

UNITED STATES PATENT OFFICE

JAMES R. McCLINTOCK, OF NEW ORLEANS, LOUISIANA.

IMPROVEMENT IN CONCRETE PAVEMENTS.

Specification forming part of Letters Patent No. **175,369**, dated March 28, 1876; application filed April 5, 1875.

To all whom it may concern:

Be it known that I, JAMES R. McCLINTOCK, of New Orleans, in the parish of Orleans and State of Louisiana, have invented certain Improvements in Concrete Pavements, of which the following is a full, clear, and exact description:

The object of my improvement is to remedy defects in that class of concrete pavements in which coal-tar, or the residuum of pitch or coal-tar, termed artificial asphaltum, is used as the cementing or the basis of the cementing property; and the nature of my invention consists in adding, as an additional element or ingredient to all such paving compositions, crude asphaltum, either Trinidad or Cuban, the same having been previously pulverized or reduced to a fine powder.

It is a fact that practical experience has fully demonstrated that neither coal-tar nor artificial asphaltum can effect, in connection with any composition that is exposed to the effects of moisture and the intense heat of the summer sun, a permanent and durable concretion, as when subjected to the combined destructive action of moisture and heat, as exposed pavements inevitably are, a certain evaporation takes place, which at first softens the composition, and which is followed by a rapid decay, ending in the disintegration and breaking up of the entire mass; while, on the other hand, a limited experience in our own and over a century in foreign countries has demonstrated the permanence and durability of the asphaltic pavement. Yet there are difficulties which exist in connection with the use of asphaltum, notwithstanding its positive and undeniable advantages, which have caused its use to be almost entirely superseded by coal-tar or artificial asphaltum. These difficulties chiefly consist in connection with the intense heat that is required to reduce asphaltum to a liquid, and which involves a great expense not only in regard to fuel, but in rapid destruction and burning out of the metallic kettles in which the liquidizing of the asphaltum is effected, and which not infrequently, as is well known, also literally burns out and destroys some of the most important antiseptic properties of the asphaltum; and, again, the ad-oils which are now almost invariably introduced to facilitate the melting or the reducing of the asphaltum to a fluid, as is well

known, contain certain deleterious acids, and which render the asphaltum most destructive of all species of wood, and, therefore, really unfit it for use, in connection with wooden pavements, either to lock together or unite the blocks, or as a coating or top dressing for the same.

Now, to secure, in connection with coal-tar and artificial asphaltum, and which have cheapness and a saving of both time and labor in connection with their use to recommend them, all the positive intrinsic advantages as to permanency or durability which asphaltum is known to possess, and, if at any, a most trifling additional cost, constitutes the chief advantage of my invention.

The construction and operation of my invention are as follows: I simply take the crude asphaltum, either Trinidad or Cuban, and pulverize or reduce the same to a fine powder, and mix it with the coal-tar or artificial asphaltum either before it is mixed with the other ingredients that are to form the paving composition, or as they are poured in. It matters not when the powdered asphaltum is added, provided the coal-tar or artificial asphaltum is sufficiently liquefied to so take it up through a proper stirring of the same, so as to insure its perfect incorporation with the coal-tar or artificial asphaltum in the composition.

This powdered asphaltum I purpose to add to all paving compositions or wooden or stone pavements in connection with the construction of which either coal-tar or artificial asphaltum are now used; and I desire it distinctly understood that I also consider all roofing compositions embraced within the scope of my invention.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

Trinidad or Cuban asphaltum, pulverized or reduced to a powder, as an ingredient in all paving and roofing compositions where coal-tar or artificial asphaltum is used as the cementing or the basis of the cementing property, as and for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES R. McCLINTOCK.

Witnesses:

EDWIN JAMES,
JOS. T. K. PLANT.