A. De WIECZFFINSKI-SERRES.

RAILROAD TRACK.

No. 192,842. Patented July 10, 1877

Fig. 1.

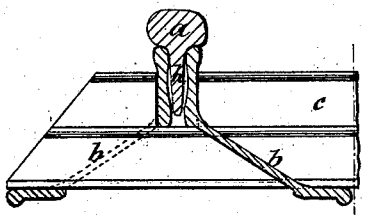


Fig. 2.

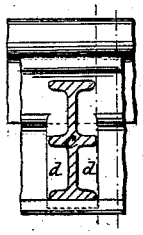


Fig. 3

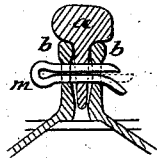


Fig. 4.



Fig. 5

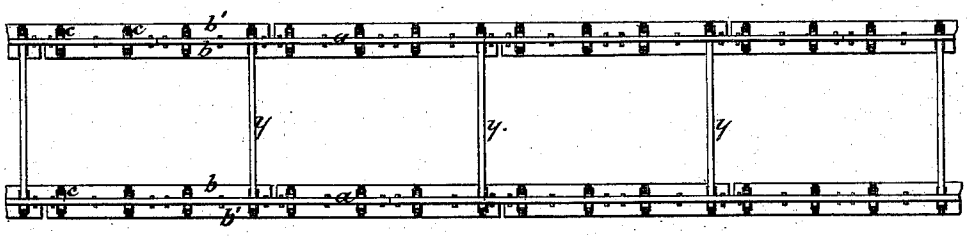


Fig. 6.

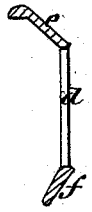


Fig. 7

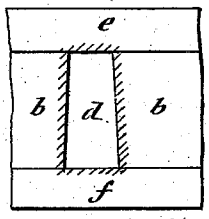


Fig. 8



Fig. 9.

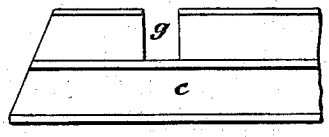


Fig. 10.

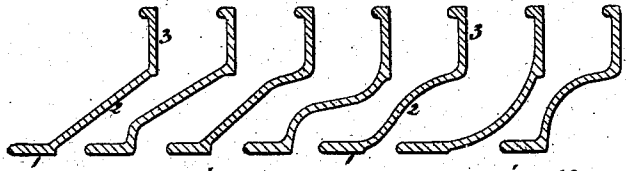


Fig. 11.

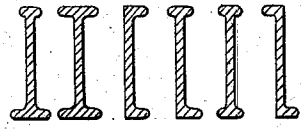


Fig. 12.

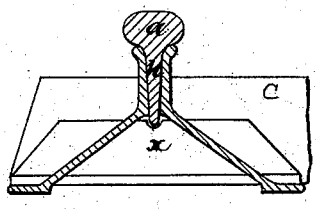


Fig. 13.

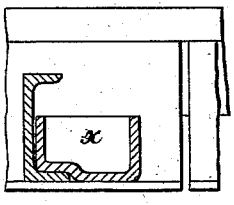
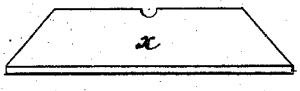


Fig. 14.



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UNITED STATES PATENT OFFICE.

AUGUSTE DE WIECZFFINSKI-SERRES, OF PARIS, FRANCE.

IMPROVEMENT IN RAILROAD-TRACKS.

Specification forming part of Letters Patent No. **192,842**, dated July 10, 1877; application filed May 25, 1877.

To all whom it may concern:

Be it known that I, AUGUSTE DE WIECZFFINSKI-SERRES, of Paris, France, have invented a new and useful system of joining the component parts of rails and their supports, and its application to the construction of railways entirely metallic; and that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification.

The object of my invention is to produce a new mode of connecting rails to their supports, and to apply it to the construction of metallic roads.

What I wish to accomplish by means of my invention is the construction, in an easy and practical manner, of metallic ways for railroads, tramways, of any given gage; also of tracks, &c.

The main advantages which I have obtained by my invention are as follows: Suppression, to a great extent, of small pieces, such as bolts, rivets, keys, wedges, &c.; reduction to a minimum of the number of pieces, and of special gradings necessary to the construction of the road; simplifying the operation of laying the track, which, according to my invention, can be done without special tools, and without supplementary adjustment; dispensing with any necessity of selecting or measuring the pieces that are to be laid in position; convenience with which the same pieces of connection of the rail can be used for a curved as well as for a straight road, the cross-ties only being slightly modified according to the curves in the road; great reduction in the cost of keeping the track, resulting from the small number of pieces used, and their permanent relative position requiring no adjustment; stability and lateral rigidity of the road, due to the form given to the sleepers; great saving in the amount of ballast, for which any material or quality of material may be employed.

My system of connecting the parts consists in the union, by simple penetration and rotation, of two pieces, which I shall, for convenience, call "twin sleepers," and of one or more pieces, which I shall denominate "saddle-supports," the whole being tied together and completed by placing in position the rail, upon the head or top of which the car-wheels roll.

In order to show that this my system of constructing railroads can be accomplished in many analogous ways, and is susceptible of many modifications without departure from the principle of my invention, I have added to this specification drawings indicating, by way of illustration, certain plans of construction which seem to me the best to use in practice.

Figure 1 is a transverse section of the complete construction of a rail, of which Fig. 2 represents a side elevation.

The rail is formed of the head-piece *a*, upon which the car-wheels roll, and of two sleepers, *b*, forming, by their union, the compound or twin sleeper, which supports the piece *a*. The union of the three pieces *a b b*, constituting the rail, is accomplished by means of a distinct piece, *c*, called a "saddle-support," in the manner as follows: The sleepers *b* have, as shown at *d*, openings through which the saddle-supports are passed. The form of these openings may vary; but they should in all cases be slightly larger than the height of the piece *c*.

Figs. 6 and 7 represent, in section and in elevation, a sleeper, *b*, with the opening *d* cut out or formed between the two portions *e* and *f* of the sleeper, to allow the piece *c* to be passed through when these sleepers are held in proper position. Figs. 8 and 9 represent, in section and in elevation, detached views of this piece *c*. It has in its upper portion an opening, *g*, in which the upper part of the two sleepers *b* rest, when, after having introduced the piece *c* through the opening *d*, the sleepers are dropped into the opening *g*, so that there only remains the shank *h* of the piece *a* to be introduced between the upper part of the two sleepers *b* to complete the construction of the rail in accordance with my invention, as shown in Figs. 1 and 2 of the annexed drawings.

It is easy to understand that the sleepers *b* can be made of various forms. In Fig. 10 I have represented seven different forms which could be used with like effect. The main point in making sleepers to be used according to my system is, that their form be such as to

present three distinct parts, of which No. 1 forms the base, No. 2 the intermediate portion, having an opening through which the saddle-support can be passed, and No. 3, which, together with the same part in the twin sleeper, constitutes a clamp of the shank *h* of the rail proper. I will also state that the piece *c*, that has been called "saddle-support," can be cast or rolled under various forms, as shown in Fig. 11, where six different forms are represented.

It will be easily understood that the rail itself can be made of any desired form, according to the object in view. A construction analogous to that described could be made with like results, involving rotation, not of the sleepers, but of the saddle-support, around an axis normal to the length of the rail. The piece *c* should then be wedged up by an auxiliary piece, *x*, so that the rotation shall not be made in the opposite direction. Figs. 12 and 13 represent this arrangement in transverse and longitudinal section. Fig. 14 represents a separate view of the auxiliary piece *x*, upon which a small notch is made to receive the lower extremity of the shank of the rail *a*. In this mode of proceeding the sleepers would be placed immediately according to the angle that they are intended finally to occupy, the wedging-piece *x* being held by the introduction of the rail *a*, the lower extremity of which will rest in the notch of the wedging-piece.

A special wedging-piece can be dispensed with by forming the notch in the piece *c* with a rib to arrest the rotation. It is easy to understand the manner by which my system of uniting the different parts can be applied to the construction of railroads entirely metallic, and Fig. 5 represents, in plan, a railroad-track constructed according to my system.

The two rails forming the track are mounted upon the sleepers *b b'*, united together by the saddle-support *c*. At variable distances, say 2 m. 20 apart, are placed the cross-ties *y*, which unite two opposite saddle-supports, or are formed as an extension of these pieces *c*. It is best that the sleepers break joint, or that the ends of each sleeper of a pair should overlap the ends of the other, so as not to require any additional piece to unite them together lengthwise. The ends of the rail itself can rest upon any point desired of the length of the sleepers, and it may be well also to arrange them so that one end of a rail may overlap the end of another. Thus constructed, the rails will offer favorable conditions to reduce the jars sustained by the road and the rolling-stock. The two main rails will thus be securely held and tied together by the saddle-supports and the cross-ties, and these cross-ties will be located so that one of them will be close to the ends of the sleepers, and, if possible, each sleeper should have two of these cross-ties.

To guard against expansion and contraction by heat and cold, and to establish a better union of the parts when the rails and sleepers are under pressure, having a tendency to bend them, and also to make it more difficult for evil-disposed persons to remove the heads of the rail *a*, the three pieces—viz., the two sleepers *b*, forming the compound sleeper, and the shank of the rail *a*—can be perforated and united by a split key, *m*. Figs. 3 and 4 represent this construction in transverse and in longitudinal section. The piece *a*, forming the surface of the rail proper, upon which the rolling-stock travels, is formed, as represented in the drawings, of a head, *a*, and a shank or stem, *h*.

These may be made of any desirable metal, such as steel or wrought-iron, and may be of any shape deemed best for the purposes intended.

Having now described my invention, and the manner in which the same is or may be carried into effect, what I claim as my invention, and desire to secure by Letters Patent, is as follows:

1. The combination and rigid connection, as shown and described, of four elements, constituting a system of railway structure, namely: a shanked rail, two longitudinal side supporting sleepers—one on either side of said rail—and saddle-pieces, having notches provided for the interlocking of parts, substantially as herein shown and set forth.

2. The combination and arrangement of a shanked rail, twin sleepers, saddle-support, and wedge-piece, substantially as shown and set forth.

3. The construction of twin metallic sleepers, each being formed with a horizontal base-plate, a vertical side support and clamp of the rail, and a further intermediate perforation for the reception of the locking saddle-piece and cross-tie, substantially as shown and set forth.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

A. DE WIECZFFINSKI-SERRES.

Witnesses:
EMILE BARRAULT,
AUG. VINCK.