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Fig. 5

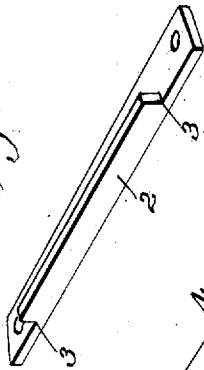


Fig. 6.

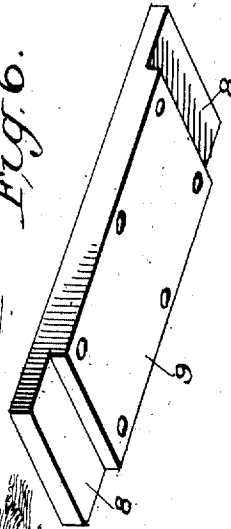
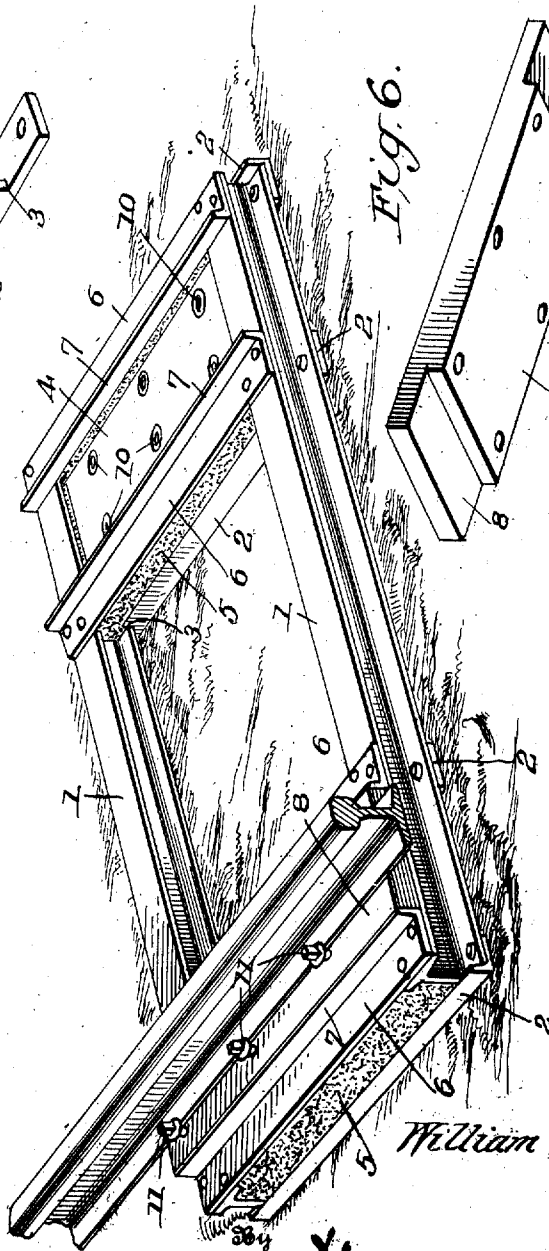


Fig. 1



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2 SHEETS—SHEET 2.

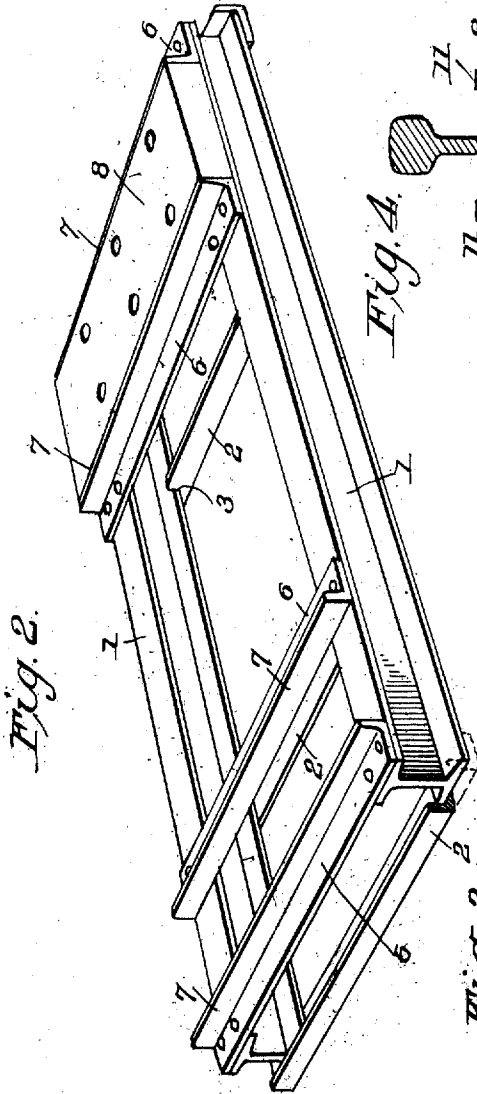


Fig. 2.

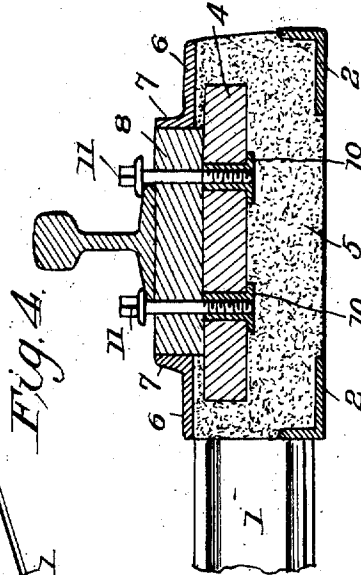


Fig. 4.

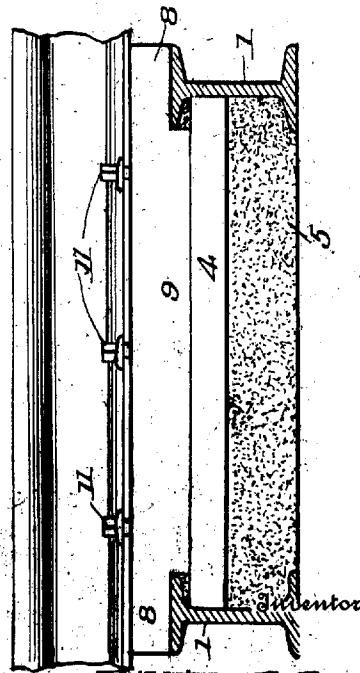


Fig. 3.

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Handwritten: *Handwritten* *Chloromys*

UNITED STATES PATENT OFFICE.

WILLIAM P. DAY, OF CLEVELAND, OHIO, ASSIGNOR TO THE INTERNATIONAL STEEL TIE CO., OF CLEVELAND, OHIO, A CORPORATION.

RAIL-SUPPORT.

1,000,329.

Specification of Letters Patent.

Patented Aug. 8, 1911.

Application filed December 16, 1910. Serial No. 597,688.

To all whom it may concern:

Be it known that I, WILLIAM P. DAY, citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Rail-Supports, of which the following is a specification.

This invention comprehends certain new and useful improvements in composite railway stringers and ties, and relates particularly to cross ties of the insulated type.

The invention has for its primary object a simple, durable and efficient construction of rail support of this character, the parts of which will be few in number in comparison to the strength and rigidity which they impart to the completed tie, which will be capable of being easily assembled, which will be exceedingly durable and serve to support the rails solidly and without danger of sinking at any point or of rocking transversely of the track, the parts being all of standard materials capable of being produced by any well equipped steel mill without the necessity of employing special tools, economies being thereby effected. And the invention also has for its object to generally improve this class of devices and to render them more useful and commercially desirable.

With these and other objects in view, as will more fully appear as the description proceeds, the invention consists in certain constructions, arrangements and combinations of the parts that I shall hereinafter fully describe and claim.

For a full understanding of the invention reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a perspective view of one of my improved combined metallic and concrete insulating railway cross ties, hereinafter termed a rail support as the completed devices each embody a pair of transversely extending beams; Fig. 2 is a similar view, the parts in these two views being shown in partially disassembled relation so as to better illustrate the detailed construction; Fig. 3 is a transverse sectional view through the device, the section being taken along one

of the rails; Fig. 4 is a sectional view at right angles to the section of Fig. 3; Fig. 5 is a perspective view in detail of one of the pillow block retainers; and Fig. 6 is a similar view of one of said blocks.

Corresponding and like parts are referred to in the following description and indicated in all the views of the accompanying drawings by the same reference characters.

Each of my improved rail supports embodies two beams 1 which are preferably formed of steel of any desired cross sectional shape, such as the channeled or I-beams illustrated in the drawings, the device being susceptible of employing beams of any conventional or standard type, as is evident. These beams 1, that are arranged in pairs, as indicated are preferably connected in predetermined spaced relation to each other and rigidly, by end cross bars 2 and intermediate cross bars bearing the same designating reference numeral, riveted or otherwise secured rigidly to the lower flanges of the I-beams 1, the cross bars being all formed of standard angle steel, the vertical flanges of the end cross bars being disposed along the outer ends of the beams 1, and the vertical flanges of the intermediate cross bars extending up between the inner edges of the beams 1 at the bottom thereof, being recessed for this purpose as indicated at 3, so as to produce a rigid skeleton framework. In the further carrying out of my invention, I slip into the ends of this framework lower pillow blocks 4 that are composed preferably of wood or some other insulating substance or material, and then by the use of mold forms of any desired character (not shown) I fill in with concrete 5 the space underneath the blocks 4 and between the adjoining pairs of cross bars 2 and upper block retaining bars 6 which are supported on the upper surfaces of the beams 1 in spaced relation to each other, as shown, being riveted or otherwise rigidly connected to the beams. It will thus be noted that the framework embodies rail supporting concrete blocks 5 connected together rigidly and securely and effectually reinforced by the steel portions of the skeleton framework.

The block retaining bars 6 are also formed

of standard angle steel, the vertical flanges 7 being disposed in spaced relation to each other to receive between them (the bars of each pair being considered), upper preferably detachable pillow blocks 8 that are rabbeted to form intermediate relatively thick portions 9 which are adapted to fit down in between the two opposing or inner edges of the upper flanges of the beams 1, so as to rigidly hold the blocks 9 in place as against any movement in a direction lengthwise of the track or rails.

Preferably, although I do not regard the same as essential within the spirit of my invention, the lower pillow blocks 4 are provided with interiorly threaded bushings 10 that are flanged at their lower ends and that are slipped upwardly into the lower pillow blocks, being held securely therein by the hardened concrete of the blocks 5, the bushings 10 being designed to receive screw spikes 11 to engage the base flanges of the rails.

From the foregoing description in connection with the accompanying drawings, the operation of my improved rail support will be apparent. In the practical use and application of the device, the skeleton steel framework is inverted and the lower pillow blocks 4 are slipped into the same so as to rest on what are then the lowermost flanges of the beams 1. The side forms for the mold are then applied and the concrete poured in to form the end blocks and to securely embed the lower pillow blocks 4 therein, and after the concrete has been sufficiently hardened, the structure is ready to receive the relatively detachable upper pillow blocks 8 that are set down in between the retaining flanges 7 of the cross bars 6 and with the end shoulders of the thickened portion abutting against the inner edges of the then uppermost flanges of the beams 1. The rails are then applied and are secured in place by any fastening devices, such as the screw spikes 11 which pass down through the pillow blocks 8 and preferably into the threaded bushings 10 of the lower pillow blocks 4, the spikes thereby not only serving to secure the rails in place but to effectually bind the upper pillow blocks 8 to the lower pillow blocks 4 that are embedded in the concrete blocks 5.

It will thus be seen that I have produced a very simple and effective reinforced concrete rail holder embodying a pair of beams extending transversely of the track, whereby a maximum percentage of support will be effected, a correspondingly low percentage of suspension for the rails, and extreme solidity and rigidity in all of the parts. The only parts of my improved rail holder that are at all susceptible to deterioration by exposure to the action of the elements

are the upper pillow blocks 8, and it is evident that these can be very cheaply and easily replaced from time to time as required.

While the accompanying drawings illustrate the preferred embodiment of my invention, it is to be understood that the invention is not limited thereto but various changes may be made in the construction, arrangement and proportions of the parts, without departing from the scope of my invention as defined by the appended claims.

Having thus described the invention, what is claimed as new is:

1. A rail support of the character described, embodying spaced beams, cross bars connecting said beams together in spaced relation to each other, the cross bars being arranged in pairs at the ends of the beams, concrete filling the spaces between the cross bars of each pair and the adjoining portions of the beams, and pillow blocks embedded in the concrete.

2. A rail support of the character described, embodying spaced beams, cross bars arranged in pairs at the ends of the beams and holding the same together in spaced relation to each other, retaining cross bars connected to the beams above the first named cross bars, concrete filling the space between the first-named cross bars and the adjoining portions of the beams and the upper cross bars, pillow blocks embedded in the concrete, and rail supporting pillow blocks mounted in the space between the upper retaining cross bars.

3. A rail support of the character described, embodying spaced beams, concrete blocks filling the space between said beams at the ends thereof, retaining bars secured in pairs to the tops of the beams and extending transversely thereof and formed with vertically extending flanges, pillow blocks embedded in the concrete, and upper pillow blocks detachably mounted in between the flanges of the respective pairs of retaining bars, the last-named pillow blocks being formed with thickened lower faces adapted to fit in between the opposing edges of the beams.

4. A rail holder of the character described, embodying channeled beams, angle cross bars arranged in pairs at the ends of the beams and secured to the bottoms thereof and holding the beams in spaced relation to each other, angle retaining bars secured to the beams above the cross bars, concrete filling the space between the beams and between the upper and lower bars, pillow blocks embedded in the concrete, and upper pillow blocks detachably mounted in between the upper bars.

5. A rail holder of the character described, embodying beams held in spaced

relation to each other, concrete filling the
space between the beams at the ends there-
of, lower pillow blocks embedded in the
concrete, interiorly threaded bushings se-
cured in said pillow blocks, and adapted to
5 receive spikes, and upper pillow blocks on
the first-named pillow blocks and adapted
to be secured to the lower pillow blocks by

rail holding spikes inserted in said bush-
ings.

In testimony whereof, I affix my signature
in presence of two witnesses.

WILLIAM P. DAY. [L. s.]

Witnesses:

W. N. WOODSON,

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