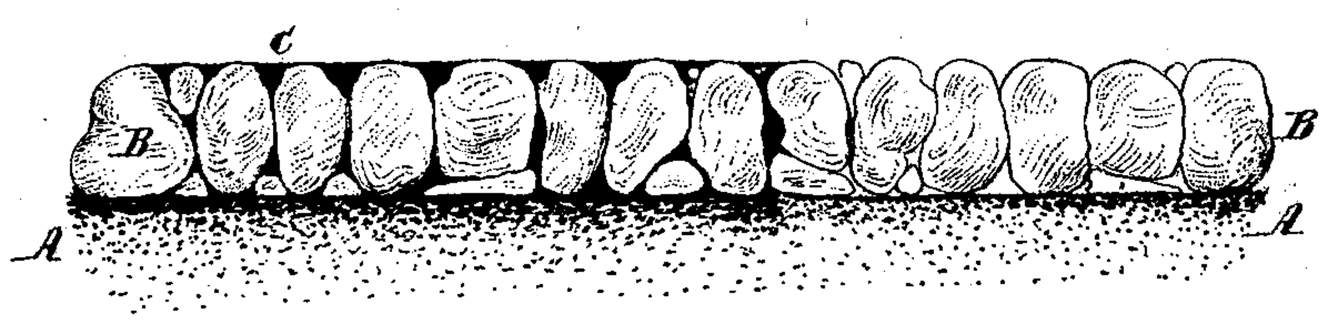
C. G. VON TAGEN.

# Improvement in Pavements.

No. 124,022. Patented Feb. 27, 1872.




Witnesses { Harry Smith
John Parker

C. G. Von Tagen
by his attys
Howson and Sons

124,022

# UNITED STATES PATENT OFFICE.

CHARLES G. VON TAGEN, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN PAVEMENTS.

Specification forming part of Letters Patent No. 124,022, dated February 27, 1872.

Specification describing the Improved Pavement invented by CHARLES G. VON TAGEN, of Philadelphia, Pennsylvania.

My improved pavement consists mainly of a hardened and perfectly dry substructure of gravel, broken stone, or other suitable material; of cobble or other stones laid upon this substructure, and wedged up or packed, so that all may be submitted to an equal pressure by rolling or ramming, without danger of sinking one below the other; and finally, of a suitable concrete of which coal-tar forms a principal ingredient, to be poured while hot into the crevices between the stones, but not to cover the latter, and which will amalgamate with the dry substructure, adhere to the stones and harden in cooling, so as to unite the said substructure and stones and form a conglomerate or firmly-united mass of the whole.

The figure in the accompanying drawing represents a sectional view of my improved pavement, A being the dry and hardened substructure; B, the cobble or other stones, wedged up or set upon the substructure, as hereafter described; and C, the concrete, by which the crevices are filled, and the stones and substructure united so as to form a conglomerate of the whole. If gravel is to be used for the substructure, I first heat it so as to dispel a portion of the moisture, then spread it evenly upon the road-bed to a depth of several inches, and then thoroughly compress, harden, and dry it, by the use of heated iron rollers; or, the gravel may be thoroughly dried at first in the ordinary drying-pans, and be afterward compressed by cold rollers. Instead of gravel, finely-divided or powdered stone, mixed with sand or used alone, may be employed as a substructure; but, whatever the material, it is essential that the foundation or substructure should be perfectly dry and hard. After thus preparing the bed, if cobble-stones are to be used, I break the larger ones and assort them as evenly as possible and then set them carefully upon the bed, a portion of the latter being removed for the reception of the larger stones, and the smaller stones being set up by inserting chips of hard stone beneath them. The stones are laid in this way so as to be as nearly level at the top as possible, and so as not to have any soft gravel or other yielding material beneath them. All of the said stones can consequently be submitted to an uniform pressure by ramming or rolling, without risk of sinking one below the other, and they are thus treated until the whole have been forced down evenly upon the substructure. In setting the stones the crevices may, also, if occasion requires, be partially filled both above and below with chips of hard stone. Belgian or other stone blocks are set in the same way, by wedging up the smaller ones, so that all may be submitted to an uniform pressure without risk of producing an uneven surface. The substructure having been thus formed and the stones set, any suitable concrete of which coal-tar forms a principal ingredient, and which will harden in cooling or standing, is poured into the crevices between the stones, but not over the top of the latter, which are to be left bare. This concrete fills the crevices between the stones and adheres to the latter, and soaks into and amalgamates with the dry substructure, the consequence being that when the concrete hardens, a conglomerate or firmly-united mass is formed of the whole pavement. Any suitable concrete of which coal-tar forms the principal ingredient, may be employed; but I prefer to use a mixture of asphaltum, pitch, and coal-tar, with sulphurets or sulphur. If desired, the surface of the pavement may be covered with screened gravel, which can be subsequently rolled.

The principal advantages of my improved pavement are its smooth and level surface, freedom from crevices, durability, and cleanliness. It is also a disinfectant when the concrete is made up of the above-mentioned materials.

I claim as my invention—

A pavement in which are combined the following elements—namely, a dry compressed substructure of gravel or its equivalent; stones, the surfaces of which are brought to the same plane, in the manner set forth; and a tar-cement or concrete, filling the interstices between and beneath the stones, when the said cement is poured while hot into said interstices, and when the whole body of the pavement is reduced to a uniform level, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

C. G. VON TAGEN.

Witnesses:

WM. A. STEEL,

JOHN K. RUPERTUS.