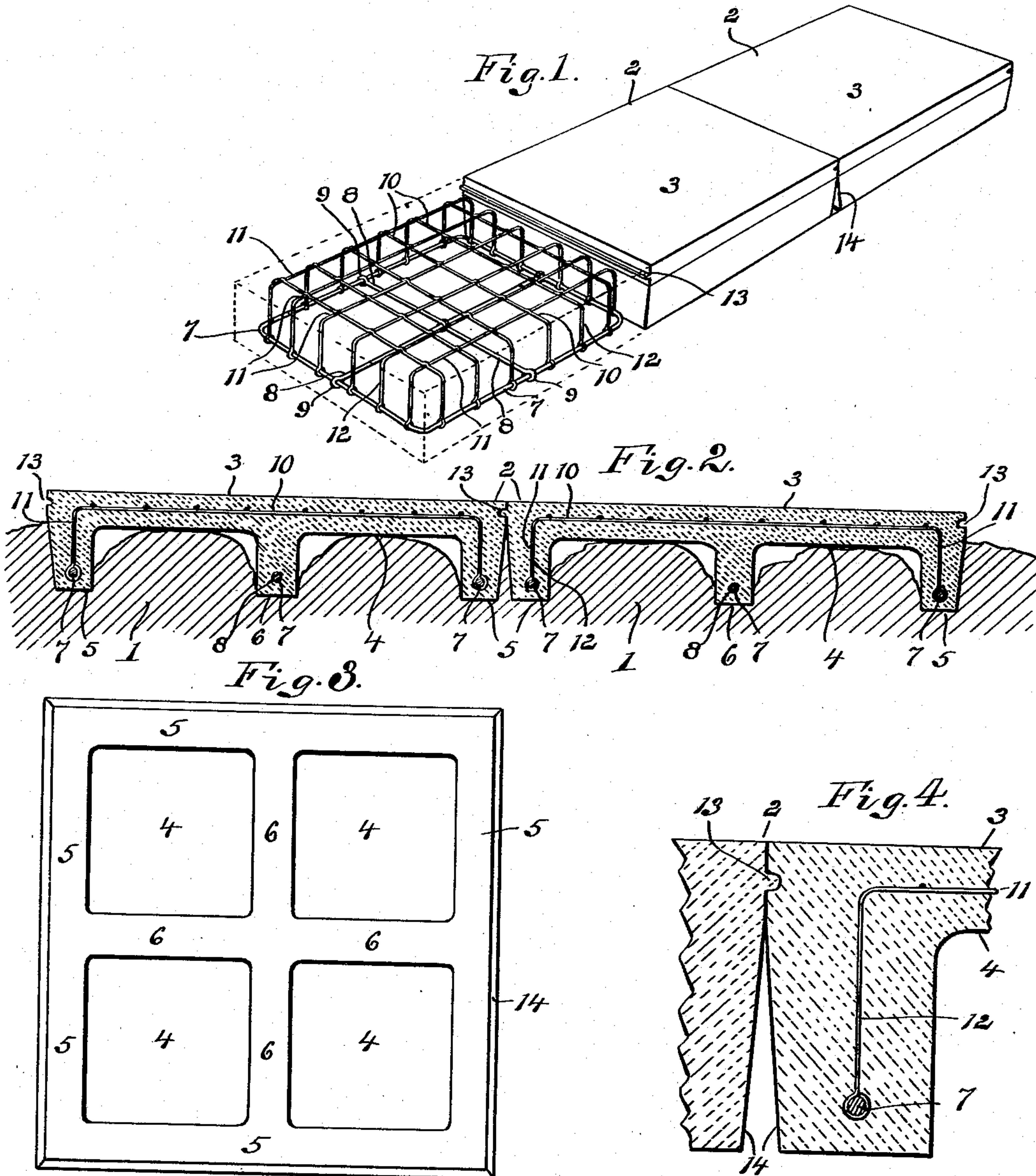


No. 881,700.

PATENTED MAR. 10, 1908.

F. J. MILLER.
REINFORCED CONCRETE SIDEWALK.
APPLICATION FILED NOV. 16, 1907.



WITNESSES:

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UNITED STATES PATENT OFFICE

FRANCIS J. MILLER, OF DETROIT, MICHIGAN.

REINFORCED CONCRETE SIDEWALK.

No. 881,700.

Specification of Letters Patent.

Patented March 10, 1908.

Application filed November 16, 1907. Serial No. 402,434.

To all whom it may concern:

Be it known that I, FRANCIS J. MILLER, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Reinforced Concrete Sidewalks, of which the following is a specification, reference being had therein to the accompanying drawings.

10 In constructing cement or concrete walks in the usual manner, a bed is formed by digging out the surface clay, loam or packed dirt for the width of the walk, and filling in with sand, gravel or like suitable material, 15 on which the cement or concrete is directly applied and molded in place. The trench thus filled with earth porous in comparison with the surrounding dirt, forms a natural drain which takes up water running off the 20 edges of the walk and from the adjacent surface. When this freezes, an upheaval and fracture of the cement or concrete coating is inevitable owing to the intimate contact of the latter with the bed surface.

25 This invention relates to a reinforced concrete or cement walk construction whereby the difficulties above mentioned are obviated, and certain other advantages in economy and distribution of material are obtained.

30 The invention consists in the matters hereinafter set forth, and more particularly pointed out in the appended claims.

Referring to the drawings, Figure 1 is a plan view partially broken away of a section of sidewalk embodying features of the invention. Fig. 2 is a view in section of the walk. Fig. 3 is a view of the bottom of a slab. Fig. 4 is a view in detail of a slab joint.

40 As herein illustrated, the sidewalk consists of a suitable bed 1 of gravel, sand, cinders or like material which may be readily leveled to grade, on which are a series of rectangular slabs. The latter each consists of a thin 45 sheet 2 of concrete or like cementitious material having a flat or slightly crowned face 3 and flat underside 4, with dependent marginal flanges 5 connected by centrally disposed cross ribs 6 all integrally united or 50 molded in a single piece.

A metal strip or rod, preferably cylindrical, bent on itself with its ends welded to form a frame 7, is embedded in the lower portion of the flanges 5, and cross rods 8 whose 55 ends 9 are attached to the frame 7, are inclosed in the lower part of the cross-ribs. A

series of parallel spaced wires 10 crossed by a set of separated wires 11 to which they are preferably joined at their intersections, as by soldering, welding or wrapping, are embedded in the sheet 2 and the end portions 12 of both sets are bent and extended down the flanges, and are preferably attached at their ends to the frame 7. The adjacent margins of the slabs are provided near their 65 tops with interlocking tongues and grooves 13, and below the grooves are slightly cut away to present beveled faces 14, so that if the slabs expand longitudinally, they may uptilt or lift slightly without being forced 70 apart at the upper edges.

The slabs are formed in any suitable mold and then placed on the leveled bed which need not extend to any depth below the flanges. The sand is readily worked up 75 under each slab into the pockets between the flanges and ribs, the divisions formed by the ribs being sufficiently narrow so that the ballast is easily tamped into them, the width of the ordinary walk precluding such action if 80 the slab were plain. The ribs and flanges retain the sand against displacement, and it may or may not form a bearing for the body of the slab, as the dependent members give ample footing. 85

One advantage is the economic distribution of the material which is amply reinforced to prevent fracture. Another feature is the construction of the joints which allow longitudinal expansion without the lifting of 90 the slab margins by each other.

The chief advantage is the prevention by the dependent flanges of the entrance of water into the upper part of the bed, and the fact that the bed is not in intimate contact 95 with the under side of each slab throughout its entire extent, thus preventing fracture from upheaval by frost, as the upper dry portion of the bed acts as a buffer between the lower water-soaked portion and the walk. 100 Furthermore, the bed need not extend to any great distance below the flanges, and the latter act as retaining walls to keep the upper part, which prevents sidewise movement of the slabs, from working out. 105

What I claim as my invention is:—

1. A sidewalk comprising a bed of ballast and a series of slabs thereon each consisting of a single rectangular sheet of the full width of the walk, with depending marginal flanges 110 connected at their centers by a pair of intersecting cross-ribs, all molded integrally of

cementitious material, a one piece rectangular metal frame embedded in the flanges and cross-rods embedded in the ribs connected at their intersection with each other and at their extremities with the frame, and a square mesh network of wire embedded in the body of the slab above the plane of the frame with the end portions of the wires extending down in the flanges to the frames, the upper portions of the contiguous margins of the slabs being tongued and grooved together and the lower portions being slightly beveled inwardly.

2. In a sidewalk, the combination with a bed of ballast of a series of slabs resting thereon interlocked at their margins, each slab comprising a rectangular metal one

piece rim connected by a square mesh inverted basket work of wire and by a pair of intersecting cross wires, all inclosed in an embedment of cementitious material presenting a smooth upper face and a recessed underside adapted to retain the ballast, the transverse mating margins being tongued and grooved near their upper portions and being slightly beveled inwardly below the interlocking portions.

In testimony whereof I affix my signature in presence of two witnesses.

FRANCIS J. MILLER.

Witnesses:

C. R. STICKNEY,
OTTO F. BARTHEL.