Oct. 1, 1946. J. W. SMITH 2,408,585

METHOD OF LAYING, FORMING, AND INTERCONNECTING CONCRETE BLOCKS

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Fig. 1.

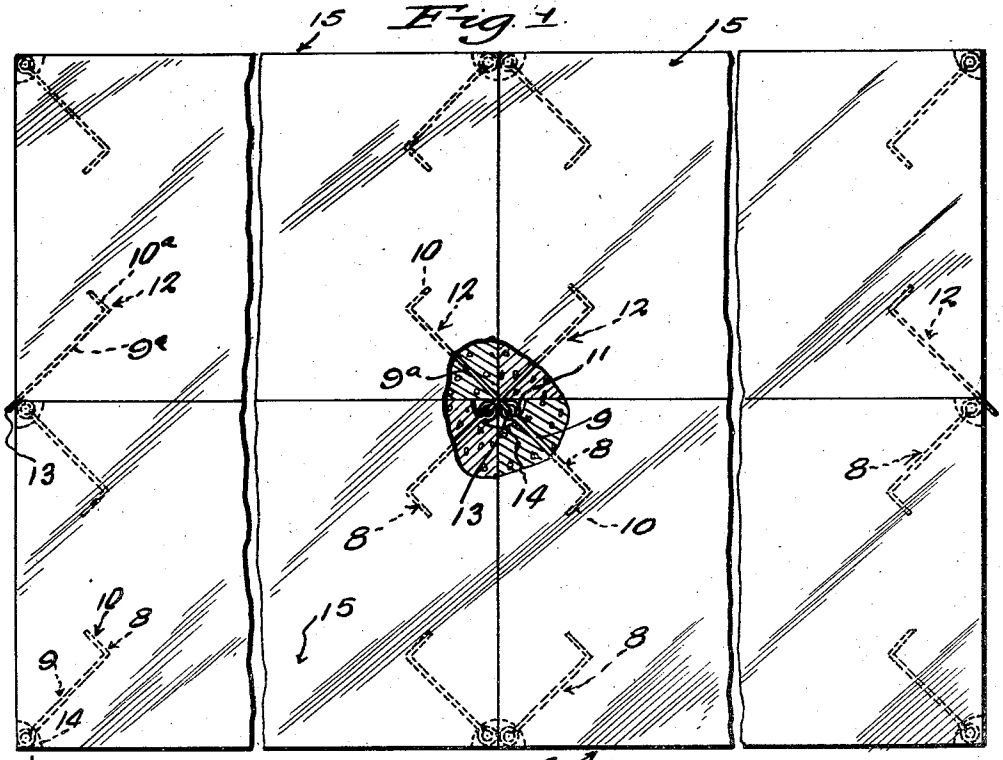


Fig. 2.

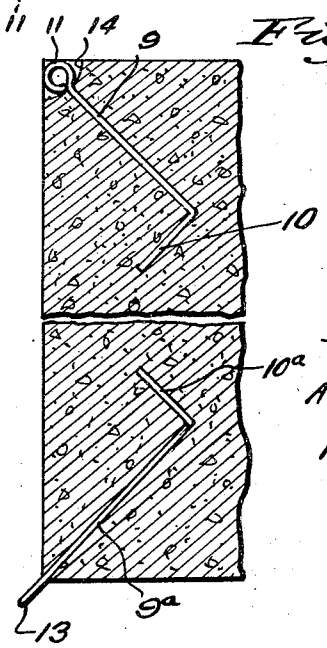


Fig. 7.

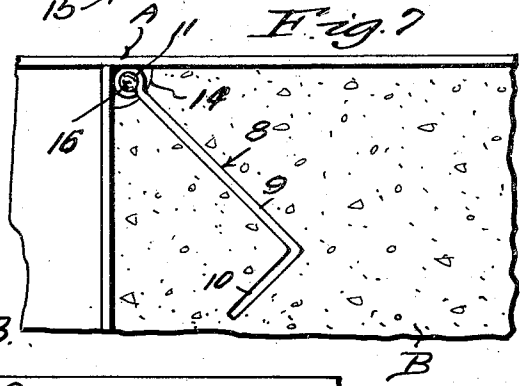
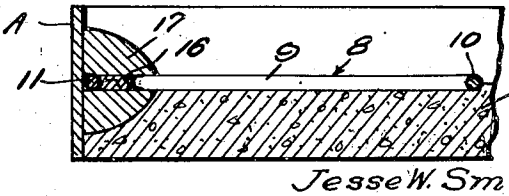


Fig. 8.



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Fig. 3.

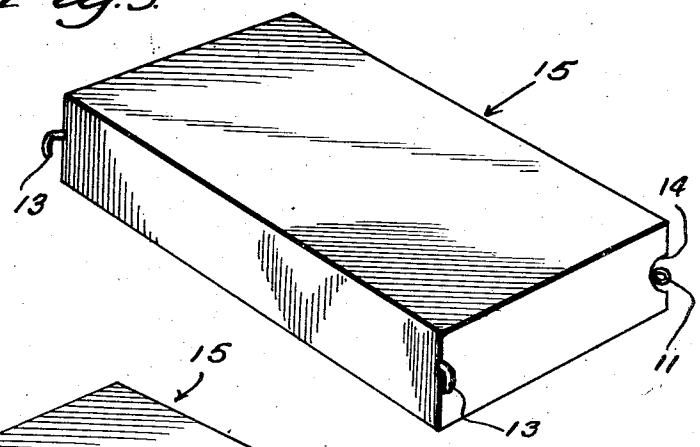
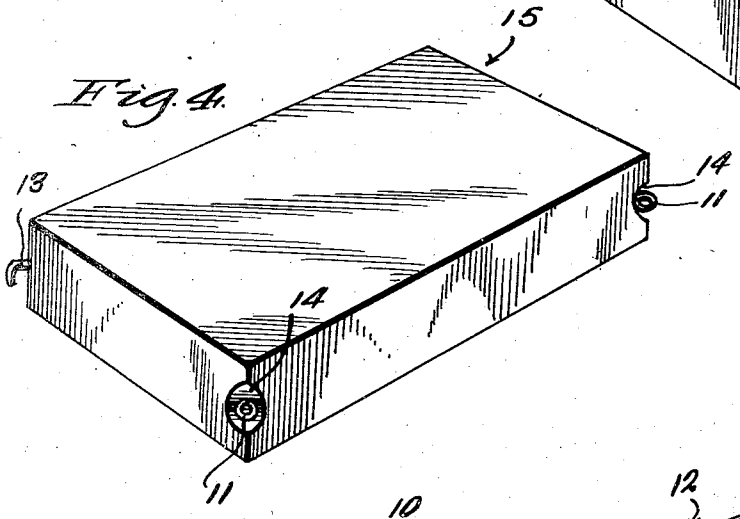


Fig. 4.



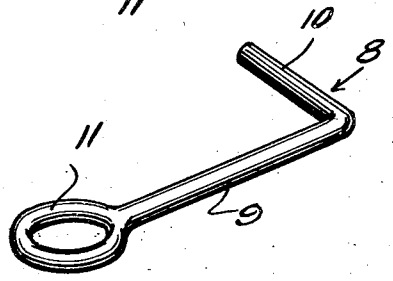


Fig. 5.

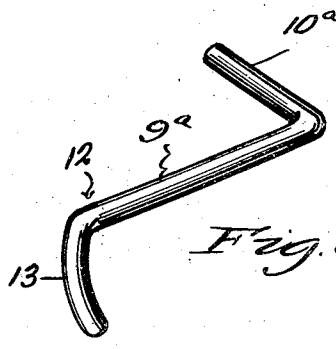


Fig. 6.

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METHOD OF LAYING, FORMING, AND INTERCONNECTING CONCRETE BLOCKS

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Application December 29, 1944, Serial No. 570,443

2 Claims. (Cl. 94—22)

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This invention relates to what is believed to be a novel method of laying, forming and then interconnecting, through the medium of special tie elements, so-called concrete blocks such as are used in the construction of present day highways.

It is a matter of common knowledge that concrete blocks employed in highway and similar construction work range about seven inches in thickness, nine feet in width, and vary in length anywhere up to sixty feet. These blocks are poured in suitable forms on an appropriately prepared sub-grade. After a highway has been constructed, the blocks, after a length of a year or more, frequently shift and get out of level with one another. This is due to sinking, or heaving from frost and other detrimental conditions. In carrying out the present invention, it is my aim to avoid the presence of large cracks caused by parting of the cement blocks inasmuch as these types of faulty surfaces are dangerous and a constant source of legal annoyances to the state authorities.

More particularly, the present invention contemplates the provision of concrete blocks provided at their inner coacting corners, that is, for each four blocks, with interconnecting ties. By preference, the ties are in the form of hooks and eyes, the eyes being positioned and functioning as keepers for the hooks, whereby to "hook and eye" the blocks together into an effective assemblage which, while allowing for expansion and contraction, nevertheless serves to promote a reliable, satisfactory and substantially faultless road surface in so far as the joints are concerned.

An outstanding phase of the invention is in reference to the manner in which the hook-and-eye elements are embedded centrally in the "green" concrete as it is poured into the conventional forms, the construction and arrangement of the tying elements being such as to cause the eyes to occupy positions adjacent to, but within the borders of the perimeters of the blocks, thus permitting regular pouring forms to be utilized without hindrance.

Other features and advantages will become more readily apparent from the following description and the accompanying illustrative drawings.

In the drawings, wherein like numerals are employed to designate like parts throughout the same:

Figure 1 is a top plan view showing a group

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of four blocks in a highway construction, these being tied together and finished, so to speak.

Figure 2 is a top plan view of one of the blocks with portions broken away and shown in section to better bring out the construction and arrangement of a pair of hooks and eyes.

Figure 3 is a perspective view observing one longitudinal edge of the block.

Figure 4 is a perspective view from a different angle, this to bring out the arrangement and positioning of the tie elements.

Figure 5 is a perspective view of the female eye-type tie.

Figure 6 is a perspective view of the male-type tie.

Figure 7 is a fragmentary top view showing the conventional pouring form and showing one of the half-laid "green" blocks, one of the female tie elements set in place.

Figure 8 is an edge view which serves to bring out the location of the temporary wooden plug in the eye, and the wooden surrounding core for forming the eye accommodating cavity or recess.

It seems logical, perhaps, to describe first the two types of ties which are used. The female-type is shown in Figure 5 and denoted by the numeral 8. It comprises a shank 9 of appropriate length having a lateral bend 10 at one end, this to be embedded in the concrete and an eye 11 at the opposite end.

The male tie element is denoted (see Fig. 6) by the numeral 12. This comprises a shank 9a having a lateral anchoring bend 10a, these parts corresponding to the parts 9 and 10 in the eye fastener in Figure 5. The shank 9a in this instance is provided with a hook 13 whose cross-sectional diameter will be proportioned in relation to the diameter of the hole in the eye 11 to permit two parts 13 and 11 to connect while allowing the desired degree of relative freedom of movements.

In practice, when the road is laid, I use the female ties first. Each tie is to be placed at the extreme corner of the block when approximately one-half B of the cement has been poured (see Fig. 7), and after it is in position and temporarily set, the remainder of the form is filled to the top of the form-rails A.

When the cement is hard and the form or rail is removed, the eye is purposely exposed. It is advisable to place a wooden plug 16 in the hole in the eye (Figures 7 and 8) to keep it from clogging with concrete. What is more, it is desirable to place a core of wood or the like 17 around the eye and shank to provide a recess

14 to accommodate the eye. These recesses permit the eyes to range within the border or perimeter surfaces of the blocks. Experience has shown that in some instances the shank 10 can be in a plane with the eye or can be at right angles thereto, depending on which ever mode of assemblage is found to be the most satisfactory from a standpoint of securely anchoring the eye in place.

When the first block is laid, there should be a female tie laid in the outside corner of the same block, this in anticipation of future widening of the road, thus taking care of future needs. This is brought out in the assemblage and arrangement seen in Figure 1, wherein the outside or marginal ties are not connected together, but are there for the addition of extra marginal or shoulder blocks.

When the first strip of road is laid and the cement is set and then the rail-forms removed, the cores and plugs are also removed in readiness for the laying of the next block, this with the male ties or hooks, the latter being embedded in the concrete layers during the process of pouring, as already described. Under this arrangement, I effect a considerable saving of time and money in that it is not necessary to employ special forms.

Assuming that the series of four blocks have been laid, as seen for example diagrammatically in Figure 1, the four ties at the coacting corners actually form an X-shaped assemblage.

A careful consideration of the foregoing description in conjunction with the invention as illustrated in the drawings will enable the reader to obtain a clear understanding and impression of

the alleged features of merit and novelty sufficient to clarify the construction of the invention as hereinafter claimed.

Minor changes in shape, size, materials and rearrangement of parts may be resorted to in actual practice so long as no departure is made from the invention as claimed.

I claim:

1. A method of constructing a concrete highway comprising placing and setting conventional forms in the usual manner on a sub-grade, pouring the lower half of a concrete block, placing a metal tie diagonally on the corner area of the top surface of said lower half, the outer end of said tie having an eye, placing a removable plug in the eye, placing a core in the concrete around the plug and eye, and then pouring the remainder forming the upper half of said block within the limits of the form and embedding said tie.

2. A method of constructing a concrete highway comprising the steps of placing and setting conventional forms in the usual manner on a sub-grade, pouring first the lower half of a concrete block, placing a metal tie diagonally on a corner area of the top surface of said lower half, the outer end of said tie having an eye, placing a removable plug in the eye, placing a core in the concrete around the plug and eye, then pouring the remainder forming the upper half of the block within the limits of the form and embedding the tie, removing said core and said plug at a predetermined concrete hardening stage to thus provide a corner cavity and to expose the then open eye within the confines of said cavity.

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