# UNITED STATES PATENT OFFICE.

HIRAM F. SNOW AND JAMES H. DAVIS, OF DOVER, NEW HAMPSHIRE.

## IMPROVED COMPOSITION FOR PAVEMENTS.

Specification forming part of Letters Patent No. **81,698**, dated September 1, 1868.

*To all persons to whom these presents may come:*

Be it known that we, HIRAM F. SNOW and JAMES H. DAVIS, of Dover, in the county of Strafford and State of New Hampshire, have invented a new and useful Improvement having Reference to Compositions to be Used for Pavements, or in other respects in the arts; and we do hereby declare the same to be fully described in the following specification:

In carrying out our invention we take ordinary coal-tar, made by the destructive distillation of coal for the production of gas, and boil it in a steam-tight boiler or other proper vessel, having a pipe leading from it to a condenser. We distill off the water and naphtha, leaving a residuum not having the odor or appearance of tar. This residuum we mix with gravel or sand, coal-ashes, cinders, or broken stone, or pulverized ore, to the consistency required, and we also mix with the whole, or with the asphaltic residuum before being mixed with the gravel or mineral matter or matters, a quantity of sulphuric acid, using about one pint of the acid to every thirty-six gallons of the residuum. The acid will cause the whole mass to harden very quickly, and will render it tough, and not liable to crack in cold seasons or soften under the heat of the sun in summer. It also benefits it in other respects, particularly when there is any iron in the mineral matters used with the tarry residuum; in fact, we have found the acid to greatly improve the residuum of the tar for the purpose for which we use the composition of which it is a constituent.

Our said composition is particularly designed for the production of sidewalks or pavements, but it is applicable also to the fabrication of water-pipes, gutters, or drains, to covering roofs of buildings, as well as for various other useful purposes in the arts.

We are aware that it is not new to mix gravel or other earthy matter with coal-tar, or the residuum thereof left after boiling such tar, and therefore we make no claim thereto.

We have found that tan-bark, comminuted wood, or sawdust of wood, when mixed with coal-tar residuum, or with the same and one or more mineral matters, as specified, or the same and the acid, as set forth, improves the mixture for pavements, as it renders its surface less liable to crack, and less destructive or abusive of soles of shoes when a person may be walking on it; besides, the addition of the sawdust is efficacious in other respects.

We make no claim to a composition composed of coal-tar, sand or an earthy material, and oxalic acid; nor do we claim the application of tar to a mass of clay and sawdust combined after such may have been spread on a roof or surface. We do not employ coal-tar in our composition, but the residuum resulting from the distillation of water and naphtha from coal-tar, such residuum not having the odor or appearance of tar. With such residuum we make a much harder and better pavement than we can with coal-tar. The sulphuric acid, by its action on the sawdust, also improves the composition.

We claim—

The combination of wood sawdust, or comminuted wood or bark, with the tarry residuum, and a mineral matter or matters and an acid, as specified.

HIRAM F. SNOW.
JAMES H. DAVIS.

Witnesses:
GEORGE G. LOWELL,
SAMUEL F. JOHNSON.