Nov. 6, 1928.

J. B. STRAUSS

1,690,259

PAVEMENT

Filed Dec. 30, 1922

2 Sheets-Sheet 1

Fig. 1

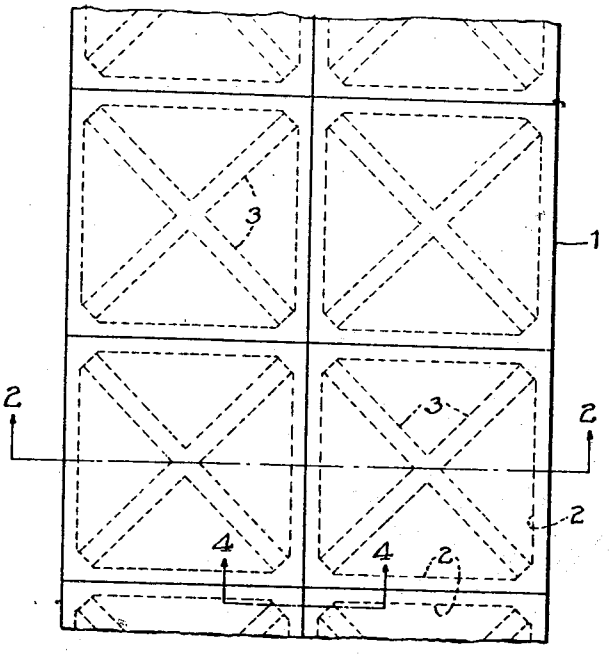
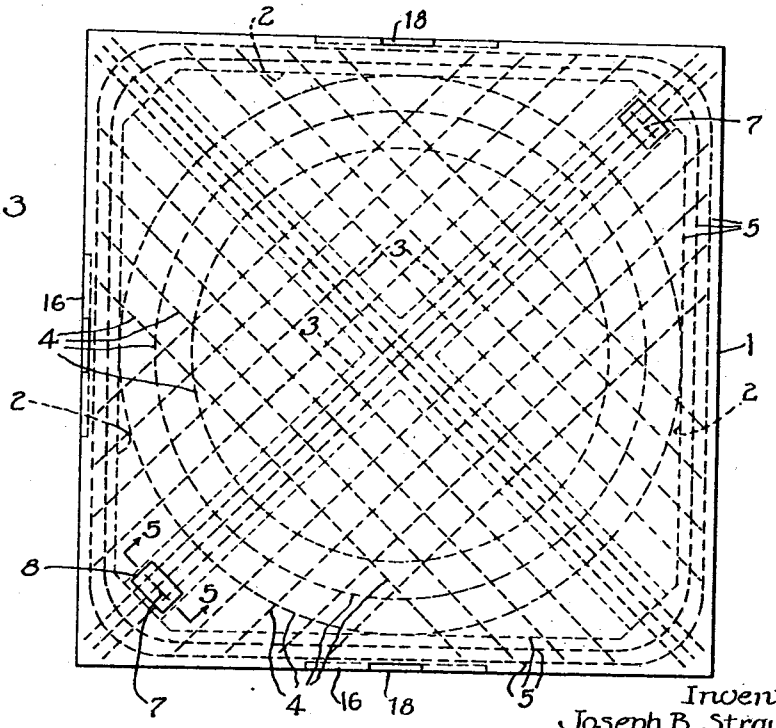


Fig. 3



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2 Sheets-Sheet 2

Fig. 2

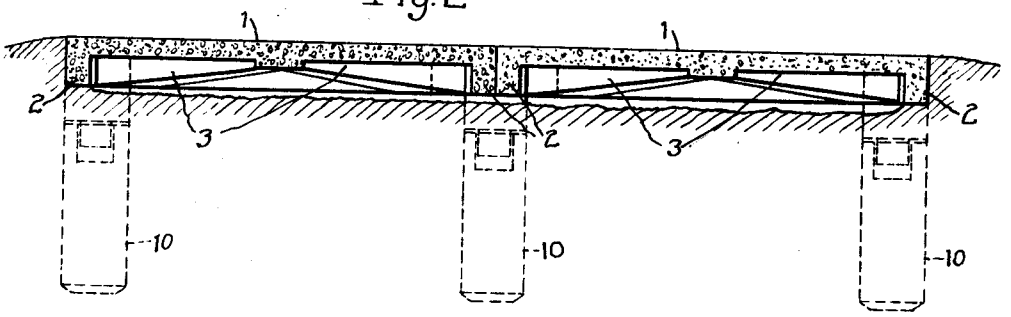


Fig. 4

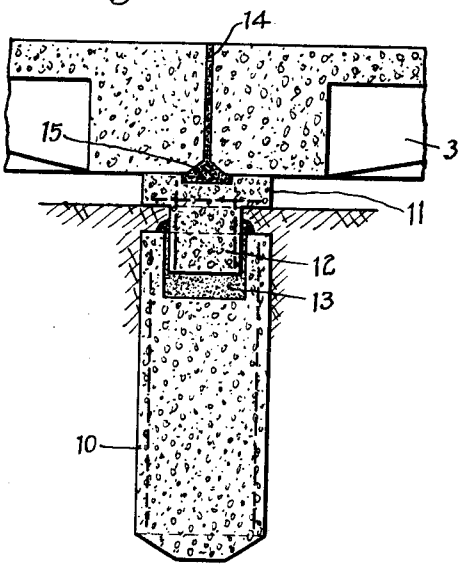


Fig. 5

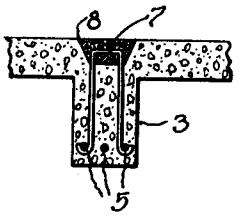
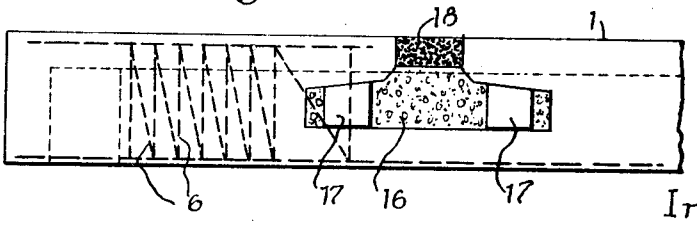


Fig. 6



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Patented Nov. 6, 1928. 1,690,259

UNITED STATES PATENT OFFICE.

JOSEPH B. STRAUSS, OF CHICAGO, ILLINOIS.

PAVEMENT.

Application filed December 30, 1922. Serial No. 609,833

This invention relates to improvements in pavements and has for its object to provide a new and improved concrete pavement which can be easily and cheaply made and placed in position and which will be strong and durable and can be easily, cheaply and quickly repaired. The invention has other objects which are more particularly pointed out in the following description.

Referring now to the drawings:

Fig. 1 is a plan view of a portion of a pavement embodying the invention;

Fig. 2 is a sectional view taken on line 2—2 of Fig. 1;

Fig. 3 is an enlarged top view of one of the slabs used in the pavement showing the reenforcement;

Fig. 4 is an enlarged sectional view taken on line 4—4 of Fig. 1;

Fig. 5 is an enlarged sectional view taken on line 5—5 of Fig. 3;

Fig. 6 is a view of the edge of the slab shown in Fig. 3.

Like numerals refer to like parts throughout the several figures.

As herein shown, the pavement is made up of a series of pre-cast slabs 1 of reenforced concrete. These slabs may be cast at any point desired such as the site of the pavement or at a distance therefrom and transported to the site. Each concrete slab is provided on the under side with four girders 2 which extend along the edges of the slab as shown. Each slab is also provided on the under side with two diagonal girders 3 which extend diagonally across the under part of the slab. The upper surface of the slab is a plane surface and the several girders project below this plane surface on the under side of the slab. The diagonal girders are preferably arch shaped as shown in Fig. 2 and form an arch. The slabs are provided with reenforcing metal which is preferably arranged in three different series, one series 4 extending horizontally in the slab itself, another series 5 extending longitudinally along the girders, and another series 6 extending vertically in the girders. There is preferably provided at opposite corners the metal stirrups 7 which have ends which are embedded in the concrete and connect with the reenforcement 5 in the diagonal girders as clearly shown in Fig. 5. These stirrups are located in recesses 8 in the slabs and these recesses are filled with grout so as to make a smooth surface, the grout being removed so as to expose the stirrups when it is desired to lift the slabs. At the intersections of the various slabs posts 10 are provided. These posts may be made of any suitable material, preferably concrete. Instead of having the slabs rest directly upon the posts, I prefer to provide adjustable caps 11 upon which the corners of the slabs rest, these caps having portions 12 which project down into openings in the posts. These openings are provided with cushion material 13, such for example as sand, which acts as a cushion when the parts are in place. This cushion material also permits a proper adjustment of the various caps so as to properly level the various slabs and adjust them vertically to secure a proper level surface along the upper faces thereof.

The posts 10 are preferably embedded in the ground with their upper ends below the surface.

When the slabs are placed together grout 14 is inserted in the spaces between them, the grout being inserted after the caps have been adjusted to the proper level. The caps are preferably provided with recesses 15 into which the portion of the grout is received, these recesses in the caps acting as key seats for the grout so as to prevent the slabs from being displaced. This is clearly shown in Fig. 4. In other words, it will be seen that when the grout is poured and becomes hardened, the recesses in the caps receive a part of this grout and hence the grout when it hardens prevents movement of the slabs. Some means is preferably provided to act as an interlock between the adjacent slabs and to distribute the load from one to the other. As herein shown, the edges of the slabs are provided with recesses 16. (See Figs. 3 and 6.) Keys 17 are placed in these recesses and connect across from one slab to the other. The recesses are provided with openings 18 which extend to the top of the slab and into which grout may be poured, the grout when it hardens also acting as a load transmitting connection between the slabs. It will thus be seen that by this means the load is transmitted from one slab to another so as to distribute such load and insure its being properly taken care of.

In laying this pavement, the posts are inserted in the ground and then the slabs which have been precast at any desired point are brought to the desired position. The caps 11

are then placed in the openings in the posts, said openings being previously provided with sand or other cushioning material. The caps are then properly levelled and the precast slabs placed in position on them. The keys 17 are placed in position, these keys being inserted in the openings 18 at the top and then moved along the recess 16, such opening recess being filled with grout. The space between the slabs is also filled with grout. The recesses 18 for the stirrup 7 are also filled with grout, thus making a smooth, continuous upper surface for the pavement. It will be noted that the diagonal girders decrease in thickness from their outer ends toward the center of the slab and that they act in connection with the plane surface of the slab to form an arch.

I claim:

1. A paving system comprising a series of precast slabs, each slab having a plane upper surface and a series of girders on the under side thereof, four of said girders extending along the edges of the slab and two girders extending diagonally across the slab, reenforcement in said slab, said reenforcement comprising three systems, one horizontally in the body of the slab, one longitudinally in the girders, and one vertically in the girders, and lifting stirrups at the corners of the slab, said lifting stirrups connected with said reenforcement.

2. A paving system comprising a series of corner posts having recesses at the top, cushion material in said recesses, caps in said recesses and projecting above the posts, and a series of slabs carried by said caps.

3. A paving system comprising a series of corner posts having recesses at the top, cushion material in said recesses, caps in said recesses and projecting above the posts, and a series of slabs carried by said caps, said caps being provided with recesses, a rigid binding material between the slabs and extending into said recesses so as to anchor the slabs to said caps.

4. A paving system comprising a series of precast slabs, posts upon which the corners of said slabs are carried, and shock absorbing material interposed between the slabs and the posts.

5. A paving system comprising a series of posts, a series of precast slabs having their corners supported by said posts and means interposed between the slabs and the posts for adjusting the level of the slabs.

Signed at Chicago, county of Cook and State of Illinois, this 15th day of December, 1922.

JOSEPH B. STRAUSS.