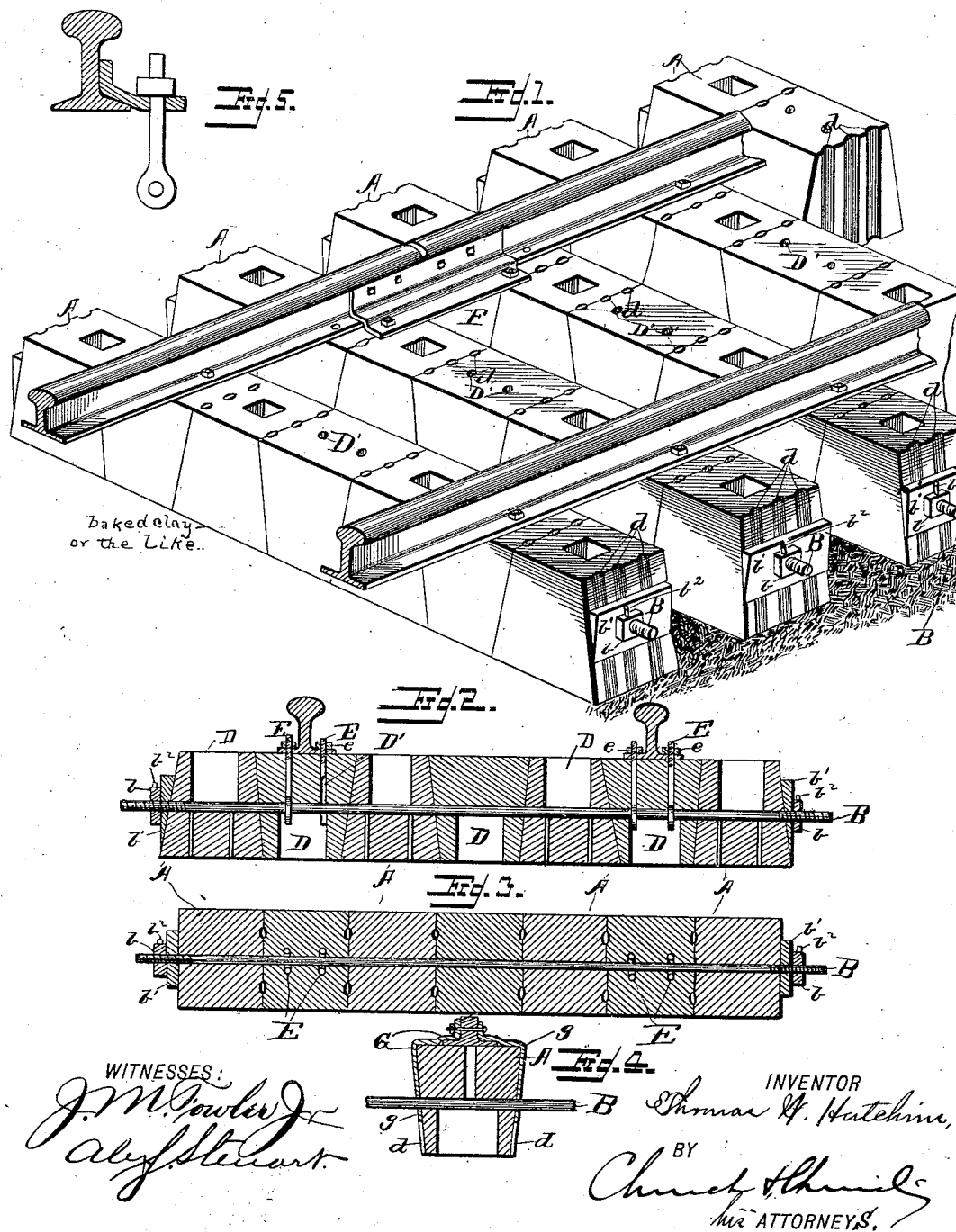


(No Model.)

T. W. HUTCHINS.
TRACK CONSTRUCTION FOR RAILWAYS.

No. 479,808.

Patented Aug. 2, 1892.



UNITED STATES PATENT OFFICE.

THOMAS W. HUTCHINS, OF WYOMING, PENNSYLVANIA.

TRACK CONSTRUCTION FOR RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 479,808, dated August 2, 1892.

Application filed March 10, 1892. Serial No. 424,409. (No model.)

To all whom it may concern:

Be it known that I, THOMAS W. HUTCHINS, of Wyoming, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Track Construction for Railways; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the letters of reference marked thereon.

This invention relates particularly to the means employed in railway-track construction for supporting and holding the track-rails, and has for its object to provide a structure which shall be strong and durable and dispense entirely with the use of wood, which latter has not been found to answer the requirements in an ideal track construction, both because of its liability to deterioration and expensiveness, the latter an evil which is bound to increase in proportion to the diminishing supply and the increasing consumption.

In carrying this invention into practice, the portion of the road-bed immediately supporting the rails is formed by cross pieces or ties composed of abutting sections of mineral substance (such as earthenware, terra-cotta, stoneware, artificial stone, glass, or any of the numerous forms of baked clay) bound together by through tie-rods of metal, and in the preferred construction the means employed for holding the sections together also serves to retain the track-rail fasteners in place, all as will be now described, and pointed out particularly in the appended claims.

Referring to the accompanying drawings, Figure 1 is a perspective of a short section of track constructed in accordance with my invention with the earth or filling removed. Fig. 2 is a transverse vertical section through one of the ties or supports and fastenings. Fig. 3 is a horizontal section. Fig. 4 is a vertical section showing a slight modification. Fig. 5 is a detail of one of the eyebolts for holding the track-rails.

Like letters of reference in the several figures indicate the same parts.

The ties or supports are, as before stated, composed of abutting sections, and by refer-

ring to the drawings it will be seen that each section A is slightly wedge shape, or narrower at one end than at the other, adjacent sections being reversely placed. Passing through the whole series is a tie-rod B, preferably iron or steel, screw-threaded at the ends for the reception of nuts *b*, by which the sections are held firmly in place. To further insure the clamping of the sections properly, washers *b'* are placed beneath the nuts of proper shape to compensate for the inclination of the faces of the section—i. e., wedge shape—and preferably of sufficient length to pass way across the section and afford an extended bearing. Lock-nuts may be employed or keys *b''* may be driven through openings in the nuts, if desired, to hold them fast. The abutting faces of the section are corrugated or formed with channels *d* therein, and when the sections are assembled in position tar, asphaltum, or equivalent cementing substance is poured in between them or the faces are coated so as to unite in a solid homogeneous body. Each section is further formed with a central aperture D, which facilitates, greatly, the formation of the sections for the reason that it is not possible to thoroughly bake and harden vitreous substance through more than about four or five inches, and in order that the blocks shall not exceed this in any direction this aperture is made. If the blocks were solid, the interior would be considerably weakened by not being sufficiently hardened. Said apertures afford, also, a ready means for attaching the track-rails to the central transverse tie-rod, as eyebolts may be passed in through the apertures and the tie-rod in turn passed through the eyebolts as the sections are assembled. As shown in Fig. 2, for instance, each section has a large opening extending in from one side and two small round holes *D'* from the opposite side, and through the latter eyebolts *E* may be passed, screw-threaded at the ends for the reception of nuts or plates *e*, which clamp the track-rail securely.

In laying the track care should be taken that the rails rest on those sections in which the larger end is uppermost, as pressure upon them is distributed by the wedging action throughout the whole structure, whereby disarrangement or sinking of any section under

the weight of passing trains is prevented. It is preferable to employ, say, five or nine sections for each tie, the rails being thus brought on the second sections from the ends, as shown in the drawings, although the number of sections is not material, as the size may be varied to suit exigencies, and if it be found that the central apertures D need to be made larger because of difficulty of manufacture they may be filled after the sections are completed, as will be readily understood. The joints between adjacent rails should come between the ties, and to distribute the strain more perfectly and at the same time hold the rails in place the fish-plates F are made long enough to rest on the ties and are provided with holes through which the eyebolts E pass, nuts being applied, as heretofore pointed out, to clamp the plates firmly down on the rail-bases.

While it is necessary that the central transverse tie-rod be employed as a means for securing the rails on the tie, owing to the frangibility of the latter, still it is not essential that eyebolts be employed, as other forms of fastenings are obvious, for instance, as shown in Fig. 4, plates G, bent to co-operate with the rail and be bolted thereto, as fish-plates or simple fastening-plates, are provided with arms g, passing down between the sections and having perforations for the passage of the tie-rod. This construction has some advantages in that the central openings in the sections may be dispensed with, an undesirable construction, however, at this day, because of difficulty in manufacture not necessary to be stated here.

The material of which the sections are composed it is obvious may be varied greatly. Preferably, however, I employ some one of the forms of baked or fired clay, as stoneware or terra-cotta, although artificial stone, glass, and other mineral substances of similar nature may be employed if convenient or desirable, the essential qualities being indestructibility by any of the forms of decay or animal life, heretofore found so injurious to ties of wood, coupled with sufficient strength to resist the strains and wear and tear of traffic over the road-bed.

The structure presents many advantages, in that it may be composed of the most plentiful of nature's products, is cheaply and easily

made, and is practically indestructible in so far as weather and climate are concerned. 55

I claim—

1. A tie or support for railway-track rails, composed of a series of abutting sections of mineral substances united by a tie-rod passing way through the same, substantially as described. 60

2. A tie or support for railway-track rails, composed of a series of abutting sections of mineral substances united by a tie-rod passing through the same, the sections upon which the rails rest being wedge shape, whereby the pressure of the rails on the larger ends distributes the strain throughout the tie, substantially as described. 65

3. A tie or support for railway-track rails, composed of a series of abutting wedge-shaped sections united by a tie-rod, adjacent sections being reversed, substantially as described. 70

4. A tie or support for railway-track rails, composed of a series of abutting wedge-shaped sections united by a tie-rod, adjacent sections being reversed and the abutting faces corrugated or formed with channels, substantially as described. 75

5. A tie or support for railway-track rails, composed of a series of abutting sections united by a tie-rod with central vertical apertures in said sections, substantially as described. 80

6. The combination, with the series of abutting wedge-shaped sections, of the tie-rod passing through said sections, and the washers at the ends of the rod thicker at one edge than at the other to compensate for the inclination of the faces of the end sections, substantially as described. 85 90

7. The combination, with the series of abutting sections and tie-rod passing through the same, of the track-rail fasteners passing in through the sections and connected to the tie-rod, substantially as described. 95

8. The combination, with the series of abutting sections and tie-rod passing through the same, of the eyebolts through which the rod passes, extending out through the top of the sections and adapted to secure the track-rails in place, substantially as described. 100

THOMAS W. HUTCHINS.

Witnesses:

J. FRANK NUSS,
R. T. PETTIBONE.