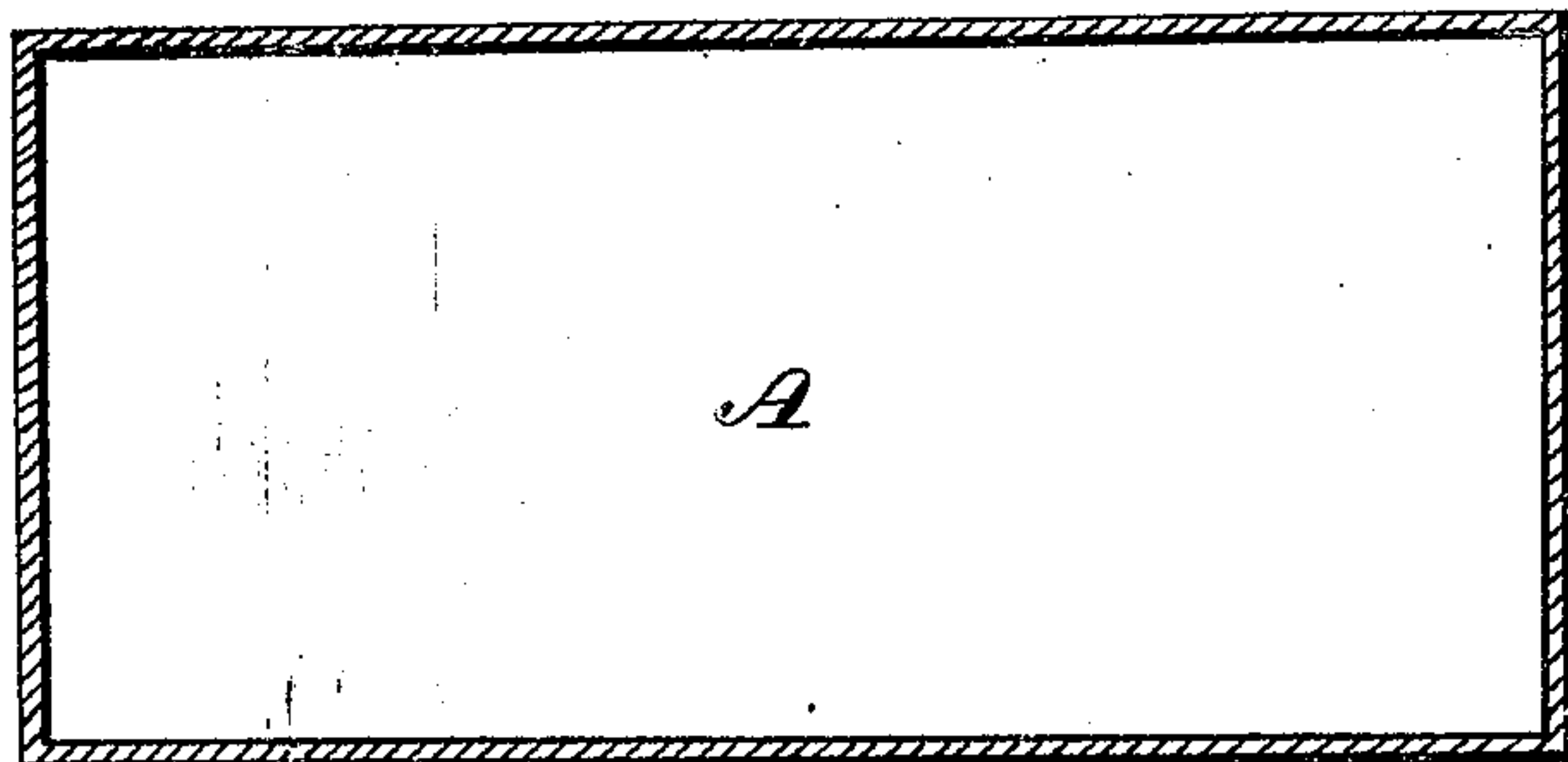
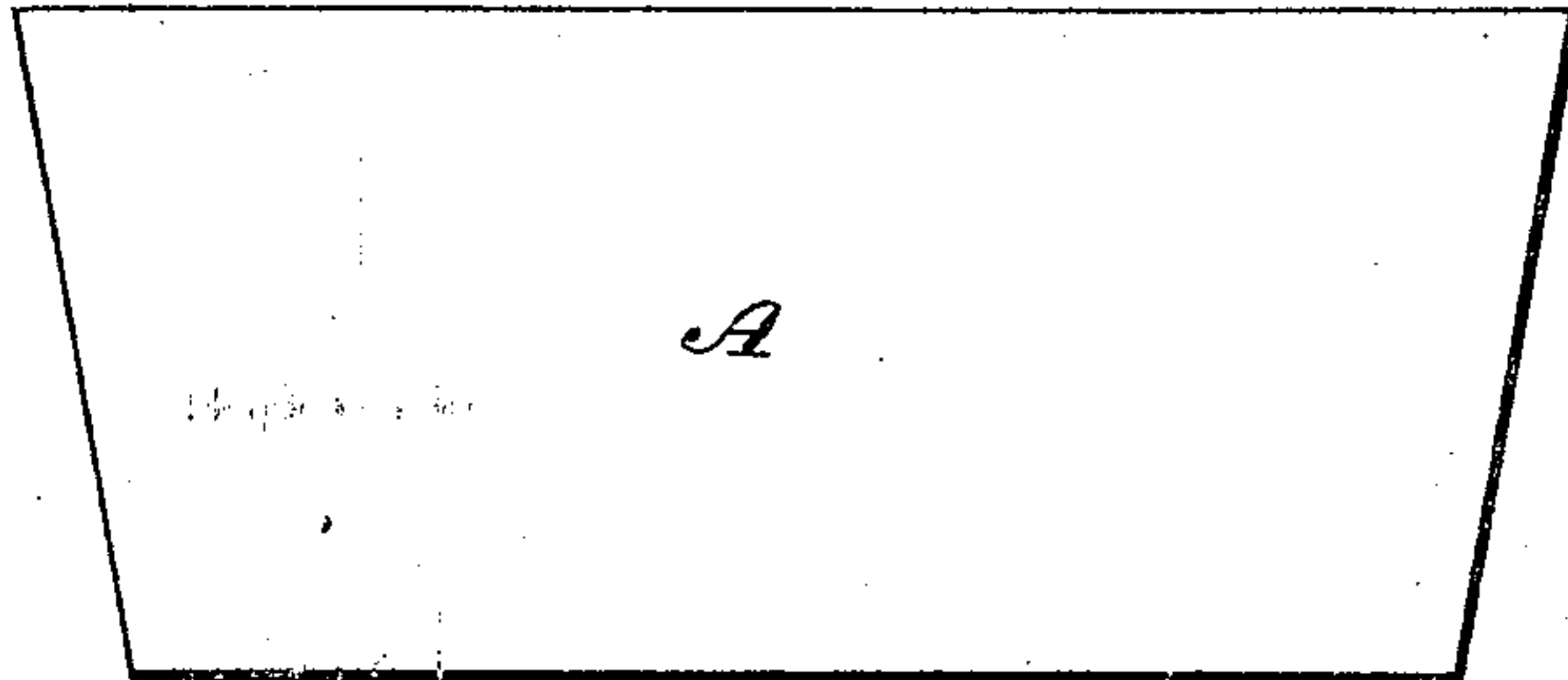


*A. Van Camp.*  
*Concrete Pavement.*  
*N<sup>o</sup> 93,142.      Patented Jul. 27, 1869.*



*Fig. 1.*



*Fig. 2.*

*Witnesses:*

*Edwin James*  
*John S. Hollingshead*

*Inventor:*

*A. Van Camp*  
*per J. E. H. Holmead*  
*Attorney*

# UNITED STATES PATENT OFFICE.

A. VAN CAMP, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR TO  
HIMSELF AND M. M. HODGEMAN, OF ST. LOUIS, MISSOURI.

## IMPROVED CONCRETE PAVEMENT.

Specification forming part of Letters Patent No. 93,142, dated July 27, 1869.

*To all whom it may concern:*

Be it known that I, A. VAN CAMP, of Washington city, in the county of Washington, and District of Columbia, have invented certain new and useful Improvements in Concrete Pavements; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings and to the letters of reference marked thereon, making part of this specification, in which—

Figure 1 is a top view of the metallic mold or cap sometimes used. Fig. 2 is a side view of the same.

I am aware that many experiments have been essayed having in view the producing of a durable concrete pavement; one that would be enabled alike to resist the action of the frost and rain and the heat of the sun without cracking or otherwise being injured. Still, notwithstanding the numerous attempts that have been made, scarcely in a single instance has a pavement of this nature been introduced that in any degree meets with popular favor. Many reasons might be assigned for the failure of all this class of pavements, the chief of which is that when the pavement has been used for a while it is found that a permanent concretion of the mass has not taken place, which difficulty principally arises from the fact that the gravel, bowlders, or pebbles used, and which invariably constitute a prominent feature in all pavements of this character, soon work loose, owing to the fact that their smooth and even surfaces afford no resisting bearing for the cement or other material to embed itself in. In my improvement this difficulty is entirely remedied, and simply by crushing or pulverizing the rock, gravel, pebbles, or bowlders used before mixing the same with any other ingredient. The result is that instead of a smooth I have a rough and uneven surface, which, after having been once embedded in the asphaltum or the residuum or pitch of coal-tar, which is the other ingredient I use, it is impossible for any of the particles to work loose or become disintegrated. Indeed, numerous experiments have fully attested the fact that in attempting to break a block or section of this pavement the pieces of crushed gravel or stone are

always broken in two, and never in the slightest degree loosened in their sockets or bearings.

To enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation.

I take any rock, bowlder, gravel, or pebble suited to the purpose, and crush or pulverize the same by any suitable and convenient means until they are reduced to, comparatively speaking, small particles. This crushing or pulverizing process should be continued until the even or naturally smooth surface of the stone is entirely destroyed. The rock or gravel thus prepared I mix with asphaltum, or what is known as the residuum or pitch of coal-tar, using the ingredients in the following proportion: Stone, gravel, &c., seven parts; asphaltum, &c., one part. This formula I have found by practical experience to be admirably adapted for the purpose intended; but, of course, the same may be slightly varied without in any manner altering my invention.

These ingredients are placed in a large open pan or vessel and subjected to a heat of from 120° to 130°, care being taken that the mass is stirred or agitated during the entire time that it is subjected to the fire. So soon as the ingredients are thoroughly mixed the composition is emptied into a suitable cart or wagon and conveyed to the point or place where the same is to be used. It is then dumped out and spread, and properly laid by the aid of hot rollers. For ordinary pavements the depth may be about two (2) inches; for prominent and much-traveled thoroughfares, about four (4) inches. Sometimes, especially when the composition is intended to be used for roofing purposes, sharp sand may be advantageously added.

Along railroad-tracks and in the immediate vicinity of points where the frequent removal for the purpose of repair, &c., of the pavement is required, I propose to lay blocks prepared from the same composition. These blocks are prepared as follows: I place a number of open metallic molds, A, of the form shown in the drawing, along a hard smooth surface. These molds I partially fill with the composition while the same is in a hot plastic



state, and then thoroughly ram with hot tamps or other suitable implement; then add more of the composition and repeat the ramming process. This is continued until the molds are filled, when the heated rollers are used. The blocks are then allowed to cool, when, if the molds have been properly sanded before, they can be readily removed.

It will be seen by reference to Fig. 2 in the drawing that the mold A is formed with tapering ends or sides. The blocks, of course, are of the same form and outline; therefore when they are placed side by side their upper surfaces will be close together, but between each two blocks are angular recesses. Now, when these blocks are laid in sand the sand gradually works up and fills this entire recess, and the blocks uniting on the well-known principle of the arch, a strong and durable pavement is formed. If desired, the blocks need not be removed from the molds, but the pavement laid with the blocks firmly cemented in the molds. When this plan is resorted to of course the molds should not be sanded before the composition is poured in, as it is desirable that the same should adhere in the most permanent manner to the sides of the mold.

Having thus fully described my invention, what I claim therein as new, and desire to secure by Letters Patent of the United States, is—

1. Crushed or pulverized rock, gravel, &c., when the same is used as an ingredient in the formation of concrete pavements, substantially as described.

2. A concrete pavement, when the same is composed of the materials stated, substantially as described, as and for the purpose specified.

3. Forming the blocks in the metallic molds A when the same are of the form stated and are laid with or without the molds in sand, substantially as described, as and for the purpose specified.

4. Laying the concrete pavement when the same is composed of crushed rock or gravel and asphaltum, by means of hot rollers, substantially as described.

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

A. VAN CAMP.

Witnesses:

EDWIN JAMES,

JOHN S. HOLLINGSHEAD.