F. A. BROTSCH, JR.

PAVEMENT CONSTRUCTION.

APPLICATION FILED NOV. 3, 1919.

1,384,042. Patented July 12, 1921.

Fig. 1

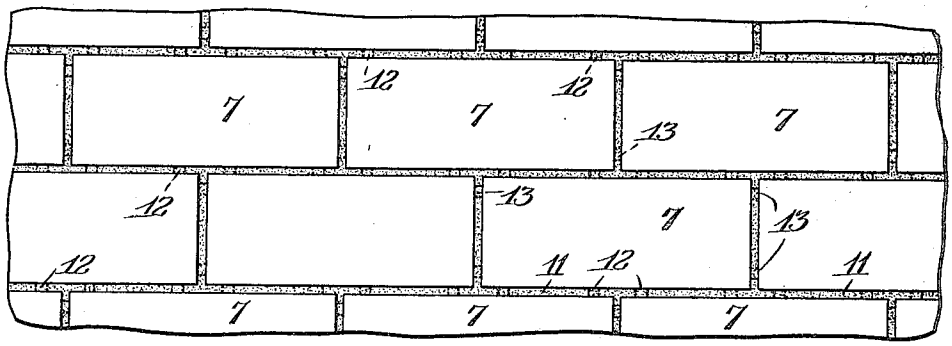


Fig. 2

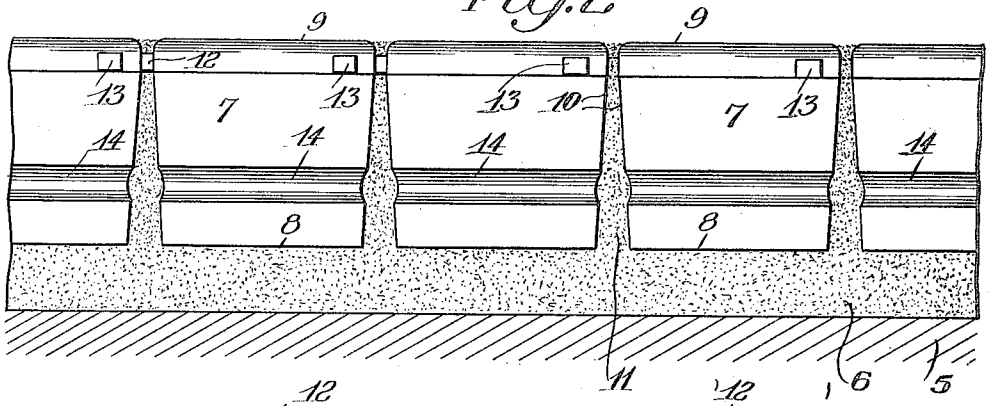


Fig. 3

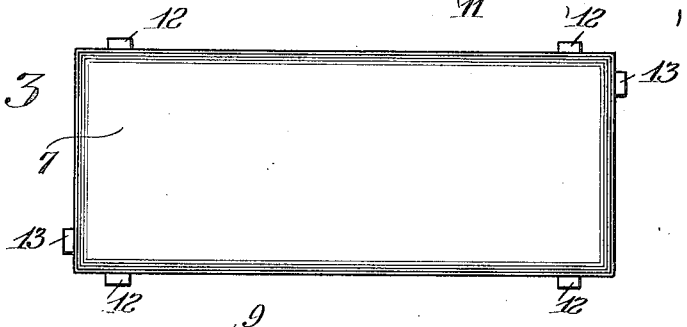
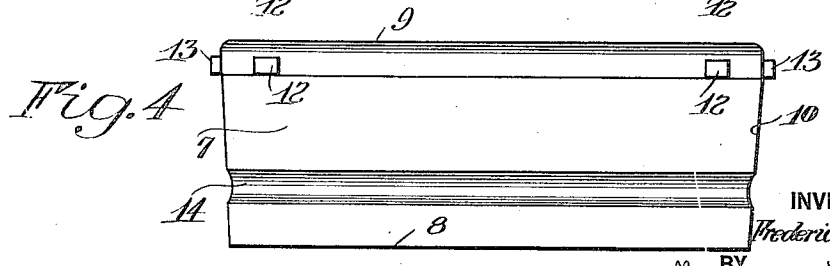


Fig. 4



INVENTOR
Frederick A. Brotsch Jr.
BY
Frederick W. Church
his ATTORNEY

UNITED STATES PATENT OFFICE.

FREDERICK A. BROTSCH, JR., OF BRIGHTON, NEW YORK.

PAVEMENT CONSTRUCTION.

1,384,042. Specification of Letters Patent. Patented July 12, 1921.

Application filed November 3, 1919. Serial No. 335,338.

To all whom it may concern:

Be it known that I, FREDERICK A. BROTSCH, Jr., a citizen of the United States, and resident of Brighton, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Pavement Construction; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-numerals marked thereon.

This invention relates to paving and, more particularly, to pavements constructed of bricks, blocks and similar sections, having an interposed material for securing them together in place, one object of the invention being to provide in a pavement of the above type an improved form of construction which is especially durable and economical in character.

A further object is the provision of an advantageous form of construction for the sections or blocks, insuring arrangement thereof relative to one another in a manner effecting proper disposition of the materials employed, and the consolidation thereof into a unitary, rigid and durable structure. To these and other ends the invention consists in certain improvements and combinations of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings:

Figure 1 is a top plan view of a pavement constructed in accordance with the present invention.

Fig. 2 is a sectional elevation thereof.

Fig. 3 is a top plan view of one of the sections and

Fig. 4 is a side elevation of the same.

Similar reference characters throughout the several views indicate the same parts.

In the embodiment of the invention which has been selected for the purpose of the present disclosure to illustrate the principles involved, there is employed a sub-grade 5 of any suitable construction, Fig. 2, on which is placed a layer of material 6, preferably of a cementing or binding nature forming a suitable matrix. On the latter are laid the bricks, blocks or other sections 7, which may be of any suitable material, and are formed with lower bases 8 smaller than their upper bases 9, so that each section has its sides 10 tapering toward each other from the surface of the pavement toward its bottom. The sections are preferably laid in spaced relation in the pavement so that there are provided between adjacent sections intervals 11 which increase in width downwardly from the surface toward the bottom of the pavement, and the intervals 11 are filled with material, preferably of a cementing or binding nature which penetrates to the bottom thereof and into engagement with the matrix 6. The sections are thus completely supported at the sides and bottom, and all of the material becomes firmly and securely bound together into a unitary, rigid structure.

The sections 7 may have various shapes, the truncated quadrilateral pyramid shown in the drawings having been found advantageous in practice. The tapering form of the interval between sections, increasing in width downwardly is an important feature in that it facilitates a penetration of the cementing material to the very bottom of the interval so that the sections are not only completely supported on all sides and bound together, but the material in the intervals reaches the bottom layer 6 and unites therewith thus forming a solid and rigid structure.

In pavements in which the interval is wider at the top than at the bottom, or even of the same width from top to bottom, a cementing material, engaging the sides of the interval, tends to become clogged in the latter without penetrating to its bottom, and when in fluid form tends to "freeze", or harden, and become set in the interval before it penetrates to the bottom thereof, so that it fails to fill the interval and unite with the bottom layer or matrix, thus leaving the sections partially supported on their sides without union between the material in the intervals and the matrix. This had been found in practice to result in a loosening of the sections in wear, or under the action of the weather, thus materially decreasing the life of the pavement. The present invention overcomes this difficulty in that the interval is progressively wider from top to bottom providing increasing space for the filling material. The latter is therefore not impeded in its flow but penetrates in substantial quantity to the bottom of the interval and into union with the bottom layer 6.

In order to insure uniform and proper spacing of the sections when laid, they are preferably provided on their sides adjacent the ends thereof with spacing elements or lugs 12, and on their ends with similar elements 13 in right and left hand arrangement, these lugs 12 and 13 falling into proper relative spacing in the pavement for securing an interval on all sides of the section. The lugs may, of course, be otherwise placed on a section, if so desired, and may project from it a greater or less distance to provide the desired width of interval, as illustrated in Figs. 1 and 2.

To further secure firm engagement of the sections with the material interposed in the intervals between them, the latter are preferably formed with anchoring portions adapted to engage or interlock with the interposed material. These portions in the present instance are in the form of grooves or indentations 14 into which the material flows and which satisfactorily secure the end desired, without, however, interfering with the penetration of the cementing material to the bottom of the interval.

The sections are simple in construction and economical to manufacture, and the pavement may be economically laid. The form of the sections insures the proper relative setting of the latter and the effective disposition of the materials so that the sections are fully supported at their sides and bottom and all the parts firmly united in a solid and rigid construction which prevents the sections from becoming loosened in use and affords an exceedingly durable pavement.

I claim as my invention:

1. A pavement comprising a plurality of juxtaposed sections smaller at their bottoms than at their tops to provide downwardly increasing intervals therebetween and facilitate the penetration of cementing material adjacent the bottoms of said intervals, cementing material in said intervals for securing them together, and anchoring portions on the sections providing horizontal shoulders interlocking with the cementing materials to prevent upward or downward movement of the sections.

2. A pavement comprising a plurality of juxtaposed sections formed to provide downwardly increasing intervals therebetween and an interposed cementing material for securing the sections together, said sections having portions adapted for locking engagement with the cementing material, and having spacing lugs disposed adjacent the top thereof.

3. A pavement comprising a plurality of juxtaposed sections having spacing elements for securing intervals therebetween and formed to increase the width of said intervals from top to bottom of said sections to facilitate the penetration of cementing material adjacent the bottom of said sections, and cementing material in said intervals for securing the sections together, the top edges of the sections being chamfered on all sides thereof and having a uniform and substantial thickness of cementing material therebetween.

4. A pavement comprising sections having spacing elements for securing intervals therebetween and formed to increase the width of said intervals from the surface of the pavement downwardly to facilitate the penetration of cementing material adjacent the bottom of said sections, and cementing material in said intervals for securing the sections together, the latter having portions adapted to interlock with said material for holding them firmly in place.

5. A pavement comprising a plurality of sections each having spacing lugs disposed adjacent the top thereof, the top edges of the sections above the lugs being beveled, the sides below the lugs being beveled to produce a downwardly decreasing area of cross section, a locking groove on each of the sides and a cementitious material between the sections of downwardly increasing width, said cementitious material extending above the spacing lugs and between the rounded upper edges.

6. A pavement comprising blocks substantially of the shape of truncated pyramids with their smaller bases downwardly, providing downwardly increasing intervals therebetween to facilitate the penetration of cementing material, and cementing material in said intervals, said blocks being formed with horizontally extending indented portions on the sides thereof for interlocking with said material to prevent them from becoming loosened therefrom.

FREDERICK A. BROTSCH, JR.