

# United States Patent Office.

EDWARD JOSEPH DE SMEDT, OF NEW YORK, N. Y., ASSIGNOR TO NEW YORK IMPROVED ANTHRACITE COAL COMPANY, OF SAME PLACE.

*Letters Patent No. 103,581, dated May 31, 1870.*

## IMPROVEMENT IN LAYING ASPHALT OR CONCRETE PAVEMENTS OR ROADS.

The Schedule referred to in these Letters Patent and making part of the same

*To all whom it may concern:*

Be it known that I, EDWARD JOSEPH DE SMEDT, of the city, county, and State of New York, have invented a new and useful Improvement in Laying Asphalt or Concrete Pavements and Roads, designed to be applied or adopted more especially in those localities where gravel and broken stone cannot be readily obtained, as, for instance, in Savannah, Georgia, and vicinity.

Sand, gravel, and broken stone are used in laying asphalt pavements and roads. Sand alone has not hitherto been used, on account of the difficulty in mixing the asphalt with it, as one part of the latter to about seven of the former is required, and the mixture thus made is too stiff or thick to be worked, and the substances thoroughly incorporated together by a machine, without heating the asphalt to a degree that seriously impairs its virtue for paving purposes.

My invention is designed to overcome this difficulty, and, to that end, I first mix the asphalt, one part of the latter with about five parts of sand.

These substances can be well mixed and incorporated together in the proportions last named, under a comparatively moderate degree of heat, which will not in the least impair the character of the asphalt for paving purposes.

The surface on which the road or pavement is to be laid is properly graded, and I first put a thin layer of hot sand upon it, about half an inch in thickness, and upon this layer of sand I put a layer of hot sand and asphalt, that which was previously mixed, this last layer being about one inch in thickness.

Over this layer of sand and asphalt I pass a hot roller, and then apply a thin layer of hot sand, half an inch thick, and over the latter a layer, an inch thick,

of the hot asphalt and sand, which is rolled with a hot roller, as before.

This is repeated until the desired thickness for the road or pavement is obtained.

By this process or mode of laying I obtain in the road or pavement the proper proportions of sand and asphalt without any difficulty whatever, and insure the proper or thorough incorporation of the sand and asphalt, and sand layers, so that a homogeneous mass is obtained throughout.

In carrying out this invention, it is important to observe that the asphalt used should be of that kind which will fuse at a moderate degree of heat, say, about 170° Fahrenheit, and if a harder and less fusible asphalt be used, it must be incorporated with a substance that will soften it or allow it to fuse at a lower temperature.

For this purpose, I add to a hard asphalt a product of the distillation of asphalts or petroleum oils, the heavy oils termed the paraffine series, and also where the smell is not objectionable, the residuum of the distillation of petroleum oils, but I prefer to all those above-named oils the heavy crude petroleum oils, of a gravity not higher than 40° Baumé, at 60° Fahrenheit.

Having thus described my invention,

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

The laying or forming of asphalt or concrete roads and pavements by means of alternate layers of sand, and asphalt and sand mixed, and treated or operated upon in the manner substantially as set forth.

Witnesses:

E. J. DE SMEDT.

THEO. TUSCH,  
A. R. HAIGHT.