March 17, 1936. D. H. LEVINE 2,033,989

PAD ADAPTED FOR THE CURING OF CONCRETE ROADS AND SIMILAR PURPOSES

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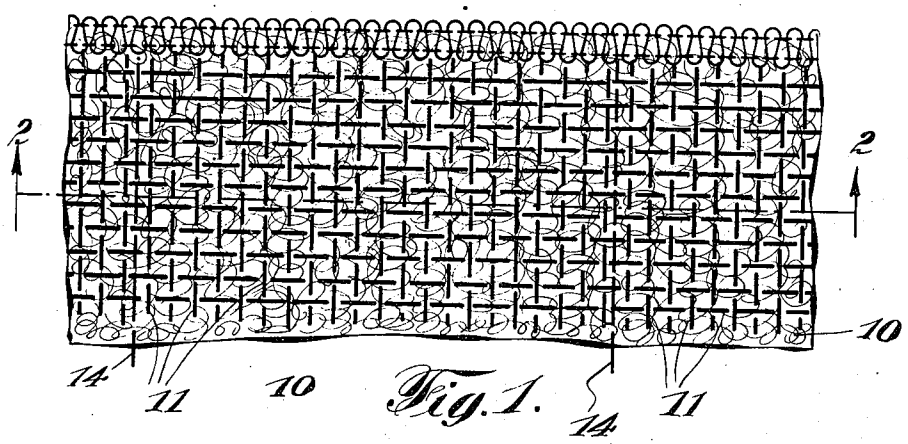


Fig. 1.

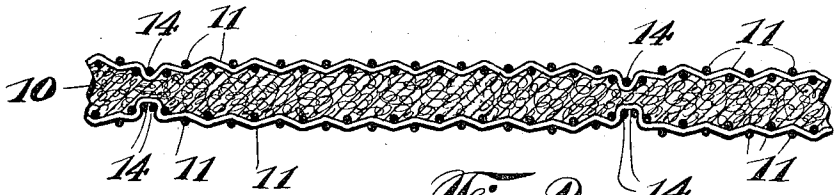


Fig. 2.

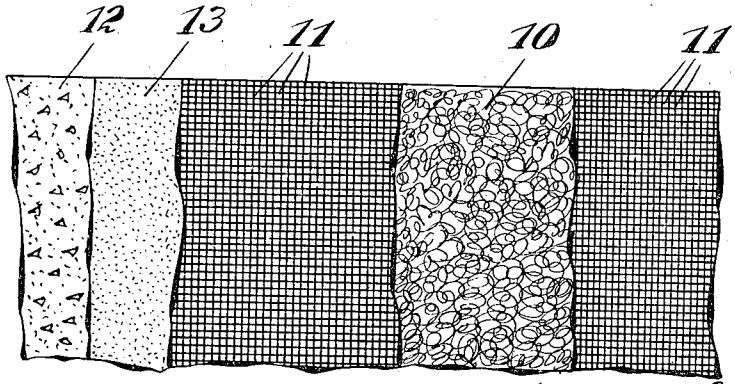


Fig. 3.

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PAD ADAPTED FOR THE CURING OF CONCRETE ROADS AND SIMILAR PURPOSES

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Application April 26, 1935, Serial No. 18,338

2 Claims. (Cl. 154—46)

My invention relates to pads adapted for the curing, or ageing, of composition and aggregate deposits and refers particularly to pads adapted for the curing, or ageing, of deposits suitable for the production of roads, walks, foundations and similar purposes.

My pad is particularly advantageous in the building of composition and aggregate deposits, as for instance concrete, for road constructions and I will refer specifically to such constructions, but not limiting my invention thereto.

In the building of a composition concrete road, the concrete is laid down upon and spread over a suitable foundation material in a wet condition and it must be allowed to cure, or age, under such conditions as will cause an effective binding between the materials of the composition.

Experience has shown that if the concrete is allowed to dry too rapidly, the surface is dried before the interior of the mass, resulting in an uneven binding of the materials of the composition thus producing an uneven, and ineffective material for traffic purposes which is liable to crack and disintegrate.

It is, therefore, necessary to control the rapidity of the evaporation of the water in the concrete mass in such a manner that it will occur upwardly from the interior of the mass, the surface being the last to harden.

The usual practice followed to accomplish this desired result is to cover the surface of the newly laid concrete with burlap, hay or straw and to pour water over this covering from time to time, thus keeping the concrete face in a moistened condition and allowing of the upward evaporation of the water in the mass.

As the covering materials now employed are non-absorbent or only slightly absorbent of water, the greater portion of the applied water runs through the covering and away from the concrete surface and is hence ineffective for the desired result.

In practice it has been found that this covering must have water poured, or sprinkled, upon it every two or three hours for a period of about seven days, and as water is frequently difficult to obtain along the roadway, this process is expensive and is uneconomic as to both time and expense.

My invention overcomes the above mentioned, and other, objectionable features of the present employed methods and presents means whereby more effective and uniform results can be obtained with less water and in a greatly reduced period of time.

I have found that if the surface of the freshly laid concrete be covered with a water-saturated web of loosely matted water-absorbent material, the evaporation of the water of the concrete mass will take place evenly over its entire surfaces, and hence evenly throughout the mass, and that a satisfactory result can usually be obtained within a period of seventy-two hours.

I have further found that usually the water contained in the saturated web is sufficient to accomplish the desired result, although additional water may be applied if required.

I have further found that unfelted materials are more effective than felted materials because of their more porous nature, thus allowing freer evaporation resulting in more rapid curing and I have further found that cotton fibers in a matted condition are particularly suitable for the production of uniform curing in a minimum period of time.

As my device is in the form of a web, or pad, it can be readily and quickly laid upon the surface of the concrete, it overcomes the difficulty incident to the spreading of hay and straw, and as it can be easily removed as a unit construction, there are no loose materials requiring collection and removal.

Further as my device can be employed for repeated operations it presents a very considerable saving in money investment.

My invention consists in the employment of a web, or pad, of loosely matted fibrous water-absorbent material, such as cotton, wool etc., of sufficient strength to permit considerable or sustained handling, and if necessary, it may be covered by attached layers of an easily water permeable fabric which will allow of the unimpeded evaporation of water therethrough.

I prefer that these outer layers be of net-like construction of jute, cotton, wool or other suitable threads.

My web may be of any width and length, but it is of course advisable to make it of the size of the standard road dimensions.

In employing the pad of my invention, I prefer to pass my web, or pad, through a trough of water so as to thoroughly soak it and then spread it upon the freshly laid concrete and experience has shown that the amount of water thus absorbed is usually sufficient for the proper evaporation of the water in the concrete mass and that further water need not be applied.

The dry web or pad, may be spread upon the concrete mass and water sprinkled thereover, but the same uniformity of water absorption can not

be thus obtained as is possible by the first described method.

When the water has evaporated from my device and the concrete mass, my device is rolled, preferably on a wooden rod, passed through a trough of water and applied upon a new surface of concrete.

In the accompanying drawing illustrating one form of a pad of my invention, similar parts are designated by similar numerals.

Figure 1 is a top plan view of one form of the pad of my invention.

Figure 2 is a section through the line 2—2 of Figure 1.

Figure 3 is a top plan view of the pad placed upon a concrete-cement deposit, broken away for clearness of description.

The pad shown in the accompanying drawing consists of a sheet, web, or pad, of loosely matted cotton 10, which is enclosed in an upper and lower net-like material formed by the jute threads 11—11. The jute nettings are attached to each other and to the cotton pad by means of stitchings 14—14.

In Figure 3 showing the application of the pad of Figures 1 and 2, the deposit mass consists of a concrete bed 12, covered by a cement layer 13. The web pad 10, 11 is spread upon the freshly laid concrete cement deposit as shown and the combination allowed to dry by evaporation, or the dry pad is spread upon the deposit and then moistened and allowed to dry by evaporation.

Among the other advantages possessed by the employment of my pad are the protection of the deposit from the influence of the sun and weather, the prevention of the deposit from sudden changes of temperature, and the gradual cooling of the deposit through the matted material.

Experiments have shown that because of the properties of the materials employed in my process, and particularly because of the uniform moisture content of the deposit during curing the flexual strength of the finished product is very considerably increased.

By "composition and aggregate deposits" I mean deposits of compositions and aggregate mixtures of materials which when deposited in a wet condition and allowed to dry will produce hard substances adapted for traffic and other uses.

By "woven netting", I mean any material, the fibers or strands of which are so loosely interwoven as to allow free passage of air and evaporated water therethrough, and which possesses sufficient strength to prevent the dismemberment of the water-porous layer of material during reuse and ordinary handling.

It will thus be seen that I employ an inexpensive device, capable of re-use, for the production of improved and more uniform results at a considerable saving of time and expense over the present employed methods.

I do not limit myself to the particular size, shape or arrangement of parts specifically mentioned, as these are given simply as a means for clearly describing my invention.

What I claim is:—

1. A pad adapted for the curing of concrete roads consisting of an intermediate layer of loosely matted cotton and an outer layer of loosely woven netting of jute fiber on each side of said intermediate layer and spaced stitching for securing said intermediate and outer layers together.

2. A pad adapted for the curing of concrete roads consisting of an intermediate layer of loosely matted cotton and an outer layer of loosely woven netting of cotton fiber on each side of said intermediate layer and spaced stitching for securing said intermediate and outer layers together.

DAVID H. LEVINE.