

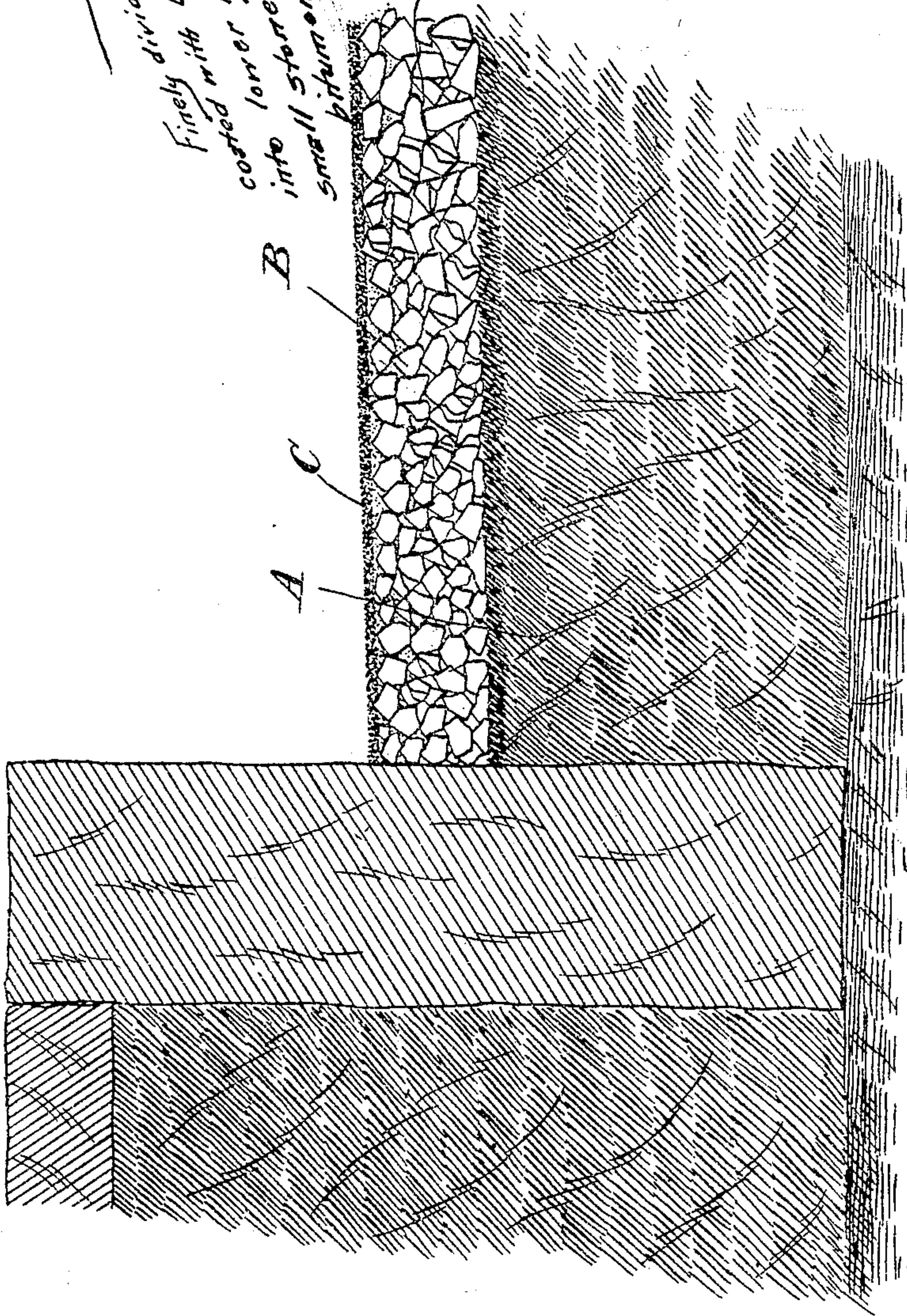
References inside.

COMPOSITE PAVEMENT.
APPLICATION FILED JUNE 28, 1909.

Patented May 31, 1910.

959,976.

*Finely divided mineral matter
min (c) rolled stone,
finely divided mineral matter
coated with bitumen of large and
small stones, (B)
into lower layer of stone dust and
small bitumen.
turn of the crusher*



See Bailey Reissue 9207 orig. 97149.

Witnesses
W. H. Rockwell
E. H. Reichenbach

Inventor
Edwin C. Wallace
By *A. J. DuBois*
his Attorney

UNITED STATES PATENT OFFICE.

EDWIN C. WALLACE, OF EAST AUBURN, CALIFORNIA.

COMPOSITE PAVEMENT.

959,976.

Specification of Letters Patent.

Patented May 31, 1910.

Application filed June 28, 1909. Serial No. 504,858.

To all whom it may concern:

Be it known that I, EDWIN C. WALLACE, citizen of the United States, residing at East Auburn, in the county of Placer and State of California, have invented certain new and useful Improvements in Composite Pavements, of which the following is a specification.

My present invention has relation to composite pavements; and it contemplates the provision of such a pavement, adapted to be expeditiously laid at small cost of skilled-direction, apparatus, labor and material, and one having a surface-coating or upper course that is rendered impermeable to the elements without the use of so much comminuted or other fine material that the surface-coating mixture is "mushy" in character, and also having a lower course possessed of rigidity, so that the pavement as a whole is well calculated to withstand the conditions and the usage to which composite pavements are ordinarily subjected.

In the drawing, accompanying and hereby made a part hereof: the figure is a vertical sectional view of a portion of a composite pavement produced in accordance with my invention.

The invention alluded to consists in a process of producing a pavement and in the pavement, the product of the process, and for the sake of convenience and brevity I will describe in detail the fabrication of the pavement from which description considered conjunctively with the lettered drawing both the process and the pavement produced by the practice of the process will be fully understood.

By reference to the drawing it will be seen that A is a prepared foundation which I would emphasize may be of any character consonant with the purpose of my invention.

B is the lower course of the novel and advantageous pavement, and C, the upper course or surface-coating thereof.

In laying a pavement in accordance with my invention I make use of stone of a size to pass through the interstices of a screen giving a stone, the largest of which, is the maximum size desired, and this stone together with smaller pieces of stone and comminuted stone or dust, in the state that the whole run is discharged from a crusher, I mix with sufficient bitumen, of proper consistency, to form a homogeneous mass, and in that way produce the first or lower course

B, disposed on the foundation A, as illustrated. I also make use of a fine bituminous mixture—i. e., a mixture produced by commingling either sand or crusher-screenings (comminuted-stone) or both with sufficient bituminous or asphalt cement to form a homogeneous mass. This bituminous mixture I spread in a thin coat or layer over the course B laid as before described but not compressed or subjected to pressure or tamping, and in that way produce the upper course or surface coating C. I then subject the laid material—i. e., the material comprising courses B and C, to initial pressure or compression, preferably by moving a heavy roller over the same, and by so doing not only compress the two courses to the extent necessary but tie or bind the upper or surface-coating course C to the lower or stone-mixture course B, and provide a dense surface layer or course without in any way proportioning the amount of fine material used in connection with the coarser stone.

Attention is here invited to the fact that while I describe the pavement made in accordance with my invention as having two courses B and C, the completed pavement is not a multi-layer pavement, but on the other hand the two courses are practically pressed, by the single compression referred to, into a single mass. This is materially advantageous inasmuch as it assures the production of a pavement, the lower portion of which is possessed of the required rigidity, and the upper portion or surface of which is dense and impermeable and is adapted to close or seal to advantage and without tendency of separating, and this without the employment of a large amount of fine material which is objectionable because of its liability to render the mixture mushy. I would also direct attention to the fact that while my improvements assure a rigid lower portion and a top surface sealed to the elements, which are the essential properties of a good wearing pavement, the pavement is adapted to be quickly and cheaply made; the material of the first course B being spread upon the previously prepared foundation to the required depth, and the upper course or surface-coating C being raked in a thin layer over the material B and brought to a true surface before the application of the only pressure to which the composite pavement is subjected. In this connection it will be appreciated that the single compression

of the whole mass simplifies and cheapens the production of the pavement, and instead of preventing or interfering with the adherence of the upper course to the lower course (as is the case when the lower course is rolled or otherwise pressed precedent to the application and pressing of the upper course) is utilized to effect a bonding of the upper course to the lower course for the purpose before described, and to render the whole mass compact and durable.

Among other advantageous characteristics of my invention, it may be stated that only little apparatus is required for the mixing and that of inexpensive character; that only slight care is required in handling and laying the materials; that inasmuch as the fine mixture in the thin or surface course C is used at the surface only instead of being distributed throughout the whole mass a comparatively small quantity of the fine mixture is required; that in the making of the first or lower course B a hard bitumen may be employed and in small quantity; and that because of adding the fine material—*i. e.*, course C to the course B before compression a firm and durable bond is attained; the materials of the two courses being united at the top of the pavement in one integral or homogeneous mass that presents a smooth surface and one possessed of durable capacity. While, of course, C is added in one principal coat or layer more may be added from time to time during the process of laying if required in order to cause the surface to seal or close up in spots requiring more fine mixture.

I have of course specifically disclosed the best practical embodiment of my invention of which I am cognizant, but it is obvious that in the future practice of the invention such changes may be made as do not involve

departure from the scope of my invention as claimed.

Having described my invention, what I claim and desire to secure by Letters Patent is:—

1. A pavement consisting of a lower course of large pieces of stone, smaller pieces of stone and stone dust mixed with sufficient bitumen of proper consistency to thoroughly coat all of the particles which is previously mixed and then laid, without compression, on a suitable foundation, and a previously mixed, upper course composed of finely divided mineral matter mixed with sufficient bituminous binding material to thoroughly coat all of the particles which is first spread in a thin layer on the lower course and thereafter blended and bonded with the lower course by compression, whereby the two courses are made a compact and substantially integral mass which is densest at its top.

2. A pavement comprising a foundation, a lower course thereon made up of large pieces of stone, smaller pieces of stone and stone dust, mixed with sufficient bitumen of proper consistency to thoroughly coat all of the particles, and an upper thin course disposed on the lower course and made up of finely-divided mineral matter mixed with sufficient bituminous binding material to thoroughly coat all of the particles, and blended with the coarse mixture at the top of the mass, whereby the two layers are bonded into one and a compact rigid layer densest at the top is formed.

In testimony whereof I affix my signature in presence of two witnesses.

EDWIN C. WALLACE.

Witnesses:

WILLIAM D. DEANE,
M. H. YATES.