Oct. 18, 1938. W. M. TOMPKINS 2,133,641

COVERING FOR FRESHLY POURED CONCRETE

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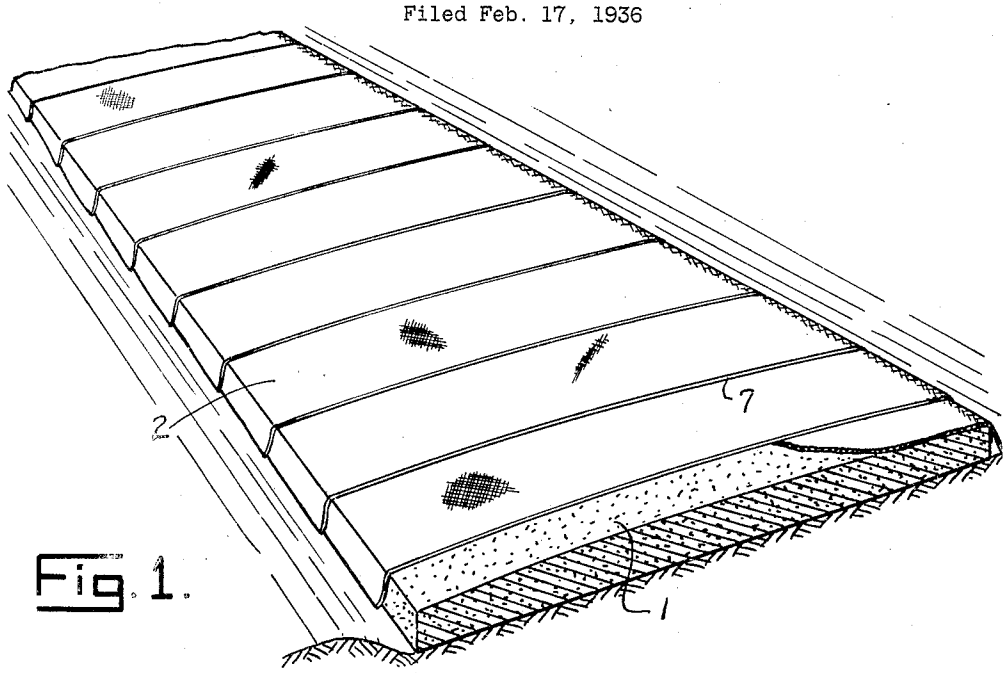


Fig. 1.

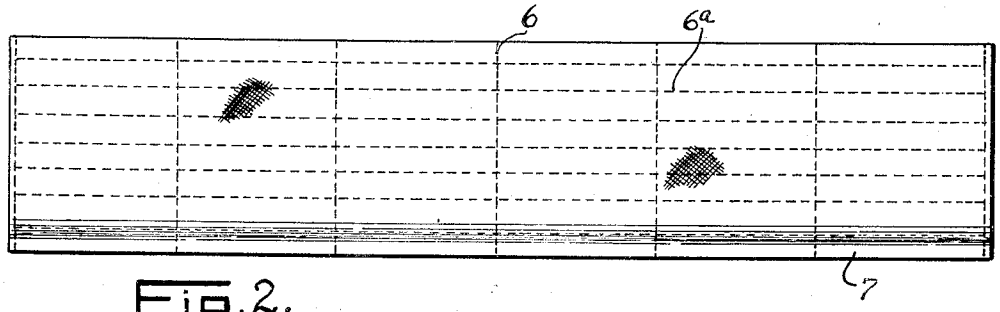


Fig. 2.



Fig. 3.

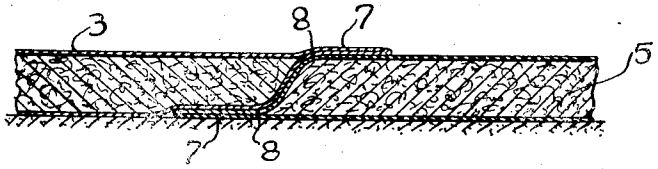


Fig. 4.

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COVERING FOR FRESHLY POURED CONCRETE

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3 Claims. (Cl. 25—1)

The invention relates to the treatment of concrete and particularly to the protection of freshly laid concrete until the same has set. During the process of hardening it is necessary for the proper curing of the concrete that a plentiful supply of moisture be delivered to the paving mixture.

It is now a common procedure to cover the surface of the fresh concrete with materials such as earth, sand, straw, burlap, and other similar materials designed to hold and retain moisture along the surface of the concrete to assist in the proper curing thereof. Chemicals also may be employed and also water is sometimes impounded upon the surface of the concrete and maintained in position during the setting of the materials. The difficulty with most of these methods of holding moisture on the surface of the concrete is that the moisture is not uniformly delivered to the pavement. Winds tend to dry the covering with a lack of uniformity which materially detracts from the curing of the concrete. Further, these methods have costly and objectionable features, as for example a considerable amount of work is necessary to impound water and keep it impounded over the surface of the concrete; in spreading moisture-absorbing and holding chemicals over the surface considerable work is necessary in spreading and sprinkling; in the use of burlap and straw covering it is necessary to continually apply water thereto and furthermore most of these materials usually are undesirable for further use and are discarded after one use, all of which means additional expense.

It is an object of the present invention to overcome the objections to previous methods by providing relatively thick pads of absorbent material which are formed to be placed side by side along the surface of the freshly laid concrete and serve to retain the moisture uniformly along the surface. These pads may have an outer covering of any strong fabric adapted to resist wear and the interior is preferably of some fibrous and absorbent materials which will take up a large supply of moisture and supply it uniformly to the pavement. This fibrous material may include such materials as cotton, cotton linters, and cotton waste, with other fibrous materials therein to increase the strength of the pad. Horse hair, sisal, hemp, or other strengthening materials may be added with the filler or woven in with the outer fabric so as to strengthen the pad and adapt it also to more easily deliver the moisture contained therein to the concrete.

These pads thus formed are laid across the newly poured concrete and are given a thorough soaking with water and when thus soaked will retain the necessary amount of moisture until the concrete has set.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing forming part of this specification, with the understanding however, that the invention is not confined to any strict conformity with the showing of the drawing, but may be changed or modified so long as such changes or modifications mark no material departure from the salient features of the invention.

In the drawing, Fig. 1 is a perspective view illustrating a strip of concrete pavement newly laid with the protecting pads applied thereto.

Fig. 2 is a top plan view of one of the pads illustrating the manner in which the pad is stitched together.

Fig. 3 is a longitudinal section through one of my improved pads.

Fig. 4 is an enlarged detail showing the manner of overlapping the adjacent longitudinal edges of the absorbent pads.

With reference to the drawing I have shown in Fig. 1 a strip of pavement 1 consisting of freshly poured concrete. Applied to this strip of pavement 1 is a protecting covering made up of a plurality of pads 2. As will be seen in the drawing, these pads are laid transversely across the pavement and overlap the edges of the pavement so as to fall along the edge thereof and retain moisture in the concrete.

Referring to Figs. 2 and 3, the construction of these pads will be more clearly understood. I provide an outer casing 3, which may be of any strong and wear-resisting fabric. This casing is shown as being made up of an upper layer and a lower layer of fabric joined together along their margins and stitched, as shown at 4. This casing is filled with a layer 5 of absorbent material of the character previously noted, which is preferably cotton in various forms, such as linters or waste, and with this material I prefer to employ a quantity of coarser fiber such as sisal, hemp, horse hair, or some stronger material tending to hold the mat in shape.

Furthermore, this coarser material tends to assist in delivering the moisture to the concrete. In the case of cotton filler, the capillary attraction between adjacent fibers of the lint is so great that water does not easily drip therefrom. By adding these other coarser materials the flow of moisture from the pad to the pavement may be controlled and the dripping quali-

ties increased in proportion to the amount of coarser material. The amount of coarse material employed along with the cotton will be controlled by the particular desires of the operator.

When the casing has been filled with a smooth layer of the filling material, said material will be fixed in place to hold the same in a uniform layer by transverse stitching such as is shown at **6** in the drawing. The pad will also be stitched longitudinally as shown at **6a** and if desired the pad may be tufted rather than stitched.

Along the adjacent margins of the strips there may be an overlapping flap on one edge of each pad and on the opposite edge is a similar flap or strip which underlies the edge of the adjacent pad.

With reference particularly to Fig. 4, it will be seen that the material of the casing **3** is extended beyond the edge of the casing proper and folded back to form the flap, as indicated at **7**. This flap is stitched longitudinally as shown at **8**. The view shown in Fig. 4 shows the manner of overlapping of the flaps upon adjacent pads. This feature is of some importance in maintaining a uniform delivery of moisture from the pad to the pavement throughout the full length of the newly laid concrete. It will be obvious that the moisture from one pad will be adapted to pass to the absorbent interior of the adjacent pad due to capillary attraction and there will be no gap between adjacent pads wherein the drying of the pavement due to contact with the air will develop.

In the use of these pads they will be placed side by side, as shown in Fig. 1, with the flaps **7** on one pad overlying the top of the adjacent pad at one edge and lying beneath the adjacent pad at the opposite edge. When thus placed in position they will be thoroughly saturated with water and due to their structure they will be enabled to take up a large amount of water which will be delivered gradually to the concrete upon which they are placed.

Ordinarily, where the climate is not too dry one wetting of the pads will be sufficient for a thorough curing of the cement. Where the climate is hot and dry it may be necessary to wet the pads a second time. It has been found, however, that they retain the moisture much more uniformly and for longer periods of time than does the old forms of covering such as earth, straw, and the like. The pavement when thoroughly set will be more uniform in quality. Due to the retaining of the moisture in contact with the pavement a proper chemical reaction of the materials of the pavement in drying will be secured and the setting of the concrete will be materially more rapid than is the case with other forms of covering. While ten days may be required with an earth covering I find that pavement will thoroughly set within a period of seventy-two hours with this form of covering. Furthermore, the pavement is left in a cleaner condition so that washing is entirely unnecessary. The pads form a uniform covering which also keeps the concrete of uniform temperature during the drying so that the operator is assured of a properly cured concrete which is uniform throughout.

When the pads have been used in one application upon a strip of roadway they may be folded and packed and employed on other jobs. The covering is easily applied and makes it possible for the operator to obtain a uniform setting of the cement with a minimum amount of labor.

What is claimed as new is:

1. Covering means for fresh concrete comprising an elongated flat body consisting of a casing formed of two sheets of absorbent material, a filling material of an absorbent character within the casing, and means connecting the sheets of the casing to maintain the body in a flat condition, said body having a portion of one side, along each longitudinal edge, stitched flat against the opposite side to provide a flange-like extension along each longitudinal edge for coaction with the extension of an adjacent body to facilitate the close positioning of a number of bodies over the concrete.

2. A covering for fresh concrete comprising flattened pad having an outer casing of fabric material, an inner filling in said casing of fibrous absorbent material, flaps formed on said casing and extending laterally therefrom along their opposite margins to interengage with adjacent pads, the flap on one margin formed to lie beneath the adjacent pad, and the flap on the opposite side adapted to overlie the upper edge of the adjacent pad on that side.

3. A covering for fresh concrete comprising an elongated pad formed to be placed with other like pads transversely across a strip of paving, said pad comprising a casing made up of opposite strips of coarse fabric secured together at their ends and along their sides, a filler of fibrous cotton material having mixed therewith a small proportion of coarse fiber, means to retain said filling uniformly in position and flaps of fabric material along the sides of said casing to engage with adjacent pads and form a seal therealong.

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