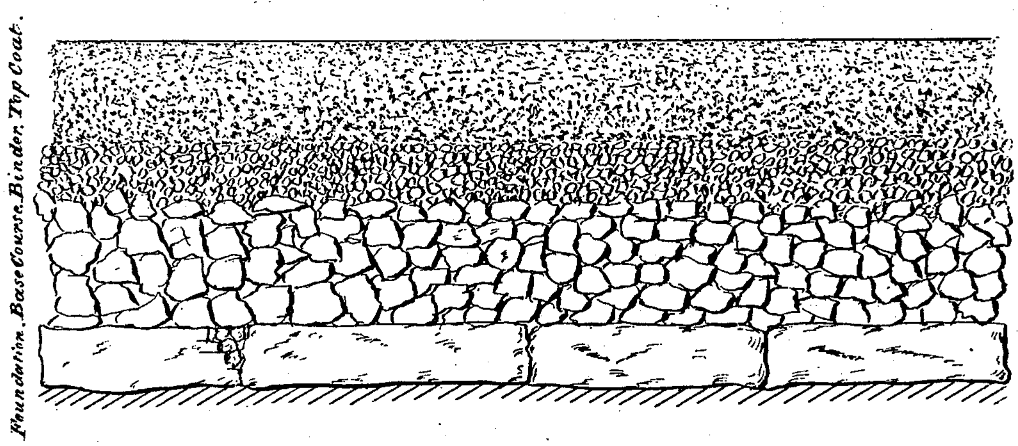
Examiner.

J. G. STAFFORD & J. W. PHILLIPS.

CONCRETE PAVEMENT.

No. 187,926. Patented Feb. 27, 1877.

Asphalt
Coal tar (boiled)
Oil
Oxide of Iron
Brimstone



WITNESSES

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106/98 XR

187,926

UNITED STATES PATENT OFFICE.

JOHN G. STAFFORD AND JAMES W. PHILLIPS, OF WASHINGTON, D. C.

IMPROVEMENT IN CONCRETE PAVEMENTS.

Specification forming part of Letters Patent No. **187,926**, dated February 27, 1877; application filed January 19, 1877.

To all whom it may concern:

Be it known that we, JOHN G. STAFFORD and JAMES W. PHILLIPS, of Washington, in the county of Washington and District of Columbia, have invented a certain new and useful Improvement in Concrete Pavement, of which the following is a specification, reference being had to the accompanying drawing, which is a vertical section of our improved pavement.

The improved pavement consists, essentially, of a foundation of slabs and broken stone thoroughly bedded and packed. A base-course of broken stone, mixed with chemically-prepared bitumen, a binder-course of broken stone, heated and mixed with chemically-prepared bitumen, and a top or surface coat, consisting of clean sand, gravel, hydraulic cement, and a bituminous compound.

The invention further consists in the composition of asphalt coal-tar, boiled at a high temperature, oil, oxide of iron, and brimstone, mixed with clean sand, gravel, and hydraulic cement, to form a top or surface coat of an asphalt or concrete pavement, as hereinafter described.

In carrying out our invention, we proceed as follows to lay a ten to fifteen inch pavement:

Foundation.

First course: We lay stone slabs from four to six inches thick, and any width or length, laid close, the interstices being filled with broken pieces of stone.

Second course: We break stone upon these slabs to bring the surface to an even grade to fill all interstices between joints, and to thoroughly bed the slabs for a foundation. If this foundation is laid upon moist or marshy ground all the interstices are filled with hydraulic or bituminous concrete, as preferred.

Base-course.

Third course: Any hard broken stone, from two to four inches in diameter, mixed with chemically-prepared bitumen, is spread evenly to the proper depth to suit the depth of pavement required, and thoroughly rolled with a steam-roller, or rammed with a steam-rammer, to work the points or sharp corners of the broken stone into the interstices of the foundation-course.

The term "chemically-prepared bitumen" is here applied to coal-tar which has been boiled or distilled at a heat of 300°, more or less, the effect of which high temperature is to drive off all nitrogenous matter, the presence of which would render the material liable to acidulation, and consequent injury by atmospheric exposure, and, also, to be injuriously acted on by acids in foreign matter which may come in contact with it.

Binder-course.

Fourth course: Broken stone, from one-half to one and one-half inches in diameter, free from dust, is heated to a little more than blood-heat, and then thoroughly mixed with chemically-prepared bitumen, or coal-tar boiled or distilled at a heat of 300°, to which chemically-prepared bitumen, ten per cent. of the bitumen as prepared for the top coat, is added. It is then spread evenly over the street, and rolled and cross-rolled with a steam and stone roller to work the stone in place, and to consolidate the binder and base course.

Top or surface coat.

Fifth course: A compound of pulverized limestone or blue-stone, thirty parts; fuller's earth or white clay, five parts; fine hard cement, five parts; clean sharp angular sand, thirty parts; and Peekskill gravel, screened through a half-inch screen, thirty parts. After being thoroughly mixed it is then heated in rotary heaters; then mixed by suitable machinery with the hereinafter-described bituminous compound. It is then spread evenly over the binder-course, and rolled and cross-rolled first by hand, and then with steam and stone rollers, the composition being as follows: Three hundred and ninety-six pounds of refined asphalt, two hundred and four pounds of chemically-prepared bitumen, thirty-six pounds of oil, one hundred and twenty pounds oxide of iron, fifteen pounds of rolled brimstone, thoroughly mixed in suitable kettles at a proper temperature, according to the season, this mixture being mixed with chemically-prepared bitumen, in the required proportions to suit the climate and travel.

Having thus described our invention, the following is what we claim as new and desire to secure by Letters Patent—

1. The pavement herein described, consisting of a foundation of slabs and broken stone, a second course of broken stone and bituminous matter, a binder-course of heated broken stone and prepared bitumen, and a top course of clean sand and gravel, mixed with pulverized limestone or blue-stone, hydraulic cement, and bituminous matter.

2. The bituminous compound, consisting of asphalt, boiled coal-tar, oil, oxide of iron, and brimstone, mixed in about the proportions stated, and applied, together with clean sand, gravel, and hydraulic cement, to form a surface-coat, substantially as herein described and specified.

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