

J. E. Halsey,
Railroad Track,

No. 85,304,

Patented Dec. 29, 1868

Fig. 1.

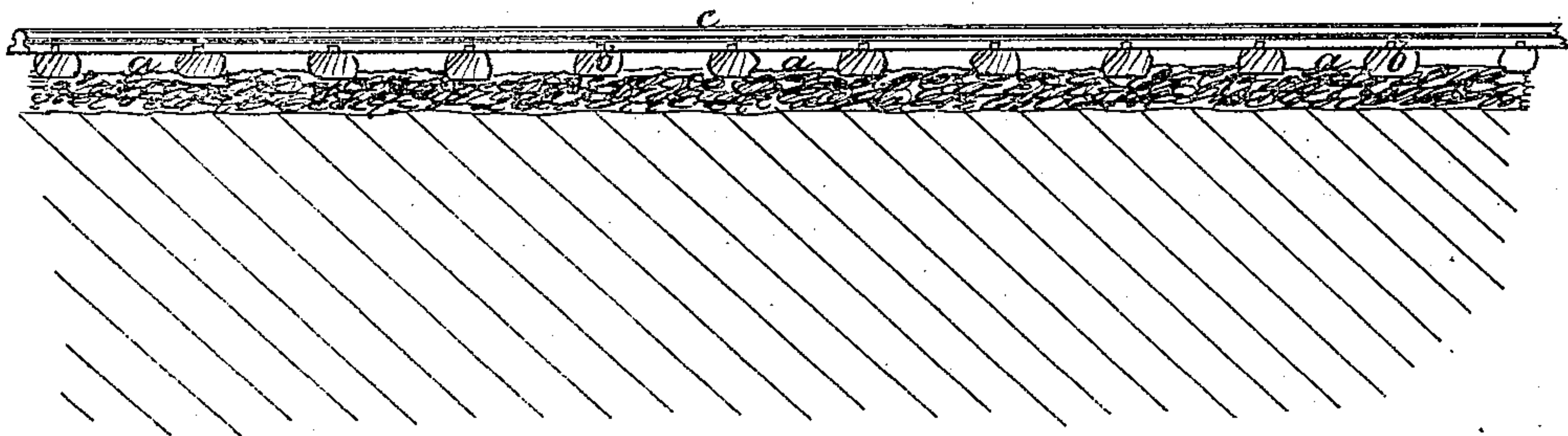
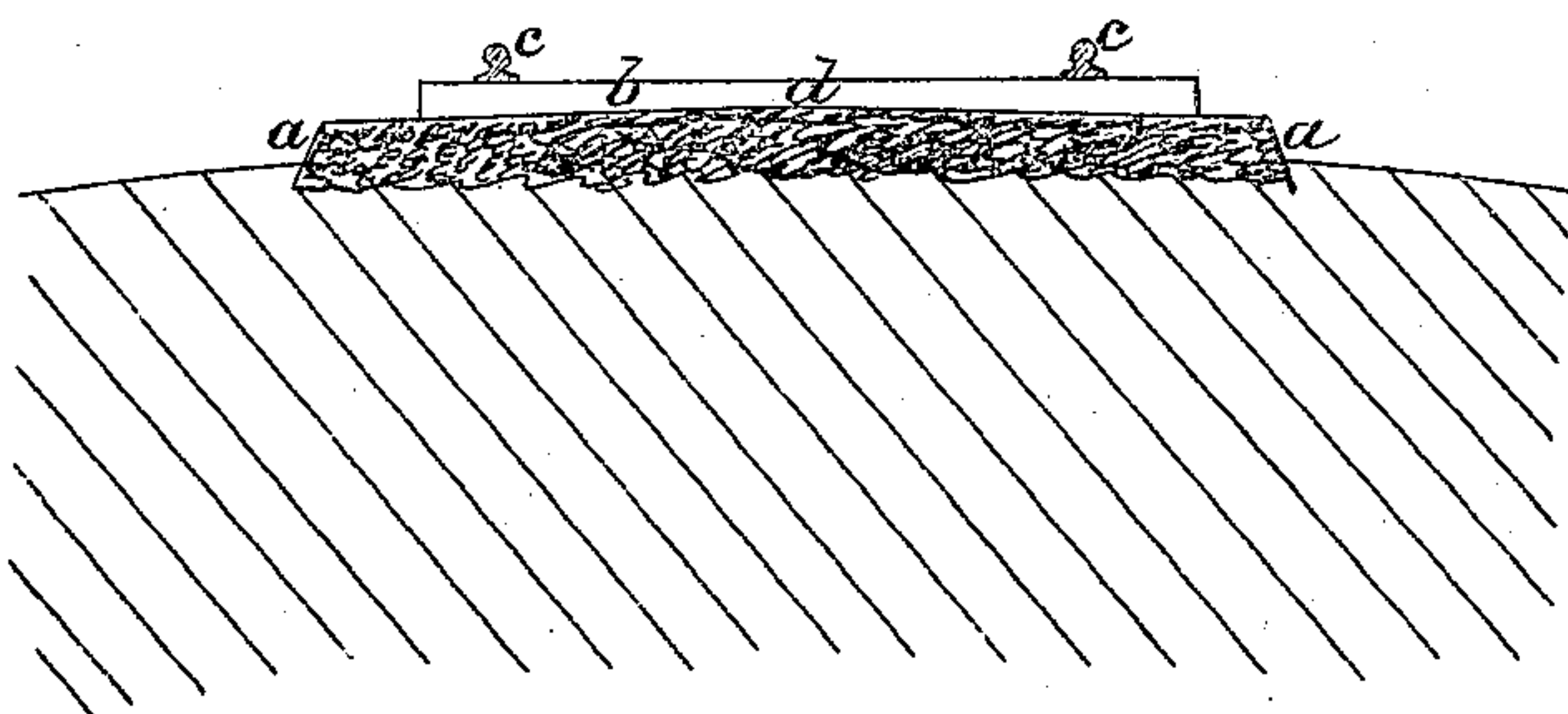


Fig. 2.



Witnesses:
Chas. H. Smith
Geo. A. Walker

Inventor:
James E. Halsey
L. M. Serrell atty

UNITED STATES PATENT OFFICE.

JAMES E. HALSEY, OF NEW YORK, ASSIGNOR TO HIMSELF, MORRIS H. SMITH, AND SAMUEL F. NOYES, OF BROOKLYN, N. Y.

IMPROVED FOUNDATION FOR RAILROAD-TRACKS.

Specification forming part of Letters Patent No. 85,304, dated December 29, 1868.

To all whom it may concern:

Be it known that I, JAMES E. HALSEY, of the city and State of New York, have invented and made a certain new and useful Improvement in Foundations for Railroad-Tracks; and I do hereby declare the following to be a full, clear, and exact description of the said invention, reference being had to the annexed drawings, making part of this specification, wherein—

Figure 1 is a longitudinal section of said foundation and track, and Fig. 2 is a cross-section of the track and foundation.

Similar marks of reference denote the same parts.

The disturbances and displacement of railroad-tracks as now laid arise mainly from the action of water, which either softens the road-bed, so that the motion and weight of the trains cause the ties to sink into the earth, or else the frost displaces said ties. In other instances heavy rains cause the road-bed to be washed away. To ballast the track and keep it in order is a source of constant expense, both in consequence of the labor required upon the road-bed itself and from the injury to the rolling-stock caused by the inequalities of the railway. The attrition resulting from the passing trains renders the earth surrounding the cross-ties a fine powder, which causes the dust in dry weather, that is so disagreeable to passengers and injurious to the rolling-stock by causing wear between the moving surfaces. The cross-ties, being embedded in the earth and near the surface, are rapidly rotted out from being in the most exposed condition for the action of air and moisture.

The nature of my said invention consists in a foundation for railroads, formed by laying the cross-ties upon or wholly or partially in a bed of stone and earthy material cemented together by asphaltum, coal-tar, or other bituminous material. Thereby the cross-ties are held into their places, so that they will not be moved by the passing trains; hence dust will be avoided, the roadway will be more permanent and durable, the earth cannot be washed away, as the surface is rendered impervious to water, and therefore the frost will not disturb the road-bed, the ties will be protected from moisture and will be more durable. The roadway being permanent, the tracks remain in a much better condition, and there is less

wear from concussion and the rails and running-gear will last longer and the cars run more steady. The foundation, being of bituminous material, possesses a slight amount of elasticity, so that there will not be rigidity in the foundation, as with stone. Injury and inconvenience from dust are avoided, and although a road-bed prepared as herein specified will involve additional cost in construction, there will be a saving in repair and on rolling-stock more than compensating the original outlay.

I mix gravel, broken stone, iron cinder, or other hard substances in pieces of about the size of an egg, and smaller, with sand, ashes, or other material and coal-tar, asphaltum, or other bituminous material, reference being had to the character of material that can the most easily be procured. Dry clean gravel mixed with coal-ashes, broken stone, and bituminous materials in about the proportion of one part of coal-ashes or sand to three parts of the coarser materials, may be employed to advantage, the substances being thoroughly mixed together into a stiff plastic mass that is to be laid upon the earth or railway bed or foundation, as at *a*, and the same is to be consolidated by rollers or rammers and the cross-ties *b* laid upon the same and bedded down to the right level. The spaces between the ties may be filled with such plastic material; but I prefer that the surface of such material slope so as to shed off water. This slope may be in each direction from the point *d*. The rails *c* are to be of any desired character.

The ties, being embedded into the plastic material, adhere to the same, so that water will not accumulate around the tie in the depression occupied by it, and, if desired, the tie itself may be tarred either before or after it is laid.

What I claim, and desire to secure by Letters Patent, is—

A foundation for railway-ties, formed in the manner and for the purposes specified.

In witness whereof I have hereunto set my signature this 12th day of November, A. D. 1868.

JAS. E. HALSEY:

Witnesses:

CHAS. H. SMITH,
GEO. T. PINCKNEY.