

(No Model.)

J. PENNIE.
RAILWAY TRACK STRUCTURE.

No. 588,080.

Patented Aug. 10, 1897.

Fig. 1.

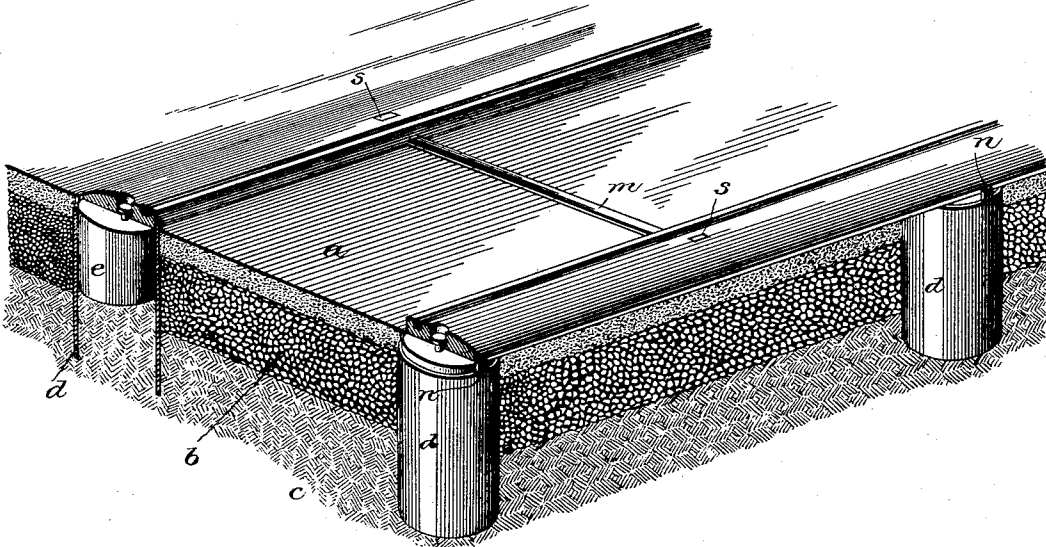


Fig. 2.

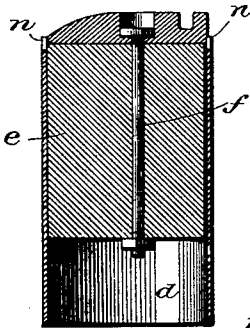


Fig. 3.



Fig. 3a.

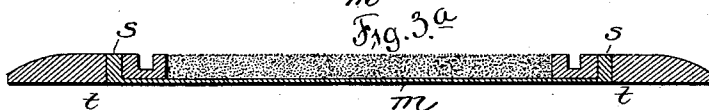
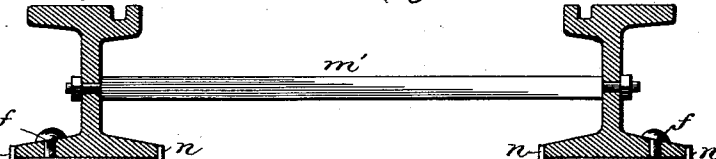
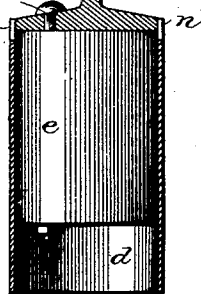
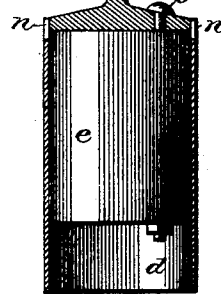


Fig. 4.



Witnesses

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RAILWAY-TRACK STRUCTURE.

SPECIFICATION forming part of Letters Patent No. 588,080, dated August 10, 1897.

Application filed April 26, 1897. Serial No. 634,011. (No model.)

To all whom it may concern:

Be it known that I, JOHN PENNIE, a citizen of the United States, residing at Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Railway-Track Structures; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in railway-track structures, and is designed to furnish a construction that can be readily and expeditiously installed and repaired and that will be economical and durable.

The invention is particularly advantageous for the establishment of tramways upon streets or roads to be laid with asphalt, or that have already been laid with asphalt, and especially in the latter instance, for the reason that it obviates the necessity of breaking up so large a portion of the asphalted surface as is customary where the ordinary cross-sleepers are employed.

In the accompanying drawings, Figure 1 represents a portion of an asphalted road-bed provided with a tramway installed in accordance with my invention. Fig. 2 represents, on a larger scale, a sectional view of one of the supports or anchorages for the track-rails. Fig. 3 represents a cross-section taken through the track-rails and illustrates a tie-bar connection. Fig. 3^a is a like view showing a supplemental body of asphalt-pavement occupying the space between the rails. Fig. 4 represents in cross-section my invention as applied to the ordinary girder-rail tramway.

Similar letters of reference indicate similar parts throughout the several views.

Referring to the drawings, *a* indicates the asphalt covering, *b* the underlying concrete, and *c* the earth foundation of the road-bed.

In carrying out my invention I establish in the ground beneath each line of track-rails a row or series of metal pipe-sections *d*, spaced at suitable distances apart. In those instances where the asphalt and concrete are already laid holes or recesses may be bored therethrough into the soil, whereupon the metal pipes are inserted. The holes may be

bored to a depth sufficient to receive the entire length of the pipes or only to a fraction of such length, in which latter case the pipe is to be driven down for the remaining distance. If the asphalt and concrete have not been laid, the pipes may, if the soil will permit it, be driven without preliminary boring, or holes may be bored for them, if desired.

The pipes will have at their lower portion a filling of earth more or less elastic, which may be pounded down to compact it sufficiently, and at their upper portions will be provided with plugs *e*, of wood, which may be protected from decay by impregnating them with creosote or coating them with tar, varnish, or the like. The upper ends of the pipes reach to the surface of the asphalt, and the plugs *e* therein are provided with fastenings for securing the track-rails—as, for instance, the screw-threaded bolts *f*, with their nuts and washers, which pass through the base of the rail and through the plugs. The number of the bolts to be employed will depend upon the strain to which the parts are subjected when in use. The plugs *f* rest upon the filling of more or less elastic earth below them and are therefore susceptible of a slight vertical movement calculated to impart ease of movement to the cars. They are removable from the pipes in order to permit the insertion of additional filling material should that at any time be necessary by reason of subsidence.

To prevent the rails from spreading, I provide the upper ends of the pipes with lips *n*, or, in addition thereto, I may connect the rails at suitable distances by tie-bars *m*, having upwardly-projecting lugs *s*, which enter corresponding apertures in the rails.

In some instances, after the track is laid in the manner shown in Figs. 1 and 3, I propose to fill in the space between the rails with a supplemental layer *a'* (see Fig. 3^a) of asphalt pavement laid upon the original asphalt *a*. By this expedient the space between the rails is occupied up to a level with their top surfaces, and consequently they are not only more firmly established, but they are protected from jars and shocks that they would otherwise receive from the wheels of vehicles driven across the track.

In Fig. 4 I have shown the application of

my invention to the familiar form of girder-rail *t*, the pipes being sunk farther in the ground in order to compensate for the height of the rails. To prevent spreading, the tie-bars *m'* may be employed, connected at their ends to the webs of the girder-rails.

Having thus described my invention, what I claim is—

1. A railway-track structure, consisting of a series of upright pipe-sections, contained within corresponding recesses or cavities of the road-bed, said pipe-sections having at their lower ends a filling of earth or the like, and at their upper ends removable plugs, in combination with track-rails resting upon the plugs and secured thereto by screw-bolts passing through the plugs and through the rail-bases and provided with retaining-nuts; substantially as described.

2. A railway-track structure, consisting of a series of upright pipe-sections, contained within corresponding recesses or cavities of the road-bed, said pipe-sections having at their lower ends a filling of earth or the like, and at their upper ends removable plugs, in combination with track-rails resting upon the plugs and secured thereto by suitable fastenings, the pipe-sections being provided with lips against which the edges of the rail-flanges abut; substantially as described.

3. A railway-track structure, consisting of a series of upright pipe-sections, contained within corresponding recesses or cavities of the road-bed, said pipe-sections having at

their lower ends a filling of earth or the like, and, at their upper ends, removable plugs, in combination with track-rails resting upon the plugs and secured thereto by suitable fastenings, and cross-bars connecting the track-rails; substantially as described.

4. A railway-track structure, consisting of a series of upright pipe-sections, contained within corresponding recesses or cavities of the road-bed, said pipe-sections having at their lower ends a filling of earth or the like, and, at their upper ends, removable plugs, in combination with track-rails resting upon the plugs and secured thereto by suitable fastenings, and cross-bars connecting the track-rails, said cross-bars being provided at their ends with upright projections fitting within corresponding apertures of the rails.

5. A railway-track structure, consisting of a series of upright pipe-sections embedded within the road-bed said pipe-sections having at their lower ends a filling of earth or other more or less elastic material and having at their upper ends removable plugs resting upon the lower filling and capable of a limited vertical movement thereon, in combination with track-rails resting upon the plugs and secured thereto; substantially as described.

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Witnesses:

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