

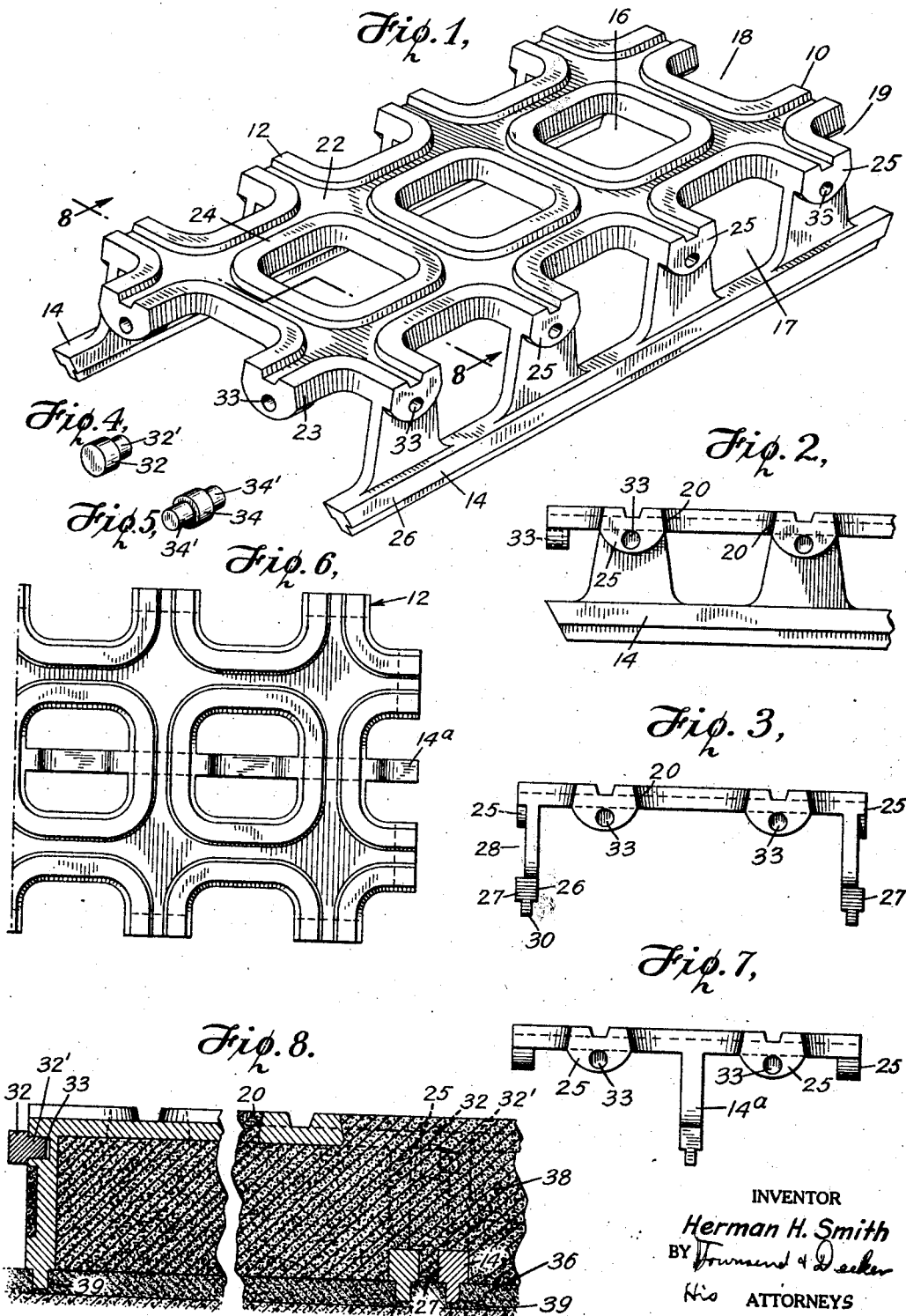
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PAVEMENT

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PAVEMENT.

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This invention relates to improvements in pavements wherein the usual pavement material is supplied with an armor or metallic surface for producing longer wear and preventing injury to the surface of the pavement.

It is a primary object of the invention to securely embed the metallic units forming the wearing surface in the pavement material in such manner as to provide for securely holding said inserts therein but at the same time providing for continuity of the pavement material through, around and between the metallic inserts.

Another object of the invention is to form a surface which will give sufficient traction for the vehicles passing over the same to prevent slippage and to expose the pavement material at the surface of the metallic units through openings serving to further secure the unit to the pavement material.

It is still another object to provide spacing elements for the units which will accommodate contraction and expansion of the units but which will insure them to be spaced equidistantly with relation to one another.

These and other objects will appear more fully as the description proceeds:

In the drawings:

Fig. 1 is a perspective view of one of the metallic inserts constructed according to my invention.

Fig. 2 is a side elevational view of a portion thereof.

Fig. 3 is an end elevation of the insert shown in Fig. 1.

Fig. 4 is a perspective view of one of the spacing units which may be employed.

Fig. 5 is a similar view of a modification thereof.

Fig. 6 is a plan view of a unit with the surface constructed as in the first form of the invention but with a modified anchoring projection.

Fig. 7 is an end elevation of the insert shown in Fig. 6, and

Fig. 8 is a vertical sectional view of a portion of a completed pavement showing my invention in position.

This invention constitutes an improvement upon the pavement disclosed in my Patent No. 1,560,354, reference being had to this patent for the general objects and advantages of the paving unit herein disclosed.

Referring to the details of the drawings and particularly to Figs. 1, 2, 3, wherein one

complete metallic unit or insert is disclosed, this unit indicated generally by the numeral 10 comprises a portion 12 constituting the wearing surface of the insert and formed with side extensions 14 preferably integral therewith and serving to securely anchor the unit in the pavement material, as will appear more fully below. It is to be understood that the tread portion 12 of the unit is intended to be sunk into the pavement material so as to lie substantially flush with the surface thereof. The tread surface is formed with any desired number of openings 16 in the body thereof and with openings 17 formed adjacent to the junction of the extensions 14 and body portion 12, thus constituting edge openings for the tread portion of the unit and permitting of the through packing of the pavement material over and around the side extensions. The ends of the unit are formed with additional openings 18 and with corner openings 19, the openings 17 and 18 occupying a portion of the tread surface 12 of the unit similar to one-half of the openings 16 and the corner openings 19 being similar substantially to one-fourth of the openings 16, so that when a series of said units are laid the openings in the series will be of substantially the same size and uniformly arranged. The edges of all of the openings 16 to 19 are preferably inclined as indicated at 20 so that these openings will be upwardly flared and when they have received the pavement material the shape of the pavement material therein will be wedge-shaped for securely holding the units from upward movement with respect to the body of the pavement material. The tread surface of the unit is further provided with surface depressions or grooves 22 preferably formed as continuing and intersecting grooves extending lengthwise and crosswise throughout the entire surface of the unit. The edges of the depressions or grooves 22 and the sides of the openings form a series of projections 24 surrounding each of the openings and projecting only a sufficient distance to give the additional traction required for ordinary use. The edge openings 17, 18 and 19 form end projection 23 and side projections 25 which I prefer to reinforce by making the material at these points relatively thick vertically so as to strengthen the projections and from abutment projections for receiving the spacing elements hereinafter referred to. The anchoring extensions 14 are attached to the body part 12 of

the units by the metal between the openings 17 preferably formed relatively thin and terminating in the enlarged longitudinally extending base portions 26 formed with projections 27 upon the outer sides of the same. The spaces between the projections 25 and 27 form longitudinal grooves 28 for receiving the pavement material and since successive units are formed with the grooves 28 placed in opposed relation, a relatively large body of continuous pavement material is positioned between the units and serves to hold them firmly embedded therein. The sides of the openings 17 extending into the side members 14 preferably converge downwardly so as to form wedge-shaped openings as shown for example in Fig. 2 for further assisting in holding the unit within the pavement material. The lower edges of the side extensions 14 may be formed with locking projections 30 as completely disclosed in my patent referred to above.

For the purpose of spacing the metallic units so that they will be firmly held with relation to one another and to the pavement material but without direct contact of the units I prefer to employ a soft metal plug as indicated at 32 in Fig. 4, or at 34 in Fig. 5. The plug 32 has a reduced extension 32' fitting snugly within the openings 33 formed in the projections 23 and 25 of the units, the enlarged body of the plug engaging the projecting portions 25 of adjacent units, thus serving to space them but being displaceable under extreme pressures so that the units will not be caused to buckle or become otherwise displaced, for example, by reason of the change in temperature. If the form of plug shown in Fig. 4 is employed, such plugs may be placed alternately in the apertures 33 for engagement against the opposed extensions of the next succeeding block or the blocks may be inserted in opposed openings 33 and have the outer faces thereof engaged with one another, in which case the heads of the plugs will be made relatively shorter. The plug 34 shown in Fig. 5 has reduced extensions 34' for engagement in opposed openings 33 so as to be positioned with relation to the successive units. It is to be understood that the number of plugs employed may be varied so that the plugs may be placed on all of the extensions 23 and 25 or only on certain of said extensions as may be deemed advisable.

In Figs. 6 and 7 I have shown a slight modification of my invention in which the anchoring extension 14' is positioned adjacent the central portion of the unit instead of providing the two side extensions as in the first form of the invention, the extension and body portion 12 of the unit being otherwise as shown in the first form of the invention.

Referring to Fig. 8 of the drawings, there is shown one application of my invention to a pavement. This pavement comprises the

usual cement base with a cement mortar cushion 36 positioned between the base and the asphalt or other pavement material 38. The metallic unit shown in Fig. 1 is embedded into the pavement material 38 so that the side extensions 14 are firmly anchored therein and with the locking projections 30 extended into the mortar cushion as indicated at 39. The units are spaced by the plugs 32 positioned within certain of the apertures 33 and engaged against the opposed faces of the projections 24 and 25, as described above.

The longitudinal grooves 28 are shown as opposed so as to receive a body of the asphalt pavement increasing the continuity of the pavement longitudinally of the units, the projections 25 and 27 serving to position the units in the pavement material. The inclined side edges of the openings 16 to 19 and the inclination of the sides of the openings 17 in the extensions 14 co-operate with the extensions 27 serve to securely hold the units against displacement within the pavement material. In case of an excessive pressure between successive units, the plugs 32 will become compressed, the character of these plugs however normally serving to prevent the displacement of the units, for example, while the pavement is being laid.

It is to be understood that the unit may be used in various ways, for example, it may be used with asphalt, concrete, rubber or any other form of pavement in which a metallized surface would be beneficial. It may be employed as an insert to be sunk into the pavement material or may be filled in advance with a pavement material and the unit so filled laid as a paving block, or the unit may be placed in an old existing pavement by cutting out portions of the pavement material to receive the anchoring extensions of the units and the space so cut out and partially occupied by the extensions 14 as well as the openings 16 etc. may be thereafter filled with plastic paving material such as hot asphalt.

While I have shown and described certain specific embodiments of my invention, it is to be understood that these are merely illustrative and that I am to be limited only as set forth in the appended claims.

I claim:

1. A metallic paving element adapted to be applied to a pavement material and formed with a tread portion and downwardly extending anchoring extensions, said extensions being formed with side projections and depressions upon the outer faces thereof extending throughout substantially the entire length of the same, said projections extending into said pavement material and said pavement material entering said depressions when said element is applied to a pavement material.

2. A pavement including a body of pavement material and a plurality of metallic in-

serts embedded therein, means for spacing said inserts relatively to one another, said means comprising spacing plugs having means for engagement with said inserts and
5 formed of a metal softer than the metal of said inserts.

10 3. A pavement including a body of pavement material and a plurality of metallic inserts embedded therein, means for spacing said inserts relatively to one another, said means comprising spacing plugs formed of a metal softer than the metal of said inserts, and means for supporting said plugs on said inserts.

15 4. A pavement including a body of pavement material and a plurality of metallic inserts embedded therein, means for spacing said inserts relatively to one another, said means comprising leaden spacing plugs having means for engagement with said inserts.
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5. A pavement including a pavement material and a plurality of metallic units placed in contiguous relation and forming a portion of the exposed wearing surface thereof,
25 said units being formed with anchoring elements extended into said pavement material, the adjacent surfaces of said anchoring elements being formed with opposed transverse

openings and with opposed surface depressions constituting spaces of substantial capacity for receiving pavement material between
30 said units.

6. A pavement including a pavement material and a plurality of metallic units forming a portion of the exposed wearing surface
35 thereof, said units being formed with anchoring elements extended into said pavement material in contiguous relation, the outer surfaces of adjacent elements in said pavement having opposed depressions for receiving
40 said pavement materials, said depressions extending throughout substantially the entire length of said elements.

7. A pavement including a pavement material and a plurality of metallic units embedded in said pavement material with the
45 side surfaces of said units arranged in contiguous relation, the side surfaces of adjacent units having opposed surface depressions constituting spaces of substantial capacity
50 for receiving said pavement material and anchoring said units therein.

Signed at New York, in the county of New York and State of New York, this 30th day of March, A. D. 1926.

HERMAN H. SMITH.