

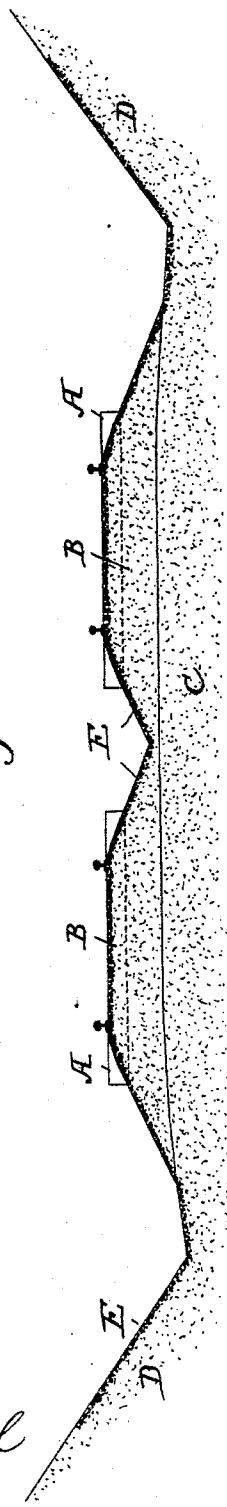
(No Model.)

J. H. NICHOL.
RAILWAY ROADBED.

No. 584,083.

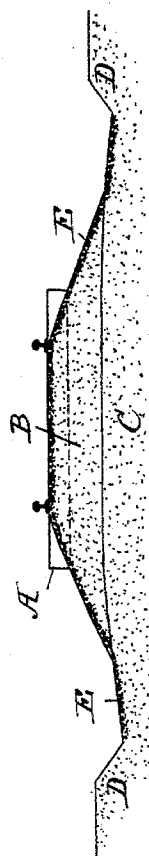
Patented June 8, 1897.

Fig. 1.



Witnesses
John Hinkel
William E. Steff

Fig. 2.



Inventor
James H. Nichol
Watson & Watson
Attorneys

UNITED STATES PATENT OFFICE.

JAMES H. NICHOL, OF CAMDEN, NEW JERSEY.

RAILWAY ROAD-BED.

SPECIFICATION forming part of Letters Patent No. 584,083, dated June 8, 1897.

Application filed March 31, 1897. Serial No. 630,162. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. NICHOL, a citizen of the United States, residing at Camden, in the county of Camden and State of New Jersey, have invented certain new and useful Improvements in Railway Road-Beds, of which the following is a specification.

On many railways the road-bed is composed of fine material, such as gravel and sand, and, in some instances, cinder, coal-dirt, and ordinary earth. Rapidly-moving trains in dry weather raise clouds of dust from such road-beds, which dust is very disagreeable to travelers and also destructive to rolling-stock, as it cuts into the journals and bearings of the locomotives and cars.

One object of my invention is to prevent dust on railways ballasted with fine material, such as gravel, sand, cinder from either bituminous or anthracite coal, and the like. This object I accomplish by treating the superficial layer of the road-bed or ballast with a heavy oil, such as crude petroleum, sufficient oil being used to cause the particles to cohere more or less and prevent them from being raised by the currents of air created by trains.

Other objects I have in view are the preservation of the cross-ties, the prevention of vegetation, and the protection of the ballast and road-bed from rain-water.

In the accompanying drawing I have shown a section of railway through a cut to illustrate my method of treatment.

In the drawing, A indicates the cross-ties; B, the ballast; C, the road-bed proper, and D slopes of the cut.

In carrying out my invention I preferably apply the oil to the surfaces under treatment by sprinkling it from a tank-car. Any suitable apparatus may be used for this purpose. I use a heavy oil which will not evaporate readily, such as crude petroleum, and I apply it in sufficient quantity to cause the particles of the superficial layer of ballast and road-bed to cohere, thus forming a mat or covering which prevents the dust underneath from rising. The oil is sprayed uniformly over the ballast and the ties, and such oil as falls

on the ties tends to shed the water from them and to preserve them. The water is also shed from the surface of the ballast by the oil layer on top, thus keeping the ballast in better condition in wet weather and preventing the water from soaking through the ballast to the lower portions of the ties. My invention, furthermore, prevents the growth of vegetation, which is troublesome upon all railways, and particularly so upon those in locations where sand and gravel are used for ballast, especially in the Southern States.

In cases where the side banks are sandy or likely to become dusty in summer it is sometimes advisable to treat their surfaces also with oil, as above described.

In the accompanying drawing, E indicates the superficial layer which has been treated with oil.

I am aware that water has been sprinkled upon streets and highways for the purposes 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-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-bed and ties.

I am also aware that crude petroleum has been used in some paving compounds in conjunction with other materials to form permanent pavements; but such use is quite different from that contemplated by the present invention. The mixture of oil and fine material does not bake or become hard, but the oil retains its moist condition and 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 the term "road-bed" will be considered as including the ballast and the exposed portions of the adjacent road-bed which are subject to the air-currents created by moving trains.

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

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

2. A railway road-bed and track having the exposed surfaces of the road-bed and ties

treated with heavy oil as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES H. NICHOL.

Witnesses:

GEORGE P. FOSTER,

M. GLEESON.