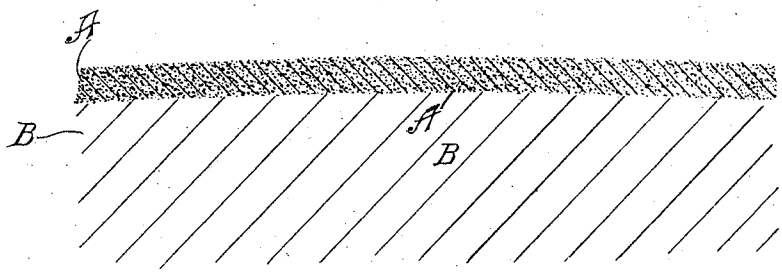
(No Model.)

F. W. MATTERN.

DUSTLESS ROAD, RAILWAY ROAD BED, &c.

No. 602,023. Patented Apr. 5, 1898.

Fig. 1.



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UNITED STATES PATENT OFFICE.

FREDERICK W. MATTERN, OF LOS ANGELES, CALIFORNIA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE DUSTLESS ROADBED COMPANY, OF CAMDEN, NEW JERSEY.

DUSTLESS ROAD, RAILWAY ROAD-BED, &c.

SPECIFICATION forming part of Letters Patent No. 602,023, dated April 5, 1898.

Application filed December 5, 1896. Serial No. 615,008. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK W. MATTERN, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Dustless Roads, Railway Road-Beds, and Race-Courses, of which the following is a specification.

The primary object of my invention is to construct or manufacture roads, railway road-beds, and race-courses which shall be free from dust and from which dust cannot be raised by the wind created by moving trains or the passage thereover of animals and vehicles.

Other objects of the invention are to construct satisfactory roads and road-beds at comparatively slight expense, to protect them from washing during heavy rains, to prevent them from becoming muddy, to prevent the growth of vegetation thereon, and to darken the color of roads which reflect the light and are thus annoying to the eyes.

Another object of the invention is to produce wagon-roads having the elasticity of the natural dirt-roads, thus affording ease and comfort to the horses' feet, while at the same time all discomfort and inconvenience from dust are avoided. In addition to the comfort derived by travelers on dustless roads the protection from dust afforded to orchardists, vineyardists, and others whose growing crops lie along the sides of roads or railways is of great value.

In carrying out my invention I treat the surface of the road or railway road-bed with mineral or other suitable oil, which is heavy and but slightly volatile. I have used in some instances a crude oil of heavy specific gravity and high test mixed with maltha. The manner of treatment will depend upon the nature of the surface to be treated. The oil will readily enter sand, cinder, gravel, or other loose absorbent material; but mechanical means are usually necessary to incorporate it thoroughly with fine dust, upon which it tends to stand in globules.

The accompanying drawing shows a vertical section of a fragment of ordinary road constructed in accordance with my invention.

In the drawing, A indicates a surface coating of ordinary road-dust, cinders, or other mineral dust mixed with maltha and suitable oil to the depth of one-half inch or more, preferably about one inch. The composition thus formed on the road-surface will not rise as dust, but will pack under the wheels and horses' hoofs and will shed rain. The color of soils which reflect the light is changed by the admixture of oil to a dark shade, which affords much relief to the eye.

I will now describe a method of putting my invention into practice on a well-traveled road. When by the traffic thereon the surface of the road has become covered to the depth of from one-half inch to three inches with dust, maltha and crude oil of heavy specific gravity and high test are mixed together and the mixture is applied in parallel lines crosswise of the road, about six inches apart, in quantities sufficient to moisten the dust on the road. Where the dust is one-half inch deep, I would use about seven and one-half gallons of the compound to a square rod. This is done while the dust is dry, and the dust is then thoroughly raked over until the compound is fully incorporated with all the dust on top of the solid hard-pan or sub-body B of the road. The road is then sprinkled with sufficient water to aid in packing the loose surface, which is then rolled to make the same compact, after which the road is ready for travel. The road thus formed will serve the purposes of my invention for ordinary country travel. Where heavier traffic occurs, cinders or oxid of iron or other mineral dust, or both, may be placed on the natural road as a top coating and then be saturated with the maltha and oil or substitute therefor in the same manner as where the natural dust of the road is used.

For railroads the material can be mixed before it is applied to the road-bed. It is found, however, that where railway road-beds are constructed of sand, gravel, cinder, or other material of an absorbent nature the oil may be applied by simply sprinkling it on the sur-

face of the road-bed. The amount of oil necessary to effectively keep down the dust will depend to a certain extent on the nature of the material of which the road-bed is constructed.

I am aware that water has been sprinkled upon streets and highways for the purpose of preventing dust; but the water does not form a permanent mixture or composition with the material of the street or highway, its effect being of a temporary nature. On the other hand, I form a fixed or permanent composition of oil and the fine material of the road or road-bed, differing in its nature, as well as in its objects and effects, from the water-sprinkled surface. In fact, one of the objects of the invention is to throw off water in order to aid in the preservation of the road or road-bed. The mixture of oil and fine material produced does not bake or become hard; but the oil retains its moist condition, and when used on railway road-beds the ballast can be worked as readily in surfacing the track or renewing cross-ties as it could if the oil were not applied.

In the following claims I shall use the term "heavy" oil as a broad term designed to include such non-volatile oils as are suitable for the purposes of my invention, and in the broader claims I shall use the term "road" in a sense broad enough to include railway road-beds, as well as roads, walks, and race-courses.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A road having a covering consisting of fine earthy or mineral matter and heavy oil incorporated therewith, substantially as set forth.

2. A road having a covering consisting of fine earthy or mineral matter and heavy oil and maltha incorporated therewith, substantially as described.

3. A railway road-bed of fine material, such as gravel, sand, or cinder, having its surface treated with heavy oil as and for the purpose set forth.

FREDERICK W. MATTERN.

Witnesses:
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