March 6, 1928. 1,661,407

A. W. BUTLER

PAVING BLOCK

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Fig. 1

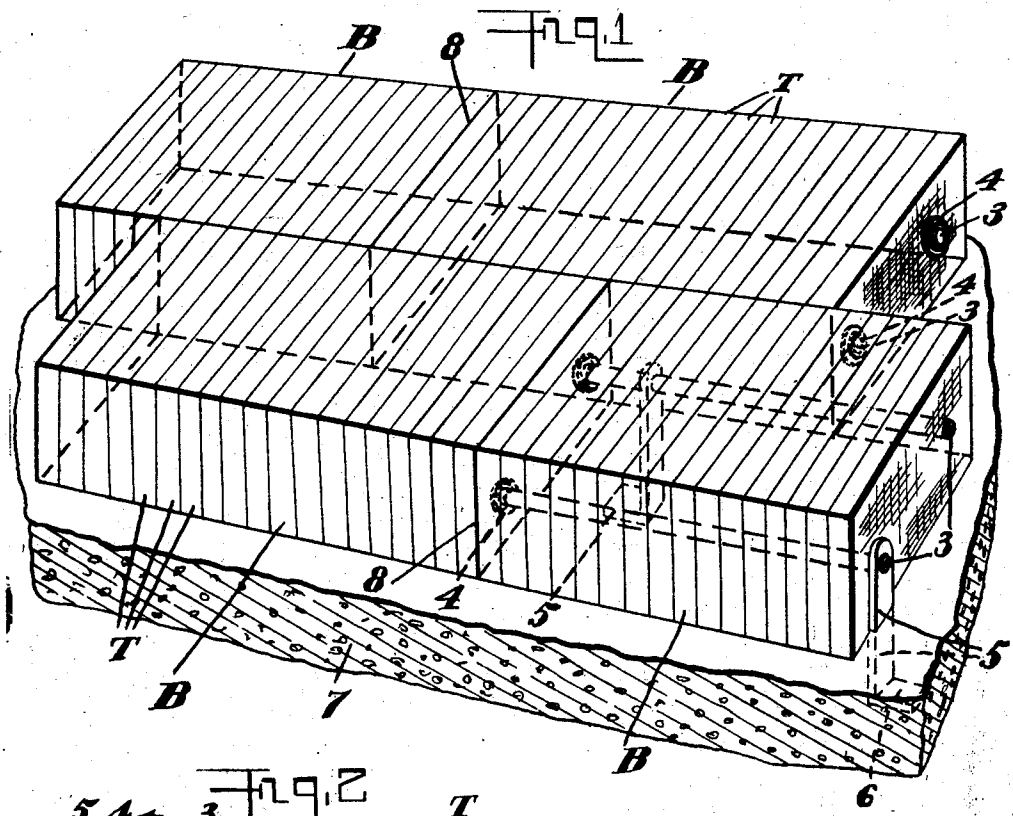


Fig. 2

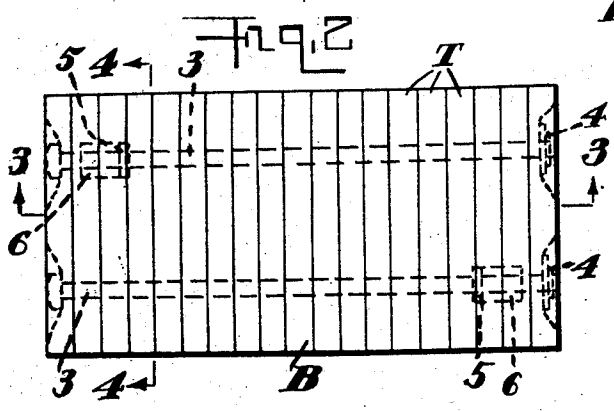


Fig. 4

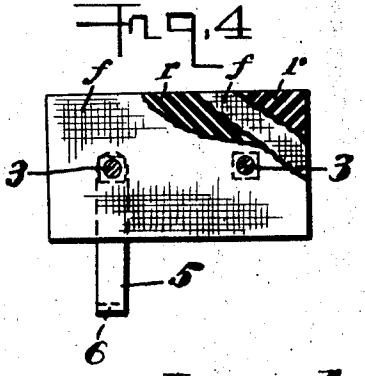
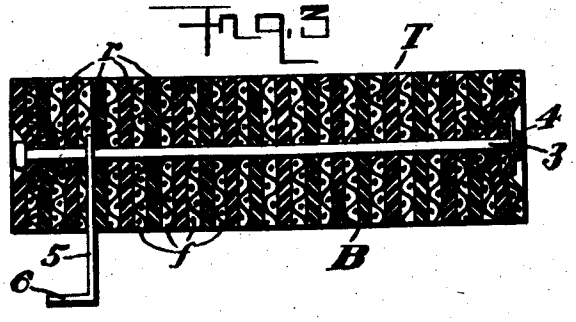


Fig. 3



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Fig. 5

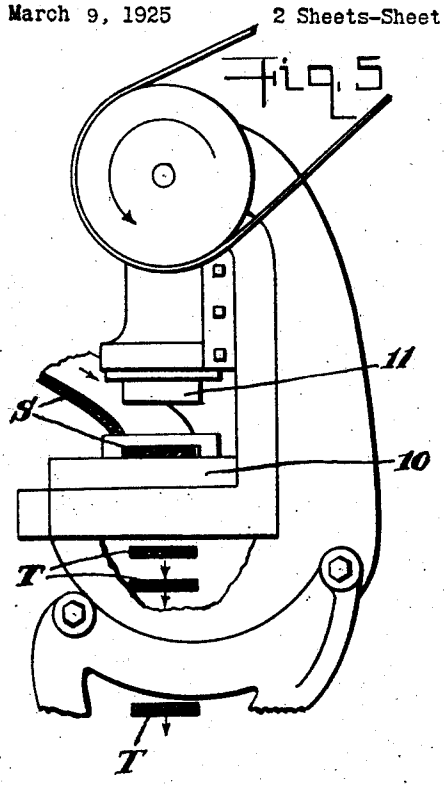


Fig. 7

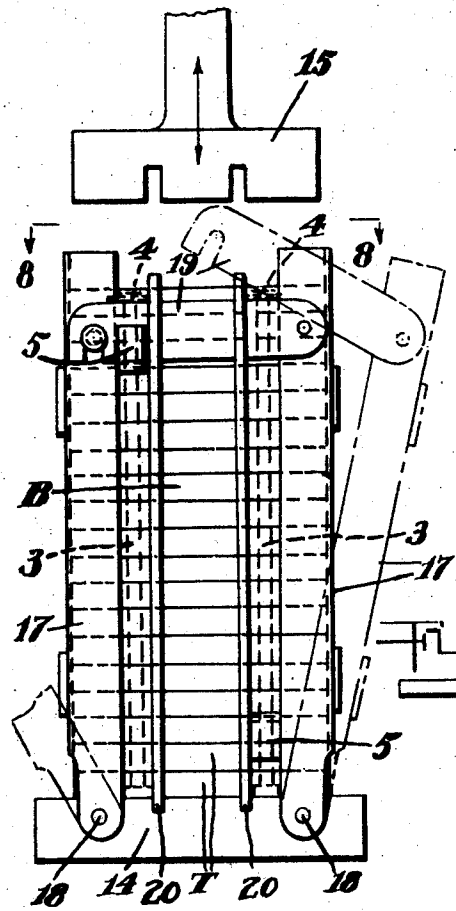


Fig. 9

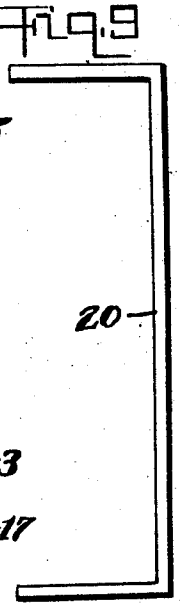


Fig. 6

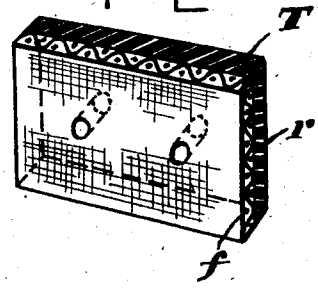
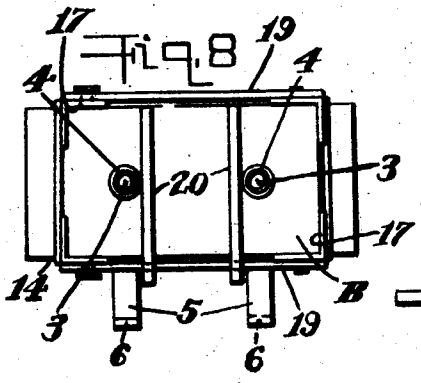


Fig. 8



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Patented Mar. 6, 1928. 1,661,407

UNITED STATES PATENT OFFICE.

ALTON WEBSTER BUTLER, OF WEST BRIDGEWATER, MASSACHUSETTS.

PAVING BLOCK.

Application filed March 9, 1925. Serial No. 14,117.

In the art of paving, various substitutes have been proposed for the usual stone or wooden paving block in the effort to obtain a paving surface which will be sufficiently resilient, noiseless and wear-resistant to meet the severe conditions of modern street traffic.

I have discovered that a very satisfactory paving block may be produced by cementing and solidly compressing together a plurality of alternate tread units of rubber and fabric with the units disposed vertically edgewise so as to present a resilient, substantially noiseless tread surface which not only possesses the requisite tractive qualities, but is practically impervious to wear.

The tread units comprising my paving block may be obtained from any desired source but are preferably obtained from the worn shoes of automobile tires. I thus convert what has heretofore been regarded as a waste product into an article of utilitarian value and I accomplish this without subjecting the shoes to further vulcanization or any other form of heat treatment.

According to my method, the shoes are severed into continuous strips from which I subsequently die out the individual tread units, after which the requisite number of these units necessary to make up a paving block of conventional size are cemented and solidly compressed together into paving block form. By using material of this nature, I secure alternating tread units of fabric and rubber in which the fabric and rubber components of the individual tread units were permanently united to each other during the process of vulcanizing the shoe and hence cannot slip and move relative to each other under the action of the various bodies passing over them when laid as a paving surface.

The construction and method of producing my paving block is described and illustrated in the accompanying specification and drawings, and the characteristic features of novelty are particularly pointed out on the appended claims. Throughout the specification and drawings, like reference characters are correspondingly applied. In the drawings:

Fig. 1 is a fragmentary view showing paving sand in accordance with my invention.

Fig. 2 is a plan view of one of my novel paving blocks.

Fig. 3 is a longitudinal section of the same.

Fig. 4 is a transverse view broken to show some of the layers.

Fig. 5 is a view showing the manner of dieing out the tread units from a woven automobile shoe, and

Fig. 6 shows one of said units.

Fig. 7 illustrates the subsequent step of compressing the tread units into conventional paving block form.

Fig. 8 is an end view looking from the line 8—8 of Fig. 7.

Fig. 9 is a view of one of my compression clips.

My paving block consists of a plurality of units T each comprising layers of rubber *v* and fabric *f*. These units are cemented and pressed solidly together into a block B of conventional form the layers being disposed vertically edgewise so as to present a resilient, substantially noiseless tread surface. As here shown the individual layer units constituting the paving block are pierced with registering holes through which extend longitudinally disposed tie rods 3 which serve to clamp the tread units in the assembly indicated in the drawings, being headed at one end and provided with lock nuts 4 at their opposite end.

If desired, anchoring lugs 5 may be hung from the tie rods as shown in Fig. 1. These lugs have anchoring portions 6 disposed below the bottom face of the block and bend to lodge in the cement 7 or other binding material or be driven in a wooden base or floor when such is used for the roadway base. The interstices between the individual blocks are filled with any usual pitch or asphalt binder 8 commonly employed in roadway building.

The alternate layers of rubber and fabric may be obtained from any desired source, but are preferably obtained by cutting up the worn shoes of automobile tires. In Figs. 5 to 8, I illustrate a characteristic method for carrying out this phase of my invention. Referring to Fig. 5, I have indicated at S a discarded shoe of the fabric type, that is, of the type wherein fabric wear strips are vulcanized into the rubber constituting the tread of the tire during the process of manufacturing the tire.

In accordance with my method the tire beads are cut from the shoe and the shoe severed between its ends so that it extends as a continuous strip S. This strip is next laid in a suitable die block 10 and subjected to

the action of a vertically reciprocating die 11 which dies out from the tread portion of the shoe a series of individual tread units T each consisting of a layer of rubber *r* and an embedded layer of fabric *f*. The strips of the shoe on either side of the central strip thus removed are afterwards set beneath the die 11 and similarly cut up into individual tread layer units.

These individual tread units are next built up into a paving block of conventional form by first punching out the holes which receive the tie rods 3, after which the individual units are dipped in a cementitious coating and strung on the tie rods. When a sufficient number of units are assembled to form a paving block of the required dimensions the assembly is inserted in a form 14, as shown in Fig. 7 and subjected to the action of a press 15 which compresses them into a solid homogeneous unit. This form consists of a base block from which rises at the corners thereof a vertical series of guide bars in the form of angle irons 17 between which the tread assembly is endwise entered as indicated in Fig. 7. The angle irons are hinged at their lower ends at 18 to the base block and are connected to each other between their ends by pivoted latches 19 whereby the form may be collapsed and the finished paving block removed after the press has operated. Before the form is collapsed however, and while the assembly is still held compressed, the nuts 4 are applied to the upper ends of the tie rods 3 and are permanently locked thereon in any desired manner as by heading said ends over said nuts. The blocks are held in compressed condition by clips 20 which are withdrawn after the blocks are laid in mutual compression to form the paving surface. I thus form a pavement consisting of similar blocks of conventional dimensions and of such outline as to permit them to be laid in close juxtaposition to each other so as to present a substantially continuous tread surface composed entirely of the exposed upper edges of a multiplicity of relatively thin vertically disposed laminæ of fabric and rubber arranged in close laid compressed relation to each other. Such a tread is resilient, noiseless and non-slipping. It has unusual capacity for absorbing concussion shock and by reason of the edgewise disposition of the rubber and fabric laminæ will wear indefinitely.

Various modifications in the construction and method of assembling my paving block may obviously be resorted to if within the limits of the appended claims.

What I therefore claim and desire to secure by Letters Patent is:

1. A pavement consisting of a plurality of paving blocks, each having a contour permitting it to be laid in close juxtaposition to other similar blocks, each block consisting of a plurality of relatively short laminæ of rubber and fabric assembled face to face in vertical edgewise relation and compressed to form a block of uniform dimensions presenting a substantially continuous resilient, non-skid and noiseless tread surface composed entirely of the exposed upper edges of the rubber and fabric laminæ.

2. A pavement consisting of a plurality of paving blocks, each having a contour permitting it to be laid in close juxtaposition to other similar blocks, each block consisting of a plurality of relatively short laminæ of rubber and fabric assembled face to face in vertical edgewise relation and compressed to form a block of uniform dimensions presenting a substantially continuous resilient, non-skid and noiseless tread surface composed entirely of the exposed upper edges of the rubber and fabric laminæ, and anchoring members extending from said blocks.

In testimony whereof I affix my signature.

ALTON WEBSTER BUTLER.

CERTIFICATE OF CORRECTION.

Patent No. 1,661,407. Granted March 6, 1928, to

ALTON WEBSTER BUTLER.

It is hereby certified that the above numbered patent was erroneously issued to the inventor said Butler, as owner of said invention, whereas said patent should have been issued to E. H. Clapp Rubber Company, of Boston, Massachusetts, a Corporation of Massachusetts, as assignee of the entire interest in said invention as shown by the records of assignments in this office; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 10th day of April, A. D. 1928.

(Seal)

M. J. Moore,
Acting Commissioner of Patents.