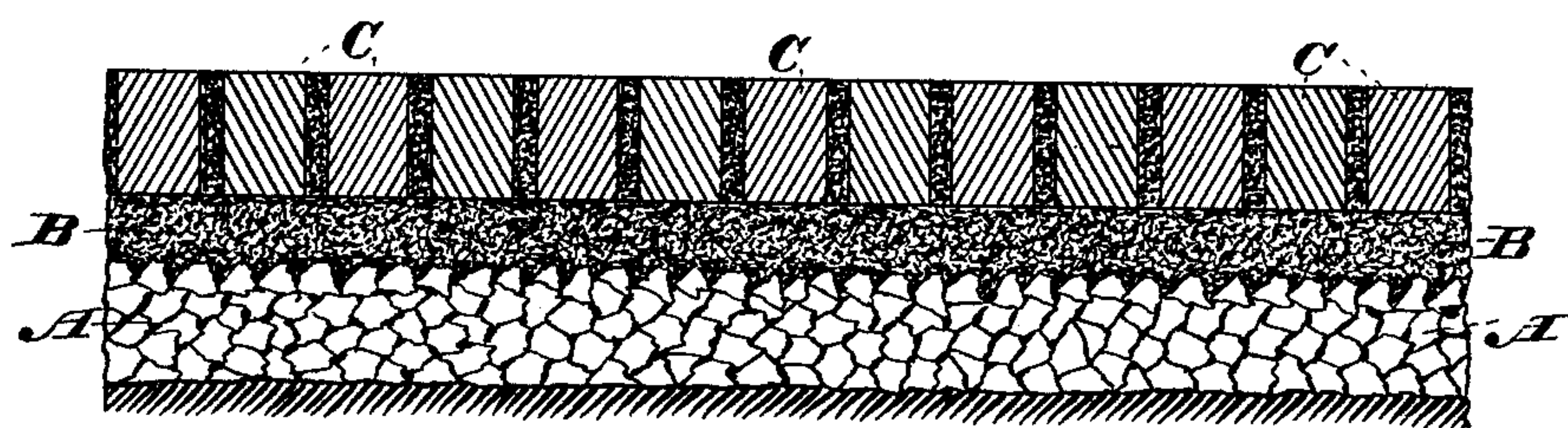
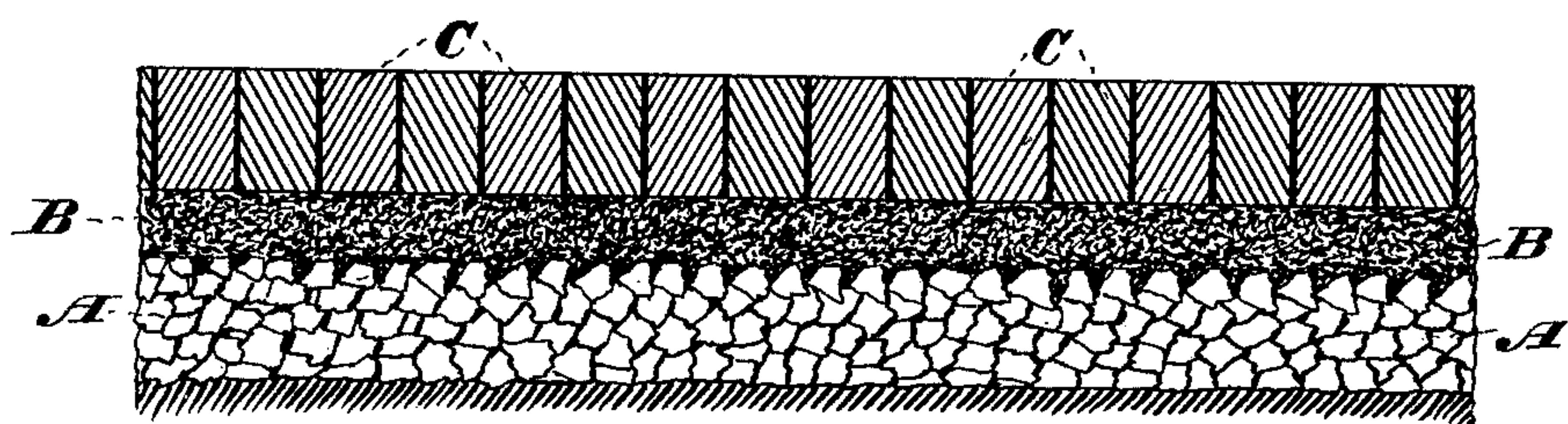
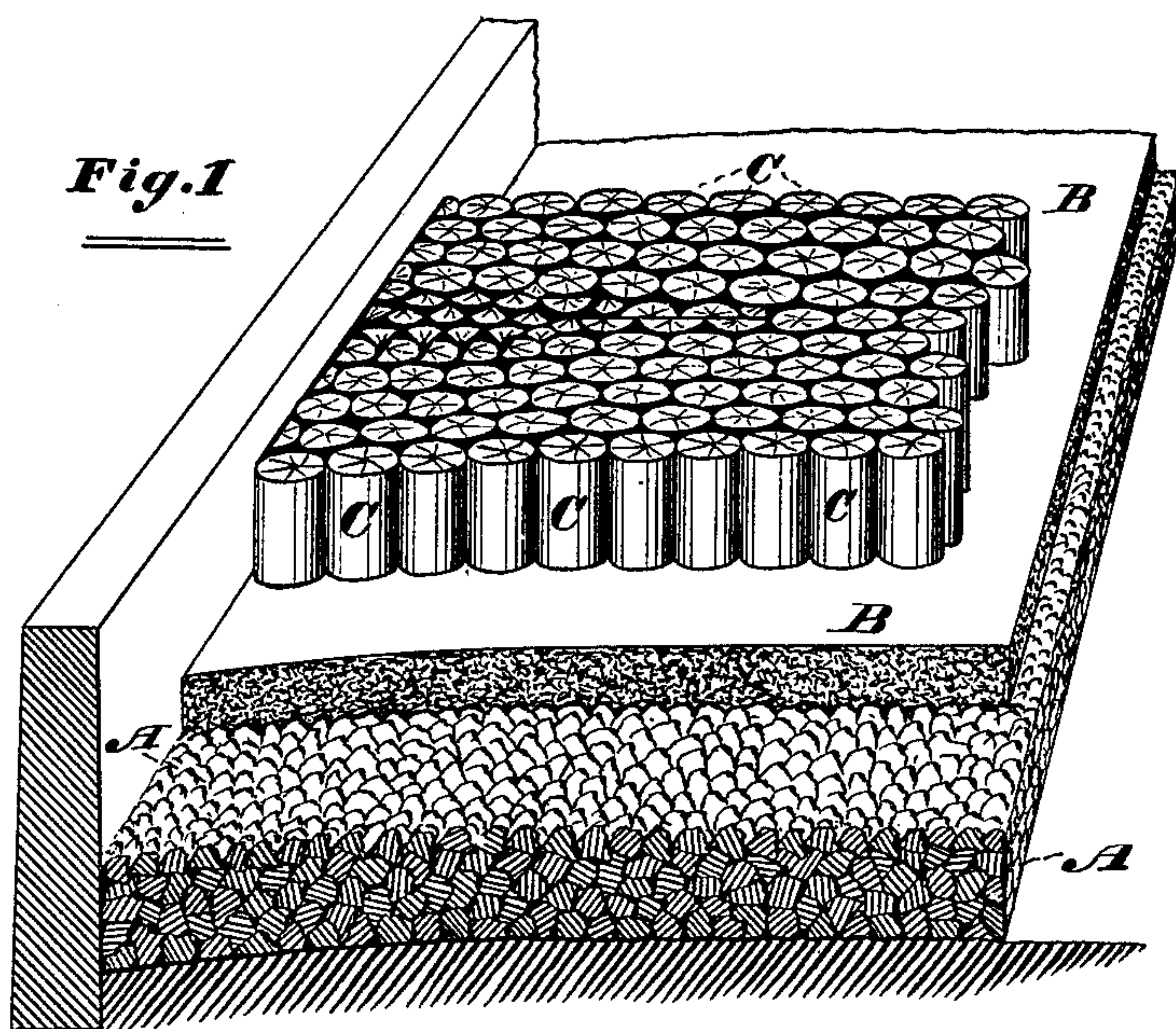


J. H. McMURRAY & S. E. GROSS.  
Pavement.

No. 206,812.

Patented Aug. 6, 1878.



*Attest:*

*W. L. Baker*

*C. B. Baker*

**INVENTORS:**

*John H. McMurray*

*Samuel E. Gross*



# UNITED STATES PATENT OFFICE.

JOHN H. McMURRAY AND SAMUEL E. GROSS, OF CHICAGO, ILLINOIS.

## IMPROVEMENT IN PAVEMENTS.

Specification forming part of Letters Patent No. **206,812**, dated August 6, 1878; application filed January 10, 1878.

*To all whom it may concern:*

Be it known that we, JOHN H. McMURRAY and SAMUEL E. GROSS, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Pavements, which is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a perspective view of one form of our pavement, and Figs. 2 and 3 are longitudinal vertical sections of modifications of the same.

The object of our invention is to furnish a solid and durable pavement; and it consists in a layer of small broken stone, upon which is placed a layer of fine stone-screenings or pulverized stone, and on which a superstructure of wooden blocks is placed as a wearing-surface.

Referring to the drawings, A designates in all the figures a layer of small broken stone or macadam about six inches thick. These broken stone should not be more than two and one-half inches in dimension in any direction. B designates in all the figures a layer of pulverized stone or fine stone-screenings, about two inches thick, and C designates the wooden blocks which form the top layer or wearing-surface, and which may be arranged in different forms. They may be round or split wood blocks, preferably of cypress or cedar wood, set edgewise to the grain, and the interstices filled with gravel and asphalt or cement, as shown in Fig. 1; or they may be rectangular wooden blocks set close together in parallel rows across the street, with liquid asphalt or pine-tar poured in the joints and crevices, as shown in Fig. 2; or they may be rectangular wooden blocks placed in parallel rows across the street, with interstices between each row of about one inch in width, filled with gravel and asphalt, as shown in Fig. 3; but we do not limit ourselves to the form and order of arrangement of the wooden blocks as shown in Figs. 1, 2, and 3.

In the construction of the pavement, the earth should be first excavated to the proper depth and the usual convexity of the road-bed formed. The first layer, consisting of small broken stone, is then laid down and a heavy roller passed over it until it is well compacted,

and upon this the second layer is placed and also well compacted; or, if convenient, after the first layer, consisting of small broken stone, is laid, the road may be opened to travel until it becomes compacted and its surface smoothed and uniform. In such cases the second layer may be lessened in quantity; or, if the travel should be of sufficient duration and heaviness to pulverize the upper portion of the layer of broken stone sufficiently to form a surface layer of pulverized stone by this fact alone, then any additional material to the layer so formed may be omitted except in filling any ruts or depressions existing in the surface.

Any of the various kinds or qualities of stone may be used, and if convenient either or both of the layers may be constructed of the stony refuse, scoria, or slag termed "furnace slag."

The wooden blocks are then placed in position by any of the methods best adapted to their different forms.

We are aware that water-tight layers of cement and concrete compositions have been placed upon cobble-stone or rock foundations; but we do not claim these. The superior advantages of a layer of fine stone-screenings or pulverized stone is that, while it forms as smooth a bed for the blocks as a layer of cement or concrete, it is not, like them, impervious, but affords a sufficient and gradual drainage and absorption. It does not uphold and retain in contact with solutions harmful to the texture of the wooden blocks, as does a cement or concrete foundation, but permits them to escape or be absorbed into the earth, thus adding to the durability of the wooden superstructure as well as to the health of the city. At the same time a sufficiently solid foundation is secured, and with enough elasticity to endure all the extremes of temperature and weather as well as the burdens of heavy traffic without serious impairment, while cement or concrete foundations are very liable to fracture and deterioration from these causes.

Layers of sand or gravel have been used upon a bed of broken stone; but it has been found in practice that sand acts injuriously upon the wooden blocks, and often produces rapid decay, while it is easily displaced or moved by drainage and pressure. Gravel is

not well suited for the purposes of a direct foundation for wooden blocks for many reasons, some of which often depend upon the particular kind or quality of gravel used; but the most frequent reason is its want of stability or failure to present and retain in surface-composition a uniform and unchanging bed for the blocks.

Another advantage in the use of our upper layer is that a sufficient quantity of fine stone-screenings and pulverized stone is usually produced at the quarry by the process of crushing or breaking the stone into sizes suitable for the under layer, and which can be thus readily utilized.

The upper layer of fine stone-screenings and pulverized stone being of the same kind or quality of stone as the under layer, and differing from it only in the size of its particles, will, under all conditions of temperature and weather, form with it a more homogeneous foundation than a layer of cement, concrete, gravel, sand, or other foreign substances.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A pavement in which a top layer of wooden blocks is placed upon a foundation consisting of two layers, the lower one of small broken stone and the upper one of pulverized stone or fine stone-screenings, substantially as described, and for the purpose set forth.

2. The combinations of the layers A and B with the wooden blocks C, the whole constructed substantially as described, and for the purposes set forth.

In testimony that we claim the foregoing we have hereunto set our hands this 7th day of January, A. D. 1878.

JOHN H. McMURRAY.  
SAMUEL E. GROSS.

Witnesses:

E. F. MERRILL,  
H. E. WOOKEY.