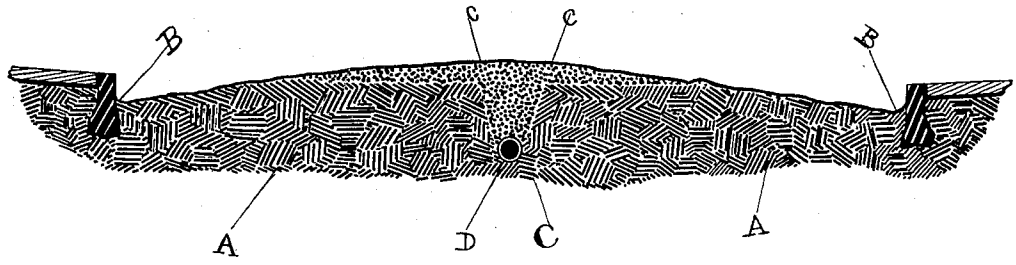
(No Model.)

# H. W. THORNTON.

## METHOD OF CONSTRUCTING ROADS.

No. 323,086. Patented July 28, 1885.




Attest
Carl Spengel
Adair Pleasants

Inventor
Hiram W. Thornton
By H. D. Blakemore Atty.

N. PETERS, Photo-Lithographer, Washington, D. C.

# UNITED STATES PATENT OFFICE.

HIRAM W. THORNTON, OF MILLERSBURG, ILLINOIS.

## METHOD OF CONSTRUCTING ROADS.

SPECIFICATION forming part of Letters Patent No. 323,086, dated July 28, 1885.

Application filed August 5, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, HIRAM W. THORNTON, of Millersburg, in the county of Mercer and State of Illinois, have invented a certain new and useful Improvement in the Method of Constructing Roads, of which the following is a specification.

My invention relates to that class of roads used in many parts of the country commonly known as "mud roads," where the amount of travel or the paucity of suitable material at hand will not justify the employment of an expensive macadam or other like permanent road-bed; and it consists in a system of drains laid in a ditch under the crown of such road, with suitable outlets into culverts or runs with such ditch above the drain, as well as the road-bed on each side of its crown for a considerable distance, supplied with gravel, sand, broken stone, or like porous material, or a combination of any two or more of them, or a combination of any or all of them with the natural soil or clay of the road-bed, whereby the rain falling upon or flowing into or upon such road is absorbed and more readily taken up by the drain, and the road thereby kept comparatively dry and in good condition at all times.

In the drawing, which is a sectional view of a road constructed in accordance with my invention, A is the natural soil of the road. This road is constructed, as roads of the kind have heretofore been made, by running furrows along the sides to form channels or gutters B B, to carry off a portion of the water falling upon or flowing into the road, and throwing up the soil from the furrows to the center of the road, forming a crown in the center and easy slope to either side. Under the center of the road, in a ditch, C, flaring at its top, as at *c c*, at a depth of about three feet, is laid a drain, D, sufficiently large and with slope and outlets sufficient to readily carry off any water which may fall upon the crown or middle portion of the road above the top of the ditch, and any other water which may percolate through the natural soil of the road therein. The soil of the road removed in excavating the ditch is not replaced when the drain is laid, but is thrown back toward the sides, and the ditch, together with the road-bed on either side thereof for half or other considerable portion of the distance between the crown and the sides thereof, (shown by the dotted portion of the drawing,) filled with gravel, sand, broken stone, or other like porous material, or a combination of these or any two or more of them, or a combination of these elements or either of them with the natural soil or clay of the road-bed. The great bane of roads of this character in the past has been the presence of standing water, which accumulates in the wet season and remains thereon for a considerable time, and which, by reason of the character of the soil composing them, as well as insufficient drainage, is prevented from flowing or passing readily off, its removal being accomplished in a great measure by the slow and tedious method of evaporation only.

In a road embodying my improvement the water falling on a considerable portion thereof in the center is drained through or absorbed by this porous matter into the central tile and thence removed to suitable outlets, and the residue falling on the sides beyond the porous portion flows into the furrows or gutters there provided and is readily carried off. Thus a very short time after a rain the road is comparatively dry, and in a continued wet season the center of the road will be clear of surface-water and will always be in condition for use, even though the furrows or side gutters be not sufficient to carry off the water seeking an outlet that way, or should become filled up, and the sides of the road, in consequence, be covered with surface-water; but with so large a portion of the road effectively drained by the porous material and central drain the amount of surface to be drained by the side gutters or furows is greatly diminished, and the danger of the side drains being clogged or insufficient to carry off such surface-water thereby lessened.

Clean gravel I prefer for the purpose of filling the drain-ditch and dressing the crown of the road as above described, and in sections where this material is abundant it will be advantageous to employ it and apply it liberally for the purpose. As, however, in the greater extent of territory, and particularly where these roads are mostly used, gravel is not at hand, broken rock mixed with gravel, or sand mixed therewith, or a combination of the three,

or a combination of either with clay or the natural soil of the road-bed will subserve the purpose of my improvement, though less effectively. Similar porous material—such as broken shells or the like—will, of course, perform the same function in a greater or less degree as those above mentioned.

I am aware that the combination, with a road, of a drain-pipe arranged longitudinally underneath the surface of the road to drain the same by percolation, is not new, and I make no broad claim thereto. Under my construction the road-bed for quite a distance each side of the ditch is covered with a porous material, and any water falling either side of the drain finds its way to the latter. This plan is much cheaper than where there are three pipes, one in the center and one at each side, and is equally as efficient. The item of expense is an important one in small towns and villages, and my plan can be applied where others more expensive would not be.

Having thus described my invention, what I claim is—

In a road, a drain under its crown, the portion of the ditch above the drain and considerable part of the road-bed on each side of the drain supplied with gravel, sand, or other porous material, substantially as described and shown.

HIRAM W. THORNTON.

Witnesses:
ADAIR PLEASANTS,
JAMES J. PARKS.