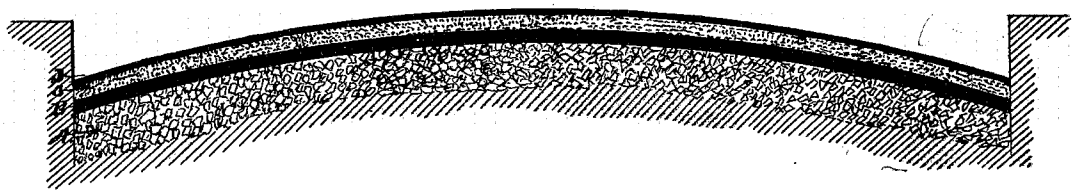
N. CROSS.

PAVEMENT.

No. 175,273. Patented March 28, 1876.



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IMPROVEMENT IN PAVEMENTS.

Specification forming part of Letters Patent No. **175,273**, dated March 28, 1876; application filed June 5, 1875.

To all whom it may concern:

Be it known that I, NELSON CROSS, of the city of New York, in the county and State of New York, have invented a new and useful Improvement in Street-Pavements, of which the following is a specification:

The most approved plan of constructing this class of roadways now in common use is a structure of at least two parts, in many respects differing from each other—as, for example, a horizontal or curvilinear base-section of coarse materials resting upon the earth, and serving as a foundation proper, and an additional section, differently composed, whose upper face constitutes the road or carriage way. In some instances an ordinary stone pavement, more or less worn and in place, has been made to serve as the foundation for an upper section of concrete or composition. In others the utilization of old materials at hand, such as cobble-stone, has been attempted, by combining them with concrete or bituminous compounds in various ways, but all such devices have resulted in failure. The chief difficulty with all composition or combination pavements has been found to be the rapid disintegration of the upper or crown section, and it has been sufficiently demonstrated in practice that this crumbling away of the parts proceeds from the lower face upward to the crown surface, the real cause of which appears to have been quite overlooked and unprovided against; but this self-destruction, so to speak, is the natural and philosophical result of bringing the hard, non-elastic substances of which the two sections of a pavement are ordinarily composed into immediate contact, one with the other. This being the case the force of the heavy shocks and strains to which the upper section is subjected, by the passage over it of heavily-loaded vehicles, is communicated to the foundation in a direct line, with a sufficient degree of power to stimulate a constant warfare between them. This continual grinding together of the meeting-faces of the two sections necessarily results in the final destruction of the weaker one, which is usually found to be the upper or crown section.

It is to remedy the above-mentioned defects that my invention has been made. It consists in covering the lower or base section of a street-pavement with a continuous pad-like coating or layer of some fibrous unadhesive material of vegetable formation, to be applied either in a natural or manufactured state, and which is in either event capable of being evenly and closely compacted and held together in its proper position. Upon this fibrous layer or cushion the upper crown-section is constructed and maintained. By this means there is effectually interposed between the hard faces of the two sections, heretofore brought into immediate contact and consequent conflict with each other, a defensive element, incapable, from its want of solidity, of conducting and communicating the shock and pressure from above, which it receives and dissipates. The interposition of this new element is productive of another advantageous result in the diminution of noise.

The following are the only additional particulars it is deemed necessary to give for the practical application of my invention, reference being had to the accompanying drawing.

A is the foundation-section, which may be of any suitable material and plan of construction. It is requisite, however, that its upper surface should be smooth and regularly formed, or at least destitute of sharp angles or jagged projections. B is the continuous guard or fender, covering the entire upper face of A. This fender may be varied in thickness, according to the nature of the material used in its construction, and, also, the requirements of the pavement in respect to solidity and endurance. If a coarsely-woven or netted substance should be employed, a thickness of less than one inch would answer the purpose. If, however, the fibrous material is in a loose or detached state, as in the instance of grain-stalks, reeds, sea-grass, and the like, divided by cutting or otherwise, which are well adapted to the purpose, a greater thickness will be required, say, from two to three inches; but this must be left to the judgment of the builder. C is the upper body-section, which is laid directly upon the fender B, and may be of any material adapted to the purpose. If it be composed of a bituminous or pitchy compound it may be well to cover the fender B with a coating of prepared paper to prevent

its saturation. D is an ordinary crown-dressing, generally used with all composition pavements. It is recommended that this, when employed, should be largely composed of wood fiber without the mixture of coarse gravel, which measurably produces the deleterious effect which it is the present purpose to overcome. It should be observed that the vegetable fiber of the fender B may be preserved from decay by processes now in common use.

I claim as my invention—

In a pavement, roadway, &c., the guard lining or fender B of vegetable fiber beneath the upper layer, in combination with the other elements of the structure, for the purpose of dissipating shocks, and thereby increasing the durability of the structure, substantially as specified.

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Witnesses:
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