No. 847,471. PATENTED MAR. 19, 1907.

F. F. GROSS.

PAVEMENT.

APPLICATION FILED OCT. 12, 1904.

Fig. 1.

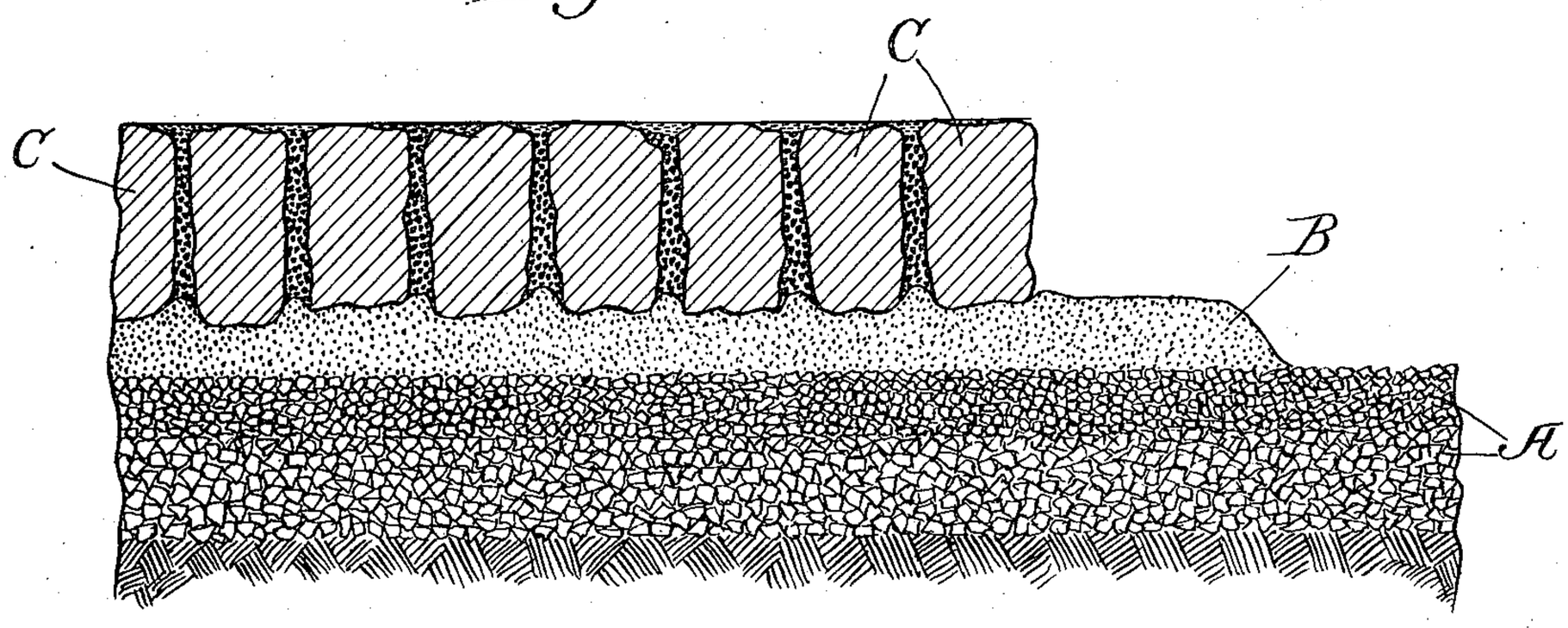

Fig. 2.

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UNITED STATES PATENT OFFICE.

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PAVEMENT.

No. 847,471. Specification of Letters Patent. Patented March 19, 1907.

Application filed October 12, 1904. Serial No. 228,093.

To all whom it may concern:

Be it known that I, FREEMAN F. GROSS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Pavements, of which the following is a specification.

My improvements relate to street-pavements and the like.

The illustrations must be taken as in some sense diagrammatic, since it is difficult to show by drawing the nature and condition of materials used, and, moreover, various materials can be employed, provided only they have the qualities necessary to perform the functions ascribed to the materials used in my invention. I have thus diagrammatically illustrated my invention in the accompanying drawing, wherein—

Figure 1 is a cross-section through a portion of street-pavement on the line 1 1 of Fig. 2, and Fig. 2 is a plan view of the same.

Like parts are indicated by the same letter in both figures.

To construct my pavement, I first lay down a suitable foundation A. It may be of any desired material. It should be a form of foundation which will be substantially impermeable to water. In the illustration I have shown a form of macadam. On this foundation I lay a cushion B, which consists of material of a yielding or plastic nature, but capable of solidifying. I prefer to use limestone screenings mixed with dry cement in proper proportions. On this cushion the blocks C C are placed, and they may be of any desired material—as, for example, granite blocks or brick. They can easily be worked down into the cushion, as indicated in Fig. 1, so as to bring their upper ends into a proper plane. This may be a horizontal plane, as indicated, or it may be curved, so as to form a street-arch. Whatever the material forming the cushion may be, it must be of such a nature as will solidify under proper conditions, and if when the blocks have been positioned as suggested on the cushion and if the cushion as suggested is composed of limestone screenings and cement then if water be poured down between the blocks or bricks it will cause the sand and cement to solidify in a concrete-like mass, thus holding the blocks or bricks firmly in position.

The cushion may be of any material and thickness; but I would prefer it to be about two inches thick. I may use sand, limestone screenings, fine gravel, or crushed cobblestone, or other material to form the cushion, with the proper addition of materials which will cause the cushion to solidify. The spaces between the bricks or blocks are now supplied with a concrete filler, and I prefer one of a material somewhat similar to that of the cushion, applied in either wet or dry condition. If dry, the surface may be flooded and such filler caused to solidify. It may, however, be applied in a wet condition, as in the case of ordinary concrete, to fill the spaces between the blocks or bricks. There may still be surface irregularities on the blocks or between them, and therefore I prefer to fill the spaces between the blocks or bricks and these irregularities or cavities with a finisher preferably made with Portland cement. This may be in any desired condition and may be put in place in any desired manner. The surface may then be scraped or smoothed, so as to produce a flush surface on the blocks and the filler, so as to prevent the horseshoe-calks from entering the interstices between the blocks. This same operation will fill the imperfections in the block-surfaces with concrete. This scraping of the surface may be done by some form of rubber scraper.

It will be understood that I have not attempted to be exhaustive in statement of materials or their conditions or details of their application. The completed pavement consists, broadly, of a foundation, a cushion first yielding or plastic and then solidified, blocks, a filler, and a finisher, and the process, broadly considered, consists of making the foundation, laying a yielding or plastic cushion thereon, placing the blocks in position, solidifying the cushion, filling the interstices between the blocks, and, if desired, finishing the surface and solidfying the filler and the finisher. When the whole is complete and in position, it is waterproof, the strain on the block on which a wheel rests at any given movement is transmitted through the filler and the solidified cushion in both directions through one or more blocks onto an extended foundation area, the excessive pressure in strictly vertical lines, as in the case of a relatively loose block, is avoided, the surface is relatively smooth and flat, and there are no open interstices between the blocks to catch and hold material or catch the calks on horeshoes. As previously suggested, the order of these steps in the process may be varied and some steps may be omitted while ob-

taining some of the important features of my invention, and the materials used in the several elements may be greatly varied. The finishing may be omitted in the case where a rough unfinished pavement is satisfactory, and a weaker or more plastic filler than I have suggested may be employed, though to that extent it would seem to be less desirable than the use of my complete invention.

I claim—

1. The process of making a street-pavement which consists of laying a foundation which shall be substantially impermeable to liquid, covering such foundation with a cushion of dry relatively finely divided material containing cement, placing blocks of stone or the like generally rectangular and irregular in shape, upon such cushion in its dry state, and bringing their upper surfaces to a level by building up or hollowing such cushion beneath said blocks, then flooding such pavement with water after the blocks have been laid so that the water passes down through the interstices beneath the blocks and makes plastic the whole of such cementitious cushion and then allowing the same to harden.

2. The process of making a street-pavement which consists of laying a foundation which shall be substantially impermeable to liquid, covering such foundation with a cushion of dry relatively finely divided material containing cement, placing blocks of stone or the like generally rectangular and irregular in shape, upon such cushion in its dry state, and bringing their upper surfaces to a level by building up or hollowing such cushion beneath said blocks, then flooding such pavement with water after the blocks have been laid so that such water passes down through the interstices beneath the blocks and makes plastic the whole of such cementitious cushion and filling such interstices with a concrete filler.

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