

W. Russell.

Wood Pavement.

N^o 1,594.

Patented May 8, 1840.

Fig. 1.

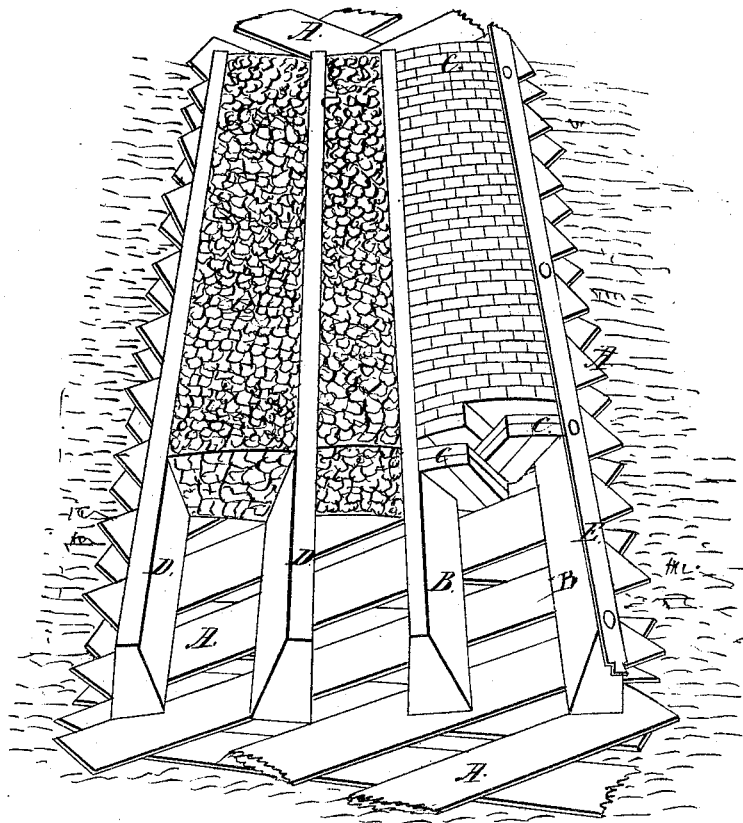
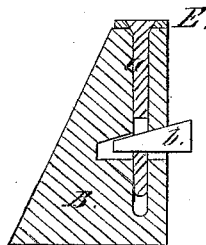


Fig. 2.



UNITED STATES PATENT OFFICE.

WILLIAM RUSSELL, OF NEW YORK, N. Y.

MANNER OF CONSTRUCTING RAILROADS.

Specification of Letters Patent No. 1,594, dated May 8, 1840.

To all whom it may concern:

Be it known that I, WILLIAM RUSSELL, of the city of New York, in the State of New York, have invented an Improvement in the
5 Manner of Constructing Railroads, and which improvement is in part applicable to common roads and to streets; and I do hereby declare that the following is a full and exact description thereof.

10 My invention consists in a new and improved manner of preparing and laying wooden blocks, either on the horse tracks for rail roads or on common roads and streets; and also in a new and improved mode of
15 preparing the string pieces for railways, and of bolting or confining the rails thereon.

The track upon which horses are to travel upon railroads, and upon which horses and carriages are to pass on common roads and
20 streets, I pave with blocks of wood, but these blocks I form, arrange, and sustain in a new and peculiar manner. Along the road, whether it be a railroad, common road, or street, I lay string pieces in such manner
25 as to form and constitute an abutment on each side of the portion which is to be paved with wood, and these, as well as the wood pavement, I lay upon hemlock or other suitable plank placed in double thicknesses
30 crossing each other diagonally, after having first duly graded and prepared the ground for their reception. When a railway is to be formed I lay plate rails along the string piece, and these plate rails I confine
35 down by means of bolts and keys, formed and applied as hereinafter described.

Figure 1, in the accompanying drawing, represents the manner in which I form and
pave my roads and tracks.

40 A, A, A, are the foundation planks, crossing each other on the graded way. These planks or boards may be laid either with their edges in contact, or several inches apart, according to circumstances. Upon
45 these I lay the string pieces B, B, the depth of which pieces must be governed by the length to which it is intended to cut the paving blocks. Suppose this depth to be twelve inches, then two such string pieces
50 may be conveniently cut from logs of twelve inches square, by running a saw through them so as to leave a face of three inches for the iron rail, or upper side of the string
55 piece, and a base of nine inches on which it may rest. These string pieces are to be laid at such distance apart as is required for the

road or track, the sloping sides toward each other, so as to constitute a suitable abutment for the paving blocks.

C, C, C, are the paving blocks, and these I
60 cut from sawed scantling, of any suitable timber, crosscutting it in forming the blocks in an oblique direction, so as to adapt them to the slope of the sides of the string pieces, and forming the respective blocks which are
65 to fill the space between the two string pieces wedge shaped, or in the manner of key stones, so that when combined they shall constitute a kind of flat arch, the surface of
70 which is to be left sufficiently crowning to carry off the water. By giving to them this form they will be very readily laid in place, while, at the same time, from their resting
75 upon a foundation of boards or planks, they will have no tendency to force the string pieces apart. When the track is double, the plank A, A, should be of sufficient length to extend under both, and in addition to the diagonal plank, others, acting as crossties,
80 may be added, if preferred.

D, D, are string pieces of a second track, but represented as filled in with gravel, or small stones, instead of being paved with
wood. An iron rail is shown as laid upon one of the string pieces at E, E.

85 The modes of confining the iron plate rails, to the string pieces, heretofore adopted, have been found defective. When attempted to be secured by spikes, if the spikes do not draw out, their heads soon give way
90 so as to loosen the rails. Screws passed into the wood, and having heads adapted to countersinks in the rails have been found liable to the same objection. Screw bolts,
95 with nuts on their lower ends, have been passed entirely through the string pieces, under an idea that by turning the nuts the rails might be tightened, when requisite, but this plan has failed not only from the labor and difficulty attending the getting at them
100 but from the rusting of the nuts and screws under the string pieces, by which the turning of the nuts is entirely prevented. To avoid these difficulties I have adopted the following plan, as represented in Fig. 2,
105 which shows a cross section through one of the string pieces, the rail upon it, and the kind of bolt which I employ to confine the two together.

B is the string piece, and E, the iron rail; 110 through this I pass a round bolt *a*, the head of which fits into a countersink in the rail, its

shank passing into a hole bored into the string piece to receive it. Through this bolt there is a mortise to admit the iron wedge *b*, entering a corresponding mortise in the string piece. The upper edge of this wedge bears against the string piece, and its lower edge against the lower edge of the mortise in the bolt, which mortise is of sufficient length to allow the bolt to be drawn down by the wedge. It will be manifest that the tightening of this bolt can be at any time effected by the removal of a few shovels of earth; these bolts may be an inch in diameter, and they may be made of cast iron, which may, if found requisite, be rendered malleable.

Having thus fully described the manner

in which I construct my improved roads, and tracks, what I claim therein as constituting my invention and desire to secure by Letters Patent, is—

The manner of forming the track or road by the combination of the string pieces with sloping sides, and the wooden blocks cut from scantling, adapted to the said sloping sides and resting on a foundation of boards or planks, the whole arranged and constructed substantially as set forth.

WILLIAM RUSSELL.

Witnesses:

THOS. P. JONES,

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