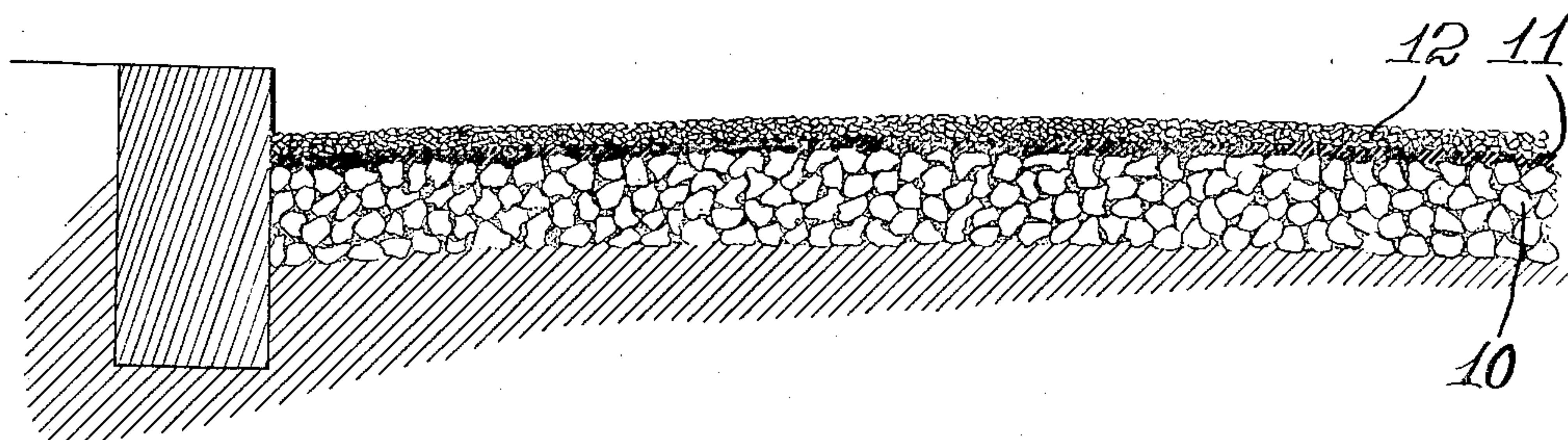


F. S. HUTCHINSON.
ROAD CONSTRUCTION AND ART OF MAKING SAME.
APPLICATION FILED MAY 18, 1908.

918,156.

Patented Apr. 13, 1909.



Witnesses:
Frank L. Stutter.
Ralph Lancaster.

Frank S. Hutchinson, Inventor
By his Attorney
W. B. Hutchinson.

UNITED STATES PATENT OFFICE.

FRANK S. HUTCHINSON, OF FLUSHING, NEW YORK.

ROAD CONSTRUCTION AND ART OF MAKING SAME.

No. 918,156.

Specification of Letters Patent.

Patented April 13, 1909.

Application filed May 18, 1908. Serial No. 433,500.

To all whom it may concern:

Be it known that I, FRANK S. HUTCHINSON, of Flushing, Queens county, New York, have invented a new and useful Improvement in Road Construction and Art of Making Same, of which the following is a full, clear, and exact description.

My invention relates to improvements in the construction of highways, and the object of my invention is to produce a comparatively simple and inexpensive road which can be laid without the use of expensive machinery, and in which the fine materials of the road are sealed in with the coarser parts so that a smooth permanent surface is formed.

Usually in road construction of the macadam or telford type, broken stone of coarser and gradually finer sizes are laid in the road, rolled, the voids filled with the sand or finer crushed stone, the materials being finer as they approach the surface. Sometimes the surface is also provided with a binder of some sort, but generally the fine material used to fill the voids between the coarser particles is not provided with adhesive matter, and consequently when the surface begins to be broken, the finer material is shaken down or sucked up, and in a short time the larger rocks begin to protrude and the road is practically ruined. This is especially true in recent years where so many fast automobiles are used, as these vehicles move with such rapidity that the suction caused has a tendency to draw up the finer materials of the road-bed, and so the road is rapidly ruined. Moreover, the tires of these heavy vehicles have a tendency to break up the surface, and once the surface is broken the finer parts of the road are quickly removed.

My invention contemplates the use of a binder, preferably of bituminous materials such as coal tar or asphalt, and I use it in such a way as to stick together the whole body of the road and form a seal over the coarser parts, thus preventing the breaking up of the road and the sucking up of the finer particles. In carrying out this idea, I provide a layer of broken stone, preferably of a practically uniform size, and fill the voids between the stone with sand, gravel, or finely crushed rock. Over this I spread a quantity of the bituminous binder above mentioned, and the fine materials in the

voids absorb the binder and cause the larger and smaller particles to closely adhere. I use more than sufficient binder to cover the broken stone and into the covering of binder I roll the finer covering of the road, which is preferably of crushed stone, and thus a complete roadway is provided which is cheap, easily laid and durable. The details of this structure will be shown more clearly in the description which follows.

Reference is to be had to the accompanying drawing forming a part of this specification.

The figure is a broken cross section of a road-bed showing my improvements.

The road-bed can be made with one, two, or more courses of broken stone. Where a single layer of the broken stone is used, this is applied in the usual way, though the particles are preferably of a uniform size, and after the layer is placed in position the stone is preferably rolled heavily so as to settle as much as possible. Over this layer of broken stone I spread sand, gravel, or finely crushed rock, which is brushed or otherwise thoroughly worked into the stone, and preferably so that none of the fine material will appear above the stone surface, but rather should be just below the surface. Over this stone I then spread my bituminous binder of coal tar, asphalt, or analogous materials, and this is taken up by the filler between the stones so that the stones and filler form a homogeneous or compact bed. The binder is put on in sufficient quantity to thoroughly saturate the surface of the filler and work up above the stone tops so as to be absorbed by the covering of crushed rock or other fine material which forms the surface of the road, and is thoroughly rolled so as to be incorporated with the binder, and thus a complete homogeneous mass is formed with the broken stone and the filler at the bottom, and the binder and covering at the top, and it will be seen that the mass is so thoroughly fastened together that swiftly running vehicles cannot possibly suck up the filler and that heavy traffic will not quickly disturb the parts. If the road is laid in more than one course, the broken stone or rock is placed at the bottom and rolled, a second course of broken stone laid over this, and the filler applied to the second course, after which the binder and covering are applied as clearly specified.

I am aware that it is not new to use a binder in road construction, but I am not aware that the binder has been used in connection with a filler for the broken stone and
5 in a way to be incorporated with the covering as specified, whereby a practically uniform solid mass with a dense, fine, coherent covering is produced.

It will be seen that no expensive machinery
10 is needed to lay this road, but that the ordinary crushed stone is used, and a roller is the only implement needed to produce a perfect road-bed.

Having thus fully described my invention,

I claim as new and desire to secure by Letters 15
Patent:—

The herein described improved roadway, comprising a layer of broken stone, a fine filler mingled with the stone and with a bituminous binder which is absorbed by the
20 filler and overflows to form a covering for the stone, and a surface formed of crushed rock rolled into the binder.

FRANK S. HUTCHINSON.

Witnesses:

WARREN B. HUTCHINSON,
WILLIAM S. DENISON.