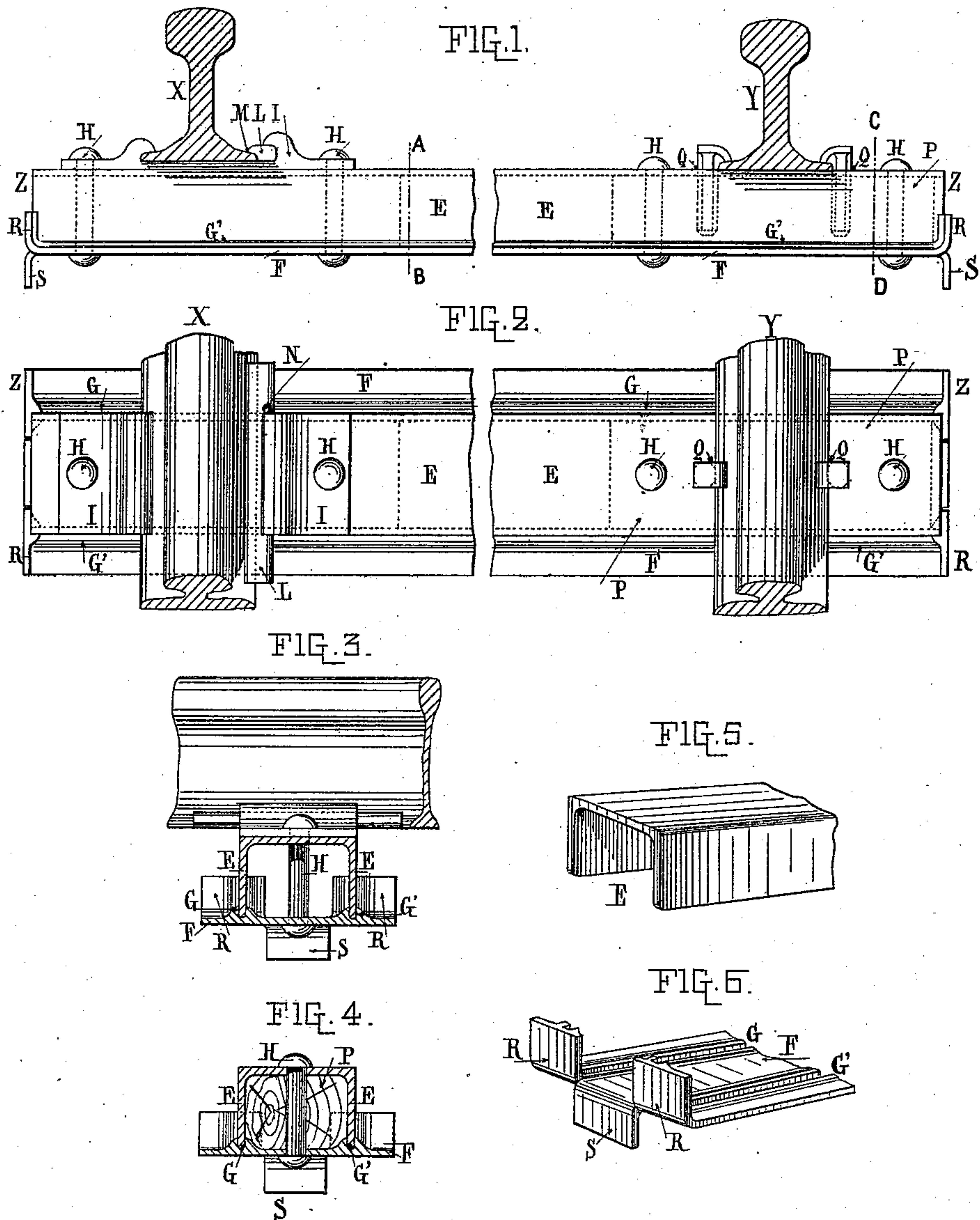


(No Model.)

C. DELORME & E. BROCHON.
METAL RAILWAY SLEEPER.

No. 429,607.

Patented June 10, 1890.



Witnesses
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E. D. Smith

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UNITED STATES PATENT OFFICE.

CHARLES DELORME AND EMILE BROCHON, OF TROYES, FRANCE.

METAL RAILWAY-SLEEPER.

SPECIFICATION forming part of Letters Patent No. 429,607, dated June 10, 1890.

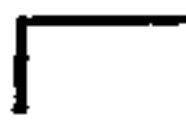
Application filed December 2, 1889. Serial No. 332,290. (No model.)

To all whom it may concern:

Be it known that we, CHARLES DELORME and EMILE BROCHON, citizens of the Republic of France, and residents of Troyes, France, have invented certain new and useful Improvements in or Relating to Metal Railway-Sleepers, of which the following is a specification.

The improved metal sleeper constituting the object of this invention is represented in the drawings accompanying this specification, in which drawings—

Figure 1 is an elevation, and Fig. 2 a plan, of the sleeper with portions of rails attached. Fig. 3 is a transverse section on the line A B of Fig. 1. Fig. 4 is another sectional view on the line C D of Fig. 1. Figs. 5 and 6 are perspective detail views of parts of the sleeper.

On examining the figures it can be seen that the metal sleeper consists of two distinct parts, the body E and the base F. The body E is of iron or steel of -shaped or channelled section, the upper surface of which forms the bed or seat of the rails, while the vertical webs form the sides of the sleeper. The base F is also constructed of, preferably, rolled iron or steel, and is formed with two longitudinal parallel grooves G G', into which fit the lower edges of the two vertical webs of the body E of the sleeper.

Beyond the grooves G G', at each side of the sleeper, extends the base F, so as to form two longitudinal edges, which support the weight of the rails, whereby the sleeper, when once fixed in position, will be solidly bedded and held in a vertical position.

It can be easily understood that by the webs of the body E being retained in the grooves G G' of the base F the rigidity of the body is considerably increased. The webs of the body E, by being so retained in the grooves G G', cannot become spread apart or closed toward each other, while at the same time the sleeper retains sufficient elasticity.

Among the many forms of sleepers hitherto devised are some which are made with a view to economy; but these have been deficient in rigidity, and those which possessed sufficient resistance were of no practical value, because, owing to their complicated nature and great weight, they were too costly.

The simplicity of construction combined

with the lightness of our sleepers lessens their cost to an extent not hitherto attained.

The body E of the sleeper is attached to the base F by means of rivets or bolts H, which serve at the same time to hold the clips or chairs of the rail. So constructed our sleeper is of great strength; but taking into account the transverse strains which are to be met more particularly at the curves of the track by the bolts or rivets joining the two parts of the sleeper, the body E and base F act to diminish that strain, and thereby afford greater security. To attain this object, we make the base F longer on both sides than the body E, as is shown in Figs. 1, 2, 3, 4, and 6, and we divide by two longitudinal cuts the said projecting portion. The two symmetric parts R include the grooves G G', and the part S is between the two parts R. The two parts R are turned up to a right angle against the ends of the wings of the body E, which fit up to a certain point of their height into the upturned parts of the grooves G G'. In the same way the rivets or bolts H, and also the base F, assist with the ends R raised against the body E to hold the latter transversely, whereby the bolts or rivets H are to a corresponding extent relieved. The part S is bent downward to a right angle to the base in such a way as to enter the ballast, and thus afford all the required anchorage to secure the sleeper in position. The edges of the raised parts R on both sides of the grooves G G' also contribute to retain the sleeper in position, as these parts are also bedded in the ballast.

Our sleeper can be used for supporting rails of any section.

At X in Figs. 1, 2, and 3 we represent, as an example, a flange-rail held upon our sleeper by means of the chair-clips or jaws I, of iron, steel, or any other suitable metal. This chair is fixed upon the upper surface of the sleeper by means of the same rivets or bolts H as serve to join together the body E and base F of the sleeper. The flange M of the rail is placed in the chair I, and is held there by a key L, which may be provided with a hole N, into which a pin may be placed for the object of preventing any displacement of the key L.

As it is sometimes necessary to maintain the rail upon the sleeper by means of clamps, spikes, or screws, as is shown with the rail Y

in Figs. 1 and 2, we place into the empty space in the interior of the sleeper, at its ends, a block P of wood, which we fix in position by the rivets or bolts H, employed to hold together the two parts of the sleeper, and we form holes Q in the upper surface of the body E, so as to leave a passage for the wood-screws or clamps, which serve to attach the rail to the sleeper. These wood-screws, spikes, or clamps fit solidly into the wood P and maintain in position the rail as perfectly and satisfactorily as if wooden sleepers were used.

It is evident that the dimensions and the metal of which these sleepers consist can be varied according to requirements, and also differently-shaped rails could be fixed upon our sleepers, and also that there may be used any kind of chairs or clips other than those before described for securing flanged rails in position.

We claim—

1. In a railway-sleeper, the combination, with the channel-shaped body having the downwardly-turned sides extending from end to end, of the substantially flat extended base having the longitudinal grooves for the downwardly-extending sides of the body extending from end to end of the ties, whereby distortion is prevented, substantially as described.

2. In a railway-sleeper, a base, such as F, longer than the body E, the parts projecting beyond the ends of the body being divided into three parts R R S, the first two, including the prolongation of the grooves G G', being turned up toward the ends of the webs of

the body E, which webs fit into the grooves G G' of the said base, while the third part S is bent downward to a right angle to the base, in order to fit into the ballast, substantially as herein specified, and illustrated in the accompanying drawings.

3. In a railway-sleeper, the combination, with the body having the downwardly-turned sides, of the base having the independent grooves for said sides and the extended ends bent upward and forming stops against which the ends of the body abut, substantially as described.

4. In a railway-sleeper, the combination, with the channel-body and independent base, of an internal wooden block, a chair for holding the rail in position, and the bolt or rivet passing through the chair, body, block, and base, whereby all the parts are held rigidly in position, substantially as described.

5. In a railway-sleeper, the combination, with the channel-body and independent base, of a wooden block fitted in said channel and between the body and base, and a bolt or rivet passing through the body, block, and base for holding the parts rigidly in position, substantially as described.

In testimony that we claim the foregoing as our invention we have signed our names, in presence of two witnesses, this 14th day of November, 1889.

CHARLES DELORME.
EMILE BROCHON.

Witnesses:

R. J. PRESTON,
L. MILLIGE.