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J. B. WATTS

ROAD CONSTRUCTION

Filed June 18, 1920

Fig. 1.

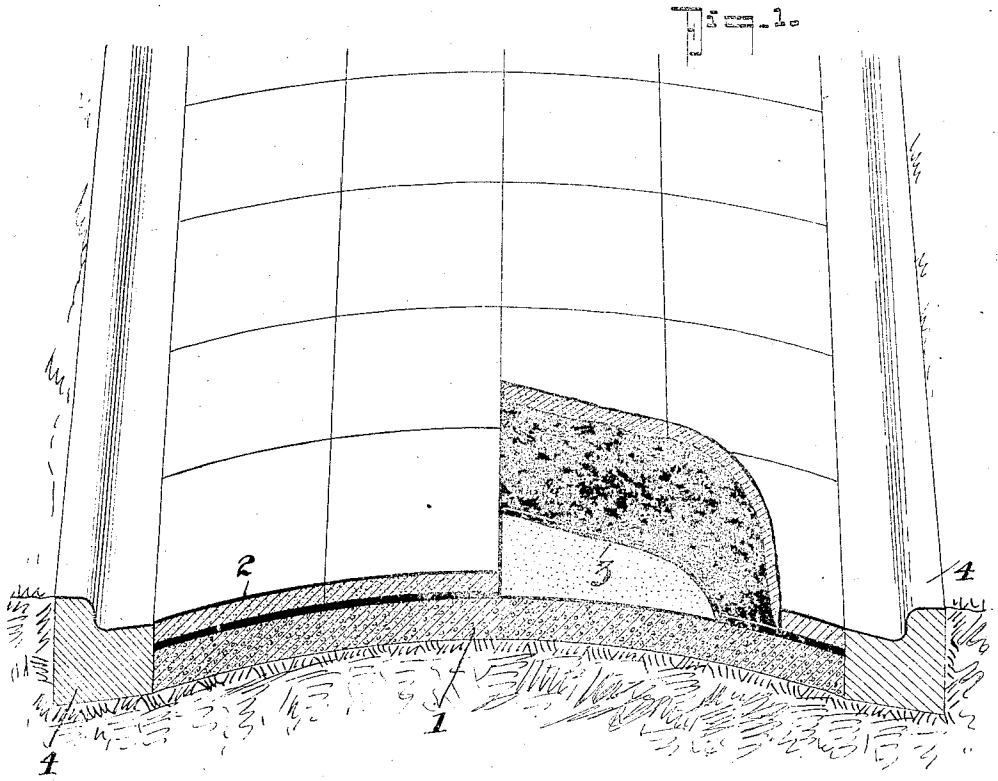
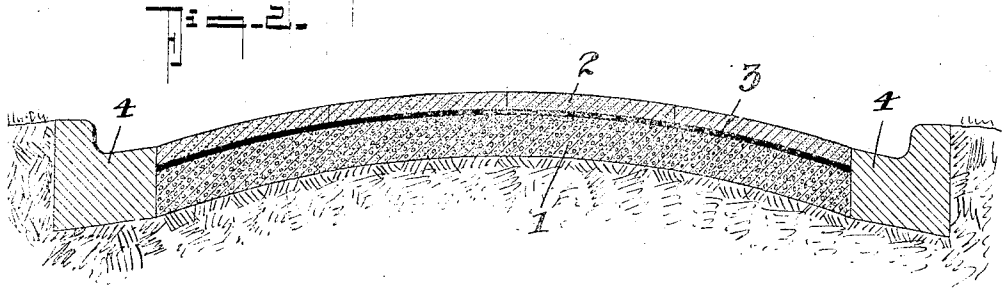


Fig. 2.



WITNESSES

Geo. D. Hall.

C. E. Trainor.

INVENTOR

John B. Watts.

BY Munn & Co

ATTORNEYS

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UNITED STATES PATENT OFFICE.

JOHN BRYANT WATTS, OF CONCORDIA, KANSAS.

ROAD CONSTRUCTION.

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To all whom it may concern:

Be it known that I, JOHN BRYANT WATTS, a citizen of the United States, and a resident of Concordia, in the county of Cloud and State of Kansas, have invented certain new and useful Improvements in Road Construction, of which the following is a specification.

My invention is an improvement in road construction, and has for its object to provide a construction of the character specified, wherein there is provided means for permitting the top of the roadway to respond to temperature changes in expansion and contraction, without interference from that portion which is below and not so subject to temperature changes, and for permitting the surface of the roadway to be renewed or repaired without affecting the foundation or base of the roadway.

In the drawings:

Figure 1 is a perspective view of a portion of the roadway, with a part in section, and with a part broken away;

Figure 2 is a transverse vertical section.

In the present embodiment of the invention the improved roadway is composed of a base or foundation 1 of suitable material, as, for instance, cement, concrete or the like, and a surface or top layer 2 of similar material, but of different texture and density. These portions are separated by a layer, indicated at 3, of heat insulating material, as, for instance bitumen, asphaltum, tar paper or any other material that would separate the upper course 2 from the lower course 1 and which will not bind the said courses together.

In the present instance the roadway is crowned, as shown, the upper faces of both layers being convex and it is finished by curbing 4 which is shaped to form drains at each side of the road. Preferably, the layer 2 of the roadway will be divided into rectangles, as shown, by transversely extending expansion joints, these joints being cut through with a tool and emphasized by a marker. There are also expansion joints between the curbing and the three layers. The central layer 3 is of a material that will not bind the two courses or layers together, and it will be obvious that when any section of the upper layer becomes worn or broken it may be removed and replaced without disturbing the remainder of the course and and without disturbing the foundation or base.

As is known, since the top or surface of a roadway must be made rich with cement to withstand traffic, the lower portion is richer than is necessary. Hence the roadway is more expensive than it should be. If the top coat or course is made richer, because of the fact that it is laid before the lower course sets, the top course adheres to and becomes a part of the base or bottom course, thus making a solid pavement, with no cleavage between the two courses. When a crack appears in the soil beneath, this crack will follow up through the pavement and appear on the surface. Repairs are difficult because of the fact that concrete does not readily lend itself to patching, and a complete block must be cut out from the ground level to the top.

With the improved roadway, a layer of concrete of a thickness of four or more inches is laid. After this course has set and hardened the central layer is spread, of bitumen, asphaltum, paper roofing or the like. This layer or course should be about one-fourth inch in thickness and upon the said course will be laid the wearing or top course, of rich concrete, spread two to four inches in thickness. This arrangement permits a block to be cut out from the upper course without disturbing in any way the base or adjacent top blocks. The central layer will allow a crack formed in the sub-grade or sub-soil to spend its energy on the base, and the top layer will not crack. In addition, the central layer acts as a cushion for the top course, absorbing a portion of the shock, thus giving longer life to the top course.

I claim:

1. A roadway composed of upper and lower layers of concrete having different densities and different coefficients of expansion and contraction the upper course

being the richer, and a substantially thick bituminous cushioning separator between said upper and lower layers, whereby the upper and lower layers are isolated and independent of each other.

2. A roadway composed of a concrete base, a bituminous cushioning and spacing layer superposed thereon, said cushioning layer being of substantial thickness and of such consistency as to be incapable of binding, and a wearing surface richer in concrete than the base layer laid on the cushioning and spacing layer, whereby said top layer is independent of the base and separator layer.

JOHN BRYANT WATTS.