

UNITED STATES PATENT OFFICE.

WILLIAM WILSON, OF GENEVA, NEW YORK.

METHOD OF LAYING ASPHALT OR BITUMINOUS ROADWAYS.

SPECIFICATION forming part of Letters Patent No. 748,247, dated December 29, 1903.

Application filed January 31, 1903. Serial No. 141,329. (No specimens.)

To all whom it may concern:

Be it known that I, WILLIAM WILSON, a citizen of the United States, residing at Geneva, Ontario county, New York, have invented a new and Improved Method of Laying Asphalt or Bituminous Roadways, of which the following is a specification.

This invention relates to an improved method of constructing or laying an asphalt or bituminous roadway, the invention having special reference to the construction of an asphaltic or bituminous binder or structural course of stone lying directly underneath the wearing-surface of the roadway.

The invention is designed, first, to prevent the "creeping" or "rolling" in "waves" of the top asphaltic or bituminous surface, which is due ordinarily to the separation of the binder-course from the asphalt-foundation and the consequent disintegration of the pavement; secondly, by strengthening and compacting the binder-course to allow a reduction in thickness of the top or finishing course, so that said finishing-course may be made lighter or of less thickness; thirdly, to provide for such a compacting and strengthening of the binder-course as to allow said course to be made in blocks or sections and transported any distance to the point of construction of the roadway where the stone and other necessary materials are not accessible or available; fourthly, to construct a roadway which when it has become worn and uneven by heavy traffic may be taken up and used over again in the reconstruction of the same roadway or in the construction of a new roadway; fifthly, to so construct the roadway that instead of heating or cutting and prying out sections of the pavement in the usual way the said pavement may be taken up by the use of a machine provided with spiked rollers.

The improved method consists in building or constructing a binder-course of somewhat greater depth or thickness than that now resorted to. The spaces or voids between the stones, which have been previously coated with pitch, asphalt, or other bituminous material and rolled or pressed into place are filled either with sand or screenings, or both, with hydraulic cement mixed with water and flooded into place between the large stones

of the binder-course. This is again rolled, preferably with a heavy steam road-roller, so as to render the structure firm and solid.

It is not necessary that all of the voids or spaces between the stones be filled, but only so many of them as shall render the binder-course of stone more compact than is now obtainable by the methods at present in use. The filler is to be applied after the binder-course proper has been laid or constructed in readiness to be placed in position and not merely applied as a cover or wearing-surface for the roadway.

The method of constructing the binder-course of stone in blocks or sections for transportation does not vary from the above-described process except that when the blocks or sections are separately made or formed in the way above described for handling purposes it is preferred to use a greater amount or proportion of hydraulic cement, as this serves to bind the portions of the block more securely together and enables the blocks or sections to be made of larger size. When the binder-course thus constructed is complete and placed on any suitable foundation used as a base, the top or finishing course of asphalt or bituminous mixture may be laid in any desired thickness. If the weather or the length of time taken to transport the material to the place of construction is such that the top or wearing coat does not unite quickly to or with the binder-course above described, a small quantity of asphalt or other bituminous cement, coal-tar, or pitch may be poured or spread over and upon the binder-course just before the wearing surface is spread or rolled.

The top coat or wearing-surface may be composed of asphalt or other bituminous cement mixed with sand or stone screenings or sand dust or cement or any two or three or all of the substances rolled and compacted into place. The materials used and the manner of construction of the wearing-surface may be the same as are now in general use.

The main feature of the invention resides in the method of construction of the binder-course or the blocks or sections thereof, whereby such binder-course is solidified and strengthened. The binder-course thus forms a solid strong reliable support for the finishing coat or layer, which forms the wearing-

surface of the roadway and the creeping or rolling in waves of such wearing-surface is guarded against. Coal-tar or asphaltic cement may be used in the construction of the blocks or sections of the roadway or pavement. In some cases the top or wearing surface or finishing-coat may be applied to the blocks or sections before leaving the factory, in which case the blocks or sections after being placed in position need only to be filled with cement, either hydraulic or bituminous, the same being applied between the abutting edges between the blocks or sections, so as to firmly and permanently unite the same.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. The method of laying a roadway which consists in laying a course of stones primarily coated with bitumen, compacting and bonding said coated stones together by heavy pressure, then flowing thereon a liquid or plastic filler embodying sand or screenings and cement, so as to partially fill the voids between the stones, next coating the upper surface of the course with asphalt or other bituminous cement, coal-tar or pitch, and lastly applying a final wearing-course upon the upper surface thereof.

2. The method of laying a roadway, which consists of laying a course of stones primarily coated with bitumen, compacting and bonding said coated stones together by heavy pres-

sure, then flowing thereon a liquid or plastic filler embodying sand or screenings and cement so as to partially fill the voids between the stones, next coating the upper surface of the course with asphalt or other bituminous cement, coal-tar or pitch, and lastly applying a final wearing-course thereupon while the previous coating is still soft in order to secure a close union between the binder-course and wearing-surface or final course, substantially as described.

3. The method of laying a roadway, which consists in forming portable blocks or sections each made by primarily coating stones with bitumen, compacting or bonding said stones together by heavy pressure, flowing thereon a liquid or plastic filler embodying sand or screenings and cement so as to partially fill the voids between the stones, coating the upper surface of said blocks with asphalt or other bituminous cement, coal-tar or pitch, then applying a wearing-course while the previous coating is still soft, then laying the blocks or sections upon a suitable foundation and finally uniting or cementing the blocks or sections together at their contiguous edges.

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

WILLIAM WILSON.

Witnesses:

C. D. WOODCOCK,
FRANK M. FISHER.