UNITED STATES PATENT OFFICE.

DANIEL C. HELLER, OF READING, PENNSYLVANIA.

IMPROVEMENT IN PAVEMENTS.

Specification forming part of Letters Patent No. **185,529**, dated December 19, 1876; application filed September 16, 1876.

To all whom it may concern:

Be it known that I, DANIEL C. HELLER, of Reading, in the county of Berks and State of Pennsylvania, have invented a new and valuable Improvement in Composition Pavements; and I do hereby declare that the following is a full, clear, and exact description of the construction of the same.

This invention has relation to improvements in composition pavements; and it consists in the novel composition of the parts forming the base and the top, and the pavement as constructed therefrom, as hereinafter shown and described.

In order to form the base of my pavement, the following ingredients are mixed together, in the proportions named, to wit: Two and one-half bushels of gravel or small stone; one-eighth of a bushel of hydraulic cement; one and three-fourths gallon of crude gas-tar. These ingredients are designed to be thoroughly incorporated together. The hydraulic cement forms an adhesive paste, which holds the gravel and stone firmly together after it is rolled down.

To form the upper portion or top of my pavement the following ingredients are mixed together, in the proportions mentioned, to wit: One and one-fourth bushel of dry sharp sand; one-fourth of a bushel of dry sifted coal-ashes; one-eighth of a bushel of dry-slaked lime; one pound of flour of sulphur; one quart of ordinary paint-drier; three pounds of dissolved asphaltum; three gallons of heated crude tar. All of these ingredients are to be thoroughly mixed together on a suitable platform before being laid down.

The foundation of the pavement having been prepared by suitable grading, the composition for the base is laid thereon about two inches thick, and then rolled down with a heavy roller until it is sufficiently firm. Over the base is then spread the top-dressing to the depth of about one inch. This is then rolled down with a heavy roller, and the pavement is ready for use.

This is essentially a cold-composition pavement. It hardens at once upon being laid in the manner described, and is firm, durable, and elastic.

In this pavement it is designed to avoid the use of a large proportion of crude tar, which contains a great deal of oil and water, which can only be absorbed by the action of the atmosphere after a length of time. So, also, the use of pitch and distilled tar, and other ingredients which harden at once when taken from the fire, is designed to be avoided.

In mixing my ingredients the crude tar is, of course, heated, for the purpose of thinning it and expediting the handling thereof. This heating also improves its quality, assisting to destroy the refuse matter.

Asphaltum is used on account of its speedy hardening properties; but it must be employed sparingly, as specified, and with great care. The use of a larger quantity would cause the pavement to be hard and brittle, and without the elasticity which is so important an object in the construction of pavements.

Paint-drier is found to be an excellent assistant in aiding to speedily dry the composition, and it also adds to its elasticity.

Dry sifted ashes serve an excellent purpose in making the pavement tough and compact, and they assist in some degree the drying properties of the composition.

Dry-slaked lime, being of a hot and live nature, aids materially in keeping the composition in a somewhat moist and live condition, when it is exposed in bulk to the surrounding atmosphere; and when it is rolled down, the lime assists in drying it.

Sulphur aids in hardening the pavement, and it also assists in drying it.

This composition need not be laid down as soon as prepared. It improves with age, becoming more tough and elastic, and it can be kept in excellent condition in bulk for a long time.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The top-dressing for pavements, consisting of sand, sifted coal-ashes, slaked lime,

sulphur, paint-drier, asphaltum, and tar, compounded in the proportions specified.

2. The pavement formed of a base compound of gravel, hydraulic cement, and crude gas-tar, and a top-dressing of sand, sifted coal-ashes, slaked lime, sulphur, paint-drier, asphaltum, and tar, rolled down in two successive layers, substantially as herein set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

DANIEL C. HELLER.

Witnesses:
ALLEN H. GANGEWER,
GEO. C. SHELMERDINE.