

UNITED STATES PATENT OFFICE.

KARL LUDWIG VALENTIN ZIMMER, OF HAMBURG, GERMANY.

CONSTRUCTION OR PREPARATION OF ROAD-SURFACES AND PAVEMENTS.

1,010,209.

Specification of Letters Patent. Patented Nov. 28, 1911.

No Drawing.

Application filed April 23, 1910. Serial No. 557,277.

To all whom it may concern:

Be it known that I, KARL LUDWIG VALENTIN ZIMMER, manufacturer, a subject of the German Emperor, residing at Hamburg, Germany, have invented certain new and useful Improvements Relating to the Construction or Preparation of Road-Surfaces and Pavements, of which the following is a specification.

This invention relates to the preparation of road surfaces and pavements from gravel, pebbles or other stone material and a suitable binding substance, with which the said material is coated.

Hitherto the tar, pitch or similar material has been applied to the road-metal or gravel by purely mechanical means, the road-metal being first dried, if necessary, and then intimately mixed with the previously heated binding substance, such as tar or pitch, in consequence of which an undesirably large quantity of binding material had to be employed, in order to produce a solid and even surface, and the binding substance was liable to form patches or nests, which in hot weather become soft and did not offer sufficient resistance to the load, especially in the case of heavy motor-traffic.

The present invention has for its object to provide a method of coating the road-metal or gravel, whether dry or wet, uniformly with the necessary quantity of binding material. For this purpose I first convert the oily or other water repellent binding substance, such as coal-tar, tar-oil, various kinds of pitch, resin, asphalt-products, and goudron, into a soluble or emulsified condition which may be effected by known means, I then mix the solution or emulsion with the gravel, pebbles or other suitable road metal or stony particles and then reconvert the solution or emulsion into a precipitate or coherent deposit by treatment with acids, preferably dilute hydrochloric acid, or other suitable means. As such means are already known, they need not be

described. In this manner each individual particle of the pavement material may be enveloped with the binding substance in a state of fine division, such as cannot be produced by purely mechanical means. The usual waste of binding substance and unequal distribution of the same is thereby avoided.

The material produced as described is distributed in the usual manner on the road or other base to be covered and a uniform surface produced by means of a road roller or other known means, either immediately or after the material has been left exposed to the atmosphere for a suitable time.

What I claim is:—

1. The process for forming road surfaces and pavements by means of stony particles and a water-repellent binding substance, which consists in treating the stony particles with a solution or emulsion of the said binding substance to form a coating, subsequently precipitating the said binding substance by chemical treatment, to form a coherent deposit, and finally finishing the road surface mechanically in the usual manner, substantially as described.

2. The process for forming road surfaces and pavements by means of stony particles and a water-repellent binding substance, which consists in treating the stony particles with a solution or emulsion of the said binding substance to form a coating, subsequently precipitating the said binding substance by chemical treatment to form on the stony particles a coherent deposit, then distributing the coated particles uniformly on the road base and finally finishing the surface with a roller, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

KARL LUDWIG VALENTIN ZIMMER.

Witnesses:

MOSE MILLER,

ERNEST H. L. MUMMENHOFF.