

# UNITED STATES PATENT OFFICE.

ROBERT CRANFORD, JR., OF BROOKLYN, NEW YORK.

## IMPROVEMENT IN COMPOUNDS FOR PAVEMENTS.

Specification forming part of Letters Patent No. 125,545, dated April 9, 1872.

Specification describing a certain Compound for Pavements, invented by R. CRANFORD, Jr., residing at Brooklyn, in the county of Kings and State of New York.

The nature of my invention consists in the employment in concrete pavements of a mixture of bitumen, sulphur, and muriate of tin, which substances are intimately united together in the proportions hereinafter specified, under a temperature of about 225° Fahrenheit, and form a kind of vulcanite of slight elasticity, impervious to moisture, so that it will not be impaired by frost, and of such hardness that it will not injuriously be affected by the extreme heat of summer.

To prepare the above compound, take one hundred parts of what is commonly known as chemically-prepared tar, or asphaltum, or some other bituminous substance having the required viscosity; two parts of sulphur; and one-fourth of one part of muriate of tin. Place these articles in a suitable caldron or tank, and heat them to about 225° Fahrenheit, stirring them, in the meanwhile, so as to thoroughly incorporate one with the others.

To form a concrete pavement, a sufficient quantity of the above compound is mixed, in its heated semi-fluid state, with, say, three parts of gravel or broken stone, two parts of clay, and one part of Portland or other cement to reduce the whole mass to a plastic state, in which condition, and while yet hot, it is put down upon the roadway and rolled in the or-

dinary manner. The gravel, clay, and cement, previous to compounding them with such composition, should be thoroughly mixed together and also heated. The concrete thus formed may also be molded into blocks of any desired shape and size, it being subjected, while in the mold, to the required degree of pressure to give to it the desired compactness and solidity. Where these blocks are used for paving the carriage-way or sidewalk, I propose to cement them together by filling the interstices between them with my improved compound of bitumen, sulphur, and muriate of tin.

I have given one formula for constructing a concrete pavement in which my compound is used; but I wish it to be distinctly understood that its use is not limited to this particular kind of pavement, as it is evident that it may be combined with other substances suitable for the purpose.

What I claim as my invention, and desire to secure by Letters Patent, is—

In the construction of concrete pavement, a compound composed of bitumen, sulphur, and muriate of tin, mixed under heat, and in substantially the proportions herein specified.

In testimony whereof I have hereunto signed my name this 18th day of March, A. D. 1872, in presence of two subscribing witnesses.

ROBERT CRANFORD, JR.

Witnesses:

JOS. R. EDSON,

J. WM. MISTER.