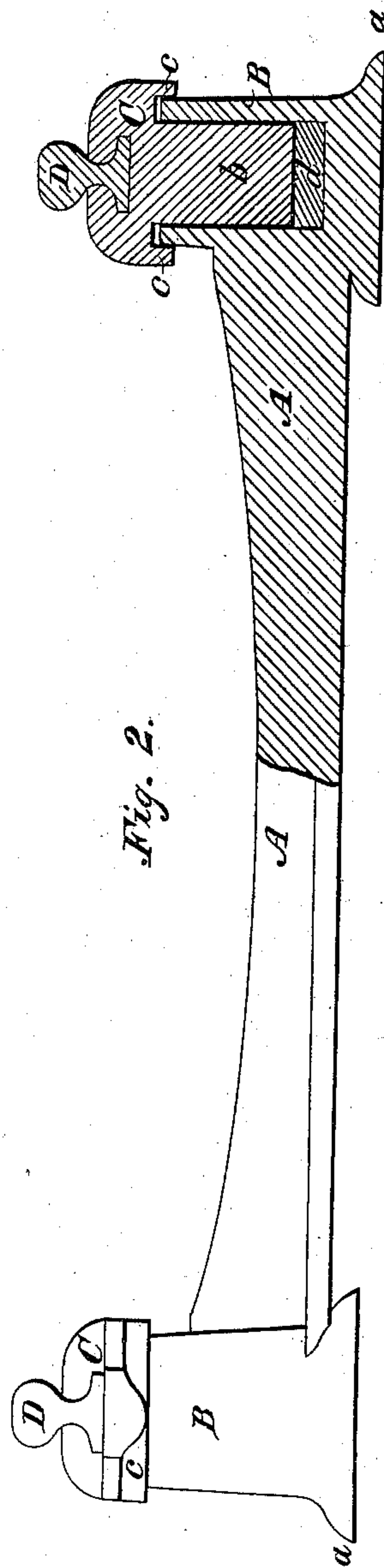
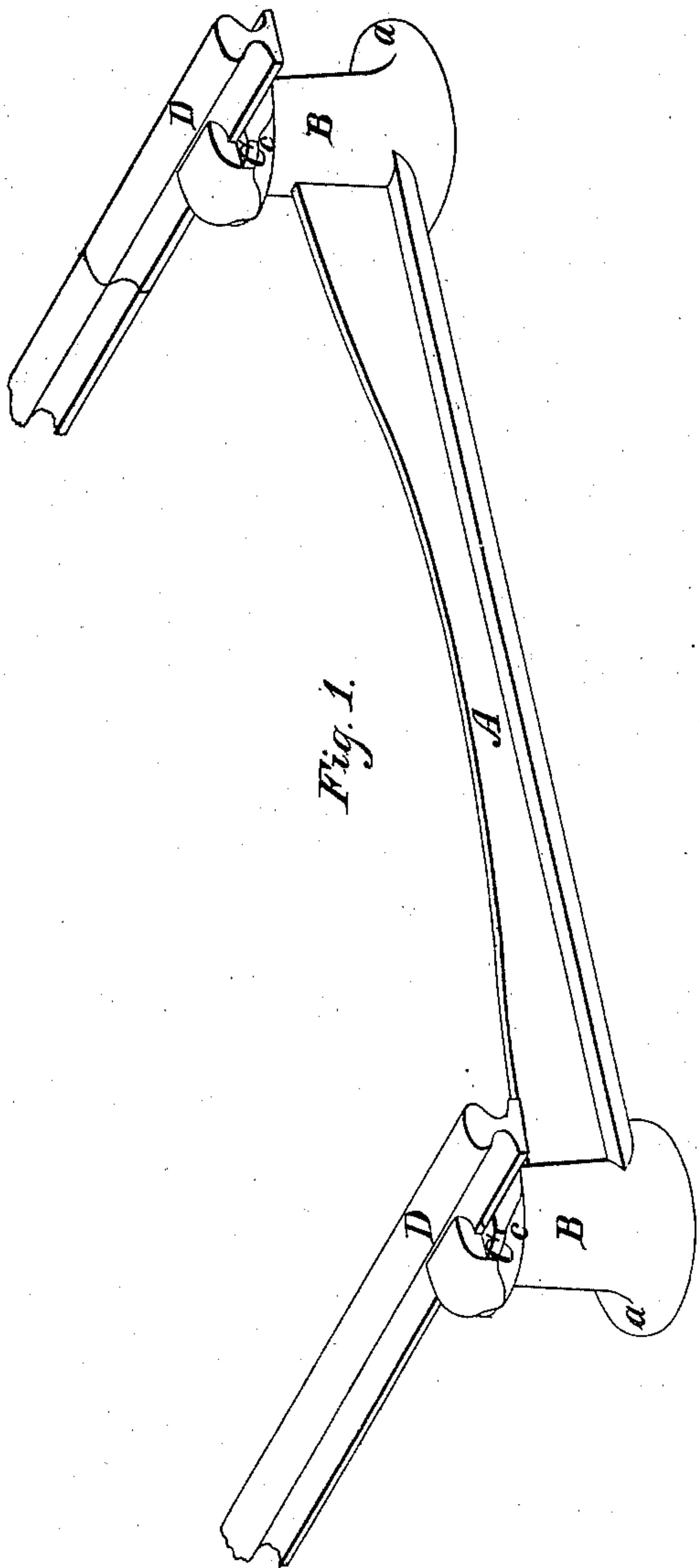


H. CARPENTER.
RAILROAD.

No. 16,898.

Patented Mar. 24, 1857.



UNITED STATES PATENT OFFICE.

HIRAM CARPENTER, OF NEW YORK, N. Y., ASSIGNOR TO AMR. IRON RAILWAY COMPANY.

RAILROAD.

Specification of Letters Patent No. 16,898, dated March 24, 1857.

To all whom it may concern:

Be it known that I, HIRAM CARPENTER, of the city, county, and State of New York, have invented certain new and useful Improvements in the Construction of Railroads; 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, making a part thereof, in which—

Figure 1, represents in perspective a section of a railroad track, built after my plan. Fig. 2 represents an end elevation of the same partly full and partly in section.

Where similar letters of reference occur in the separate figures they denote like parts in both.

The nature of my invention relates to the chair and its support—the object being to make an iron superstructure cheap, durable, and with the requisite spring or yield to the rolling stock, without the use of bolts, keys, &c.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

In practice, a wooden substructure for a rail road track has been found most desirable because of its elasticity, and saving of wear and tear of the rolling stock. But its perishable nature, and constant repair, is a serious objection to its use. A stone or iron substructure to a railroad track, is objectionable on two accounts viz: the first cost of such a structure; and secondly, its rigidity, and unyielding nature, does not admit of a change of the bearing points of the locomotive, and they thus soon wear away. Besides this, it is almost impossible to keep the track keyed up, by anything but screw bolts and nuts (as ordinary spikes or keys will jump out of their seats), and are moreover very expensive.

My object has been to preserve the advantages of the first kind of track mentioned, viz: the cheap and elastic or yielding track, and the durability of the second kind, without its objectionable features. And while I may not have introduced one single new principle into my proposed construction, yet I have combined the useful, and discarded the objectionable features, of railroad tracks as heretofore essayed, and thus produced a permanent and desirable railway, at a

cheaper rate than any iron structure heretofore known, or that possessed the same advantages.

A, represents a cast iron cross tie, composed of a horizontal and a vertical rib, for the sake of lightness and strength. This cross-tie may be of the length nearly, of the ordinary gage of the road where it is to be used, and upon each of its ends is cast a hollow pedestal, pillar or column B, of such height, and diameter, as the character of the road may require; and the base (*a*) of said pedestal, may be enlarged, over its ordinary diameter, to give it better support upon the roadbed—concrete, or block, upon which it is to rest. The pedestals, thus united to the cross-tie, and in place, might be said to be two cylinders—open at their tops, and closed below, and standing under the lines of the rails that form the track. C, C, are two chairs, of peculiar form which are placed in or on said pedestals—a cross section of one of said chairs is shown on the right of Fig. 2, resembling a T in form. The stem or lower part (*b*) of the chair, is made to fit into the hollow portion of the pedestal, and to extend down therein, far enough to admit of one or more pieces of vulcanized rubber *d*, or of alternate disks of rubber and interposed metal washers, between its lower end and the bottom of the cylinder, for the purpose of allowing the chairs to have an elastic seat, and the height of the chair above its pedestal, can be regulated by adding, or taking away, an additional washer or disk, and thus the rails may be elevated, or adjusted, without raising the tie, or support, as is done in tracks of ordinary construction. The upper part of the stem *b*, is surrounded by a flange *c*, which leaves a groove, into which the top of the pedestal projects—said flange, besides the support laterally which it gives to the chair, serving to keep the rain, snow, or dirt from getting into the cylinder or hollow part of the pedestal. The top of the chair is so formed, as to receive and hold the rail D, which is to rest in it, and which may be of any of the well known kinds. It will be perceived that I do not use either spike, bolt, or key, nor need they be used in a track thus constructed, but I wish it understood that, the superfluous use of such spike, bolt, or key, does not invalidate my invention. It will also be readily seen how easy

a track thus constructed can be repaired, as an entire rail, with its chairs can be raised up and out of the way, without drawing a single fastening. And should the joint, or
5 any portion of a rail sink, it can be raised by the introduction of a washer under the stem of the chair. The whole of the structure under the rails, may be of cast iron, and the cost, of wrought iron rods, screw-
10 bolts, spikes, and keys, entirely avoided.

I have represented the pedestals as being hollow, and the stems of the chairs as solid. This may be reversed if found preferable, and the chairs may be hollow and fit over
15 a solid pedestal, in which case the rubber and metal rings or disks would be on top of the pedestal, and a better protection from the weather attained. The amount of play or yield between the chairs and the pedestals
20 may be very slight, and no more than the ordinary spring of a wooden superstructure; and any other yielding material instead of

the rubber may be used to give that elasticity..

Having thus fully described the nature of
my invention, I would state that, I am
aware, a cast iron cross-tie, with chairs at-
tached, is not new nor are cast iron pedestals
new, nor is the interposition of an elastic
material between the rails and their sup-
ports new. All these things have been es-
sayed in some separate form or other, and I
do not claim them separately. But

What I do claim as new, and desire to se-
cure by Letters Patent is—

In combination with the tie and pedestals
cast in one piece, the chairs, so constructed
as to fit in or on said pedestals, and to hold
the rails, without the use of bolts, spikes or
keys, substantially as herein described.

HIRAM CARPENTER.

Witnesses:

A. B. STOUGHTON,
THOS. H. UPPERMAN.