No. 650,143. Patented May 22, 1900.

# T. BAILEY.

## PAVEMENT.

(Application filed May 24, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

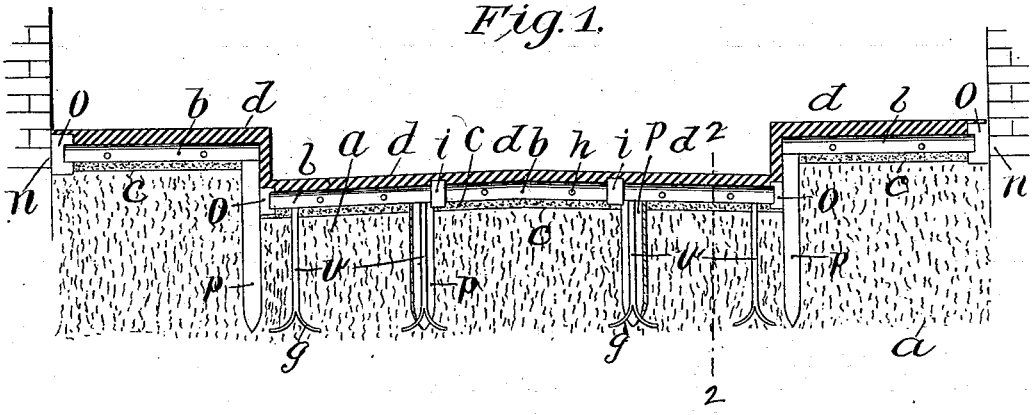



Fig. 2.

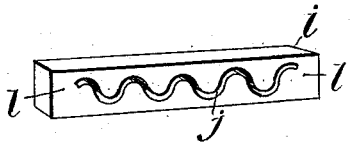



Fig. 3.

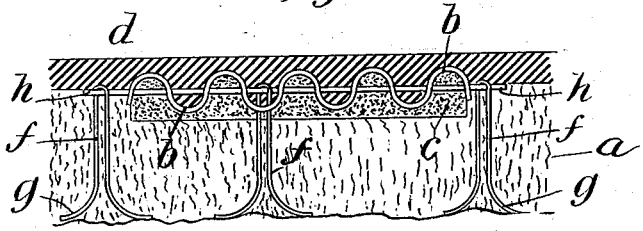
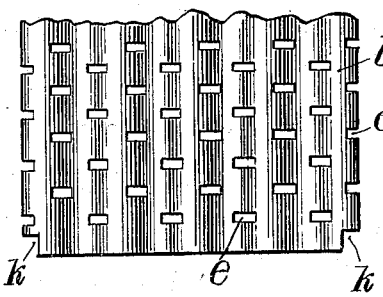



Fig. 4.

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No. 650,143. Patented May 22, 1900.

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PAVEMENT.

(Application filed May 24, 1899.)

(No Model.) 2 Sheets—Sheet 2.

Fig. 5.

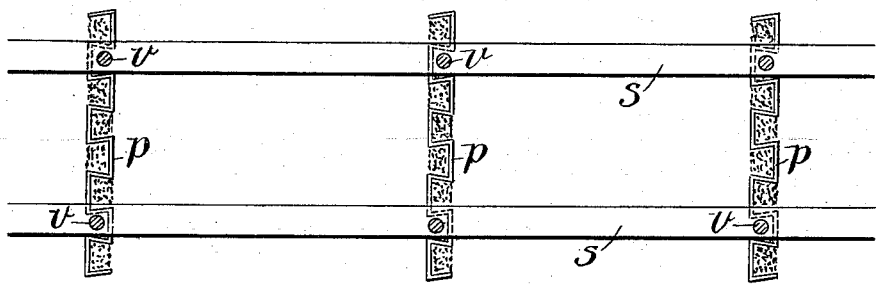



Fig. 6.

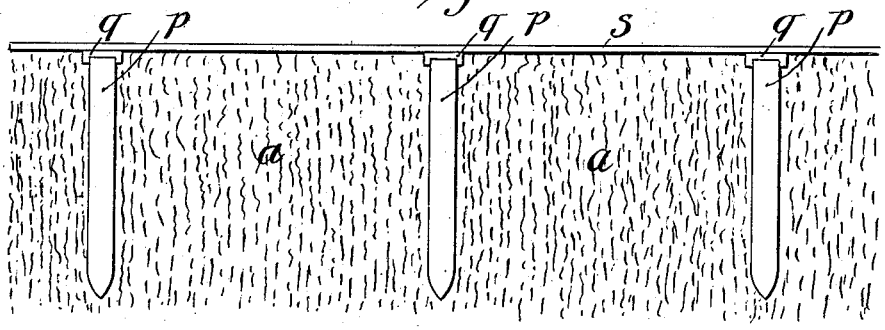
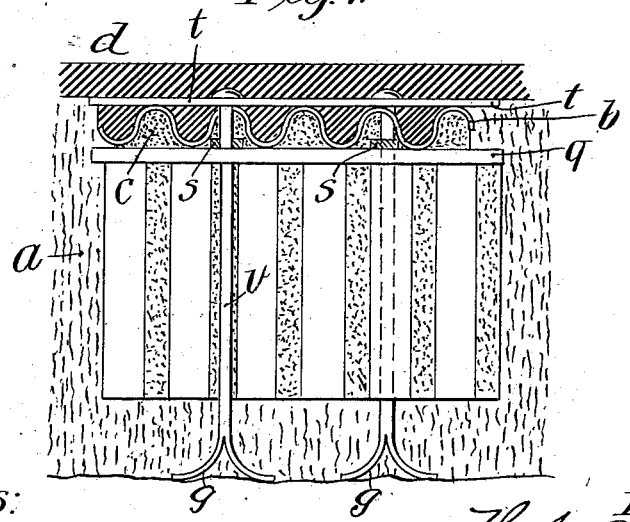



Fig. 7.

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# UNITED STATES PATENT OFFICE.

THOMAS BAILEY, OF NEW YORK, N. Y.

## PAVEMENT.

SPECIFICATION forming part of Letters Patent No. 650,143, dated May 22, 1900.

Application filed May 24, 1899. Serial No. 718,052. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS BAILEY, a citizen of the United States of America, and a resident of New York city, county and State of New York, have invented certain new and useful Improvements in Pavements, of which the following is a specification.

My invention relates to pavements of roadways, sidewalks, courts, floors, &c.; and it consists of sheet metal in various forms combined with cement, concrete, and the like, so as to form waterproof surfaces adapted to effectually exclude water from the foundation, and thereby insure great durability and being simpler and cheaper to construct, as hereinafter described, reference being made to the accompanying drawings, in which—

Figure 1 is a transverse section of a roadway and sidewalks constructed in accordance with my invention. Fig. 2 is a perspective view of a coupler for the meeting ends of corrugated sheets and for a cap to the ends of the sheets abutting against the curbs or the building-walls. Fig. 3 is a detail in section of the roadway or sidewalk, as on line 2 2 of Fig. 1, enlarged. Fig. 4 is a plan view of part of a corrugated sheet of metal representing one form of the sheet-metal element of my improved pavement construction. Fig. 5 is a plan view of piers and tie-bars to be used when the pavement is to be laid on soft ground. Fig. 6 is a side elevation of the devices of Fig. 5 as placed on the surfaces of the ground; and Fig. 7 is a section of the complete pavement of the character indicated in Figs. 5 and 6, the section being transversely of the roadway.

Where the ground *a* is sufficiently hard and solid I lay metallic sheets *b*, preferably corrugated directly on the surface, suitably bedded in cement, concrete, asphalt, or other material *c*, adapted to make a substantial bed, and cover the sheets thus laid with an upper coating *d* of like material, also preferably using sheets perforated, as *e*, Fig. 4, through which perforations the cement layers of the two sides will be tied more substantially. I may also use woven-wire sheets. When corrugated sheets are used, as will generally be the case, the cement layer *c* for the under side may be applied to the sheets temporarily lying so as to receive the cement on the upper side for effectually packing it into the grooves of the corrugations, and then when properly set the sheets may be turned over and placed in position with the cemented side down. As a means of anchoring the pavement more effectually the sheets may be spiked down by staples *f* driven to rock or hard-pan and clenched thereon, as indicated at *g*, to hold against heaving by frost in case water should happen to get under the pavement. The staples may be driven through holes in the sheets and over rods *h*, inserted transversely through the bends of the sheets. The sheets will preferably be corrugated lengthwise and will also preferably be laid crosswise of the sidewalks and roadways, and where they are not long enough to reach from side to side, as in the roadway of Fig. 1, they will be spliced or coupled in any approved way. The way I prefer is by the use of coupling-bars *i*, of metal, having a sinuous perforation *j*, adapted to receive the ends of the two sheets, one overlapping the other, so that they will be closely confined to each other, and when embedded in the cement make a practically tight joint. The corners of the sheets will be notched, as at *k*, Fig. 4, to limit the width of the ends to the practicable lengths of the perforations *j*, which are necessarily shorter than the full width of the sheets for reserving the solid end portions *l*, necessary to the bond of union between the two parts otherwise separated by the perforations.

Where the ends of the sheets abut against the curbs or walks, as *n*, caps *o* will be used, of similar character as the couplers, but instead of being perforated a groove or slot only will be formed for reception of the end of the sheet. In this case the groove or slot may continue to the ends of the cap, and the sheets will not be notched at *k*. These caps will add materially to the prevention of water leaking into the ground below the pavement.

For the curbs I employ either flat or corrugated sheet-metal piers *p*, driven into the ground, being when corrugated placed with the corrugations upright and driven a suitable depth, according to the nature of the ground, for stability, with the outer ends of the sidewalk-sheets resting on the upper ends of the piers. Such piers may be also placed

at intervals under the sidewalk or roadway, where the nature of the ground may require them, for more substantial support of the pavement, either with caps, as *q*, of channel-iron or not, and with stringers *s*, extending along them from one to another for tying the piers together and on which to lay the sheets, as in Fig. 7, and with cross-bars *t*, if desired; also with split pointed anchor-rods *v*, as shown. Instead of the staples of Fig. 3 spikes or anchor-rods with hook-heads may be used. What vacant spaces may remain in the grooves and elsewhere along the sides of the piers when driven in the ground will be filled with thinly-mixed cement poured in from the top before the caps *q* are put on.

The corrugated sheets may of course be placed lengthwise along the streets and sidewalks and the piers placed crosswise, if desired.

Where rock or hard-pan lies within suitable distance to be reached by the piers or the anchor staples or rods, the distance may be ascertained by a sounding-rod, and the piers and rods may be provided in suitable lengths to reach and rest on them.

It is obvious that where it is not important to make the pavement waterproof woven-wire sheets may be used instead of perforated plates, these being in all respects the equivalent of the perforated plates, and where I employ the term "metal sheets" in the claims I include woven-wire sheets.

What I claim as my invention is—

1. In pavement, metal sheets laid in cement, asphalt or concrete bedding and covered with the same, and spliced at the ends of the sheets with perforated coupling-bars.

2. In pavement, metal sheets laid in cement, asphalt or concrete bedding and covered with the same, and having caps of the ends of the sheets abutting against a wall or curb.

3. In pavement, metal sheets laid on sheet-metal piers driven in the ground, said sheets bedded in cement, asphalt or concrete and covered with the same.

4. In pavement, metal sheets laid on sheet-metal piers driven in the ground and bedded in cement, asphalt or concrete and covered with the same and having anchor-rods clenched on rock or hard-pan.

5. In pavement, metal sheets laid on sheet-metal piers driven in the ground and coupled with stringers, said sheets bedded in cement, asphalt or concrete and covered with the same.

6. In pavement, metal sheets laid on sheet-metal piers driven in the ground, and coupled with stringers, said sheets bedded in cement, asphalt or concrete and covered with the same, and having anchor-rods clenched on rock or hard-pan.

7. In pavement, corrugated metal sheets bedded in cement, asphalt or concrete, and covered with the same, and stiffened with rods inserted through the bends of the corrugations.

8. In pavement, corrugated metal sheets laid on sheet-metal piers driven in the ground, also bedded in cement, asphalt or concrete and covered with the same and stiffened with rods inserted through the bends of the corrugations.

9. In pavement, corrugated metal sheets laid on sheet-metal piers driven in the ground, also bedded in cement, asphalt or concrete, and covered with the same; also stiffened with rods inserted through the bends of the corrugations, and anchored with rods clenched on rock or hard-pan.

10. In street-pavement, the curb consisting of sheet-metal piers driven in the ground with the roadway-pavement abutting against the sides of the piers and the sidewalk-pavement supported at the edge on the piers, said piers covered with cement, asphalt or concrete on the outside.

11. In street-pavement, the curb consisting of sheet-metal piers driven in the ground, and the roadway-pavement consisting of metal sheets bedded in cement, asphalt or concrete and covered with the same and abutting against the sides of the piers, said piers covered with the cement, asphalt or concrete on the outside.

12. In street-pavement, the curb consisting of sheet-metal piers driven in the ground, and the sidewalk-pavement consisting of metal sheets bedded in cement, asphalt or concrete and covered with the same and resting at the outer edge on the piers.

13. In street-pavement, the curb consisting of corrugated metal piers driven in the ground and the roadway-pavement consisting of corrugated metal sheets bedded in cement, asphalt or concrete and covered with the same and abutting against the sides of the piers, said piers covered with cement, asphalt or concrete on the outside.

14. In street-pavement, the curb consisting of corrugated sheet-metal piers driven in the ground, and the sidewalk-pavement consisting of corrugated metal sheets bedded in cement, asphalt or concrete and covered with the same and resting at the outer edge on the piers, said piers covered with cement, asphalt or concrete on the outside.

Signed by me at New York, N. Y., this 10th day of May, 1899.

THOMAS BAILEY.

Witnesses:
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C. SEDGWICK.