April 26, 1927. 1,626,269

E. CLARK

PAVING BLOCK

Filed Oct. 6, 1922

Fig. 1.

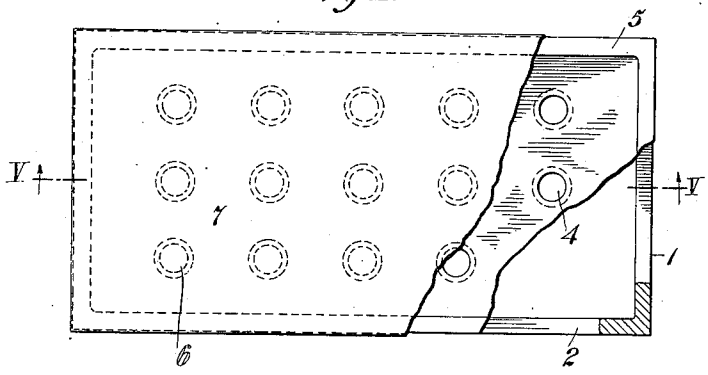


Fig. 2.

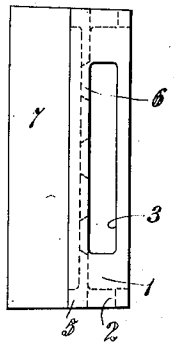


Fig. 3.

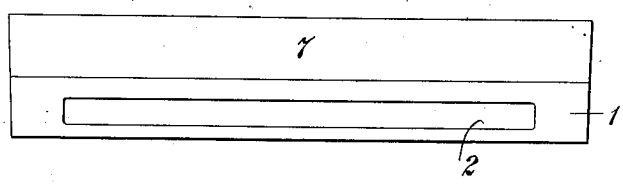


Fig. 4.

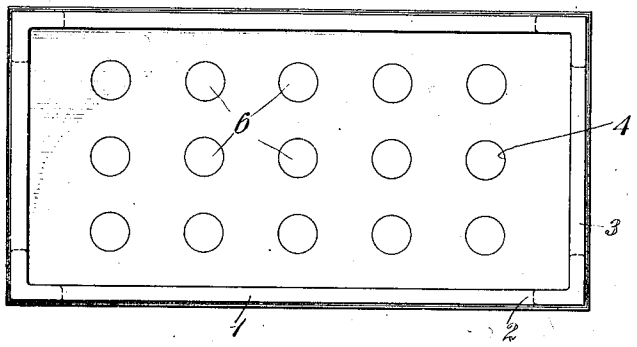
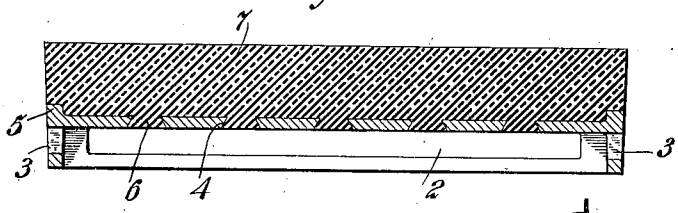


Fig. 5.



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UNITED STATES PATENT OFFICE.

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PAVING BLOCK.

Application filed October 6, 1922, Serial No. 592,838, and in Brazil June 8, 1922.

This invention relates to an improvement in paving blocks for roads and other surfaces, and has for an object to provide a block which, while presenting a resilient and noiseless surface, will withstand severe wear and climatic changes.

Another object consists in providing a paving block which may be easily placed in position and firmly secured by a plastic material, such as concrete, and which may also be readily removed and replaced by new blocks, as occasion may require.

Another object consists in providing a paving block in which the resilient and base portions are firmly secured together.

Another object consists in providing a paving block which, while embodying the features of advantage above outlined, as well as others inherent in it, is comparatively simple and cheap to manufacture.

Another object consists in providing certain improvements in the form, composition, construction and arrangement of the several parts whereby the above named and other objects may be effectively attained.

A practical embodiment of my invention is represented in the accompanying drawings, in which

Fig. 1 represents a plan view of the paving block, partly broken away.

Fig. 2 represents an end elevation of the same.

Fig. 3 represents a side elevation of the same.

Fig. 4 represents an inverted plan view of the same, and

Fig. 5 represents a vertical section taken in the plane of the line V—V of Fig. 1, looking in the direction of the arrows.

Broadly speaking, the invention comprises a composite block which includes a base of strong, hard material, such as metal, and a surface of resilient but wear resisting material, such as vulcanized rubber compound. These two parts are preferably united by an intermediate layer or portion of a very hard rubber compound.

Referring to the drawings, the base, which is preferably composed of cast iron, or similar material, is denoted by 1, and consists of an open skeleton casting which has apertures in its sides, marked 2, and apertures in its ends, indicated by 3. This skeleton formation of the base enables it to be very firmly held in a foundation of material, such as concrete, owing to the fact that, as the block is put in place in the plastic material, the latter will enter the apertures and thus, upon hardening, form an intimate interlocking engagement with the base of the paving block.

The bottom of the base is preferably entirely open, as clearly shown in Fig. 4, as this enables the casting to be more readily drawn from the sand in which it is molded. To this end also I prefer to have the area of the bottom of the base slightly less than the area of the top, so that the side walls and ends may be somewhat tapered, as indicated in Figs. 2, 3 and 5. This promotes economy of manufacture, which is of some importance, as it will be understood that these blocks are intended to be produced in large quantities.

The upper face or top of the base is provided with a number of apertures 4 which are preferably flared or under-cut, so that their top diameter is less than their bottom diameter, as clearly indicated in Fig. 5. The provision of these holes enables the resilient portion of the block to have a strong interlocking engagement with the base portion. The upper surface of the base portion is also surrounded by an uprising flange 5, so that the said upper surface is, as a whole, depressed below the upper periphery of the base portion.

The resilient part of the block is preferably composed of vulcanized rubber compound, and I also prefer to form this compound in two layers or parts of different composition; the layer which is in immediate contact with the base portion of the block being of a very hard rubber composition, while the surface layer is softer. The first named layer is represented by the plain heavy lines in Fig. 5, and is marked 6, while the upper layer is represented by the alternating lines and dashes, and is denoted by 7. These two layers are not more clearly separated since, in manufacture, it is intended that they shall be intimately united into a single composite element.

Any suitable very hard rubber composition may be employed for the intermediate layer 6, but I prefer to use one which consists of substantially fifty percent pure rubber and fifty percent sulphur, with about one percent of an ingredient such as beeswax.

This compound vulcanizes very hard, and is adapted for immediate contact with the

metallic base portion of the block both because of its hard nature and because it has a higher degree of adherence to the metal upon vulcanization or, as it may be expressed, it has a greater affinity for the metal.

This hard layer is preferably comparatively thin, and serves to enter the holes 4 and fill in the depressed surface of the base portion.

The more resilient upper layer is comparatively thick and, while it may be composed of any suitable composition which vulcanizes into a condition that is slightly yielding and yet resistant to wear and abrasion to a high degree, it is preferably made of a composition similar to that commonly employed for the tread portions of solid rubber truck tires. A composition which I have found desirable consists of about twenty-five percent pure rubber, twelve and one-half percent sulphur, with the remainder fillers, preferably including about twenty percent of ground cork. A suitable accelerator may be added to the extent of about one and one-half percent for assisting in the vulcanization.

The manner of compounding and producing these layers of rubber is thoroughly well understood to operatives in the rubber industry, so that it need not be further detailed. I may simply say that the rubber compounds are suitably cut to shape and pressed into intimate engagement with the metallic base portion by the use of any desirable apparatus, after which the whole block is subjected to a suitable temperature for a suitable period of time in order to vulcanize the rubber layers, which causes them to assume their finished condition as well as to unite with each other and with the base portion.

When, in the claims, I refer to the upper surface as "continuous", I do not intend to exclude a surface which is grooved, or otherwise figured to promote its anti-slipping qualities. The point is to have the upper surface resilient throughout.

In use, it will be understood that the blocks are laid in a foundation of cement, or similar material, in an obvious manner, it being clear that the setting of the blocks down in the cement will cause the latter to enter the openings in the base portion, so as to firmly secure the blocks in place after the cement has dried, as hereinbefore noted. In laying the blocks, I prefer to break joints and, to this end, prefer to have the blocks of oblong shape, as indicated in the drawings. In case it is desired to replace the blocks, it is simply necessary to break them away from their cement foundation to the extent desired, replace a layer of plastic cement, and lay new blocks as before.

It will be understood that various changes may be resorted to in the form, composition, construction and arrangement of the several parts without departing from the spirit and scope of my invention; hence, I do not intend to be limited to the specific details herein shown and described, except as the same may be included in the claims.

What I claim is:

1. An article of the character described comprising, a hard base portion having downwardly projecting flanges of skeleton formation, and a resilient top portion secured to the base portion.

2. An article of the character described comprising, a hard base portion having upwardly projecting flanges, said base portion also having downwardly projecting flanges of skeleton formation, and a resilient top portion secured to the base portion.

3. An article of the character described comprising, a metallic base portion having downwardly projecting flanges of skeleton formation, and a rubber top portion secured to the base portion.

4. An article of the character described comprising, a metallic base portion having upwardly projecting flanges, said base portion also having downwardly projecting flanges of skeleton formation, and a rubber top portion secured to the base portion.

5. An article of the character described comprising, a hard base portion having holes therein, said base portion also having downwardly projecting flanges of skeleton formation, and a resilient top portion secured to the base portion with the top portion interengaging with the holes of the base portion.

6. An article of the character described comprising, a hard base portion having holes therein, said base portion also having upwardly projecting flanges and being provided with downwardly projecting flanges of skeleton formation, and a resilient top portion secured to the base portion with the top portion interengaging with the holes of the base portion.

7. An article of the character described comprising, a metallic base portion having holes therein, said base portion also having downwardly projecting flanges of skeleton formation, and a rubber top portion secured to the base portion with the top portion interengaging with the holes of the base portion.

8. An article of the character described comprising, a metallic base portion having holes therein, said base portion also having upwardly projecting flanges and being provided with downwardly projecting flanges of skeleton formation, and a rubber top portion secured to the base portion with the top portion interengaging with the holes of the base portion.

9. An article of the character described comprising, a hard base portion having

downwardly projecting flanges arranged to form an open figure, and a resilient top portion secured to the base portion.

10. An article of the character described comprising, a metallic base portion having downwardly projecting flanges arranged to form an open figure, and a rubber top portion secured to the base portion.

11. A paving or flooring element composed of rubber having a continuous upper surface and projections on its lower surface for engagement with a support, said projections being arranged in spaced relation both lengthwise and crosswise of the lower surface of the element.

12. A paving or flooring element composed of rubber having a continuous upper surface and projecting studs on its lower surface for engagement with a support.

13. A paving or flooring element composed of rubber having a continuous upper surface and projecting studs with enlarged heads on its lower surface for engagement with a support.

14. A paving or flooring element composed of rubber having a continuous upper surface and projections on its lower surface for engagement with a support, said projections embodying a relatively hard material, said projections being arranged in spaced relation both lengthwise and crosswise of the lower surface of the element.

15. A paving or flooring element composed of rubber having a continuous upper surface and projecting studs on its lower surface for engagement with a support, said studs embodying a relatively hard material.

16. A paving or flooring element composed of rubber having a continuous upper surface and projecting studs with enlarged heads on its lower surface for engagement with a support, said studs embodying a relatively hard material.

17. A paving or flooring element composed of rubber having a continuous upper surface and projections on its lower surface for engagement with a support, said projections being composed of material of substantially the same nature as the element, and a plurality of said projections being spaced from all the edges of the element.

18. A paving or flooring element composed of rubber having a continuous upper surface and projecting studs on its lower surface for engagement with a support, said studs being composed of material of substantially the same nature as the element, and a plurality of said studs being spaced from all the edges of the element.

19. A paving or flooring element composed of rubber having a continuous upper surface and projecting studs with enlarged heads on its lower surface for engagement with a support, said studs being composed of material of substantially the same nature as the element, and a plurality of said studs being spaced from all the edges of the element.

In testimony, that I claim the foregoing as my invention, I have signed my name this 3rd day of October, 1922.

ERNEST CLARK.