

H. Carpenter, Railroad Track,

N^o 35,198.

Patented May 6, 1862.

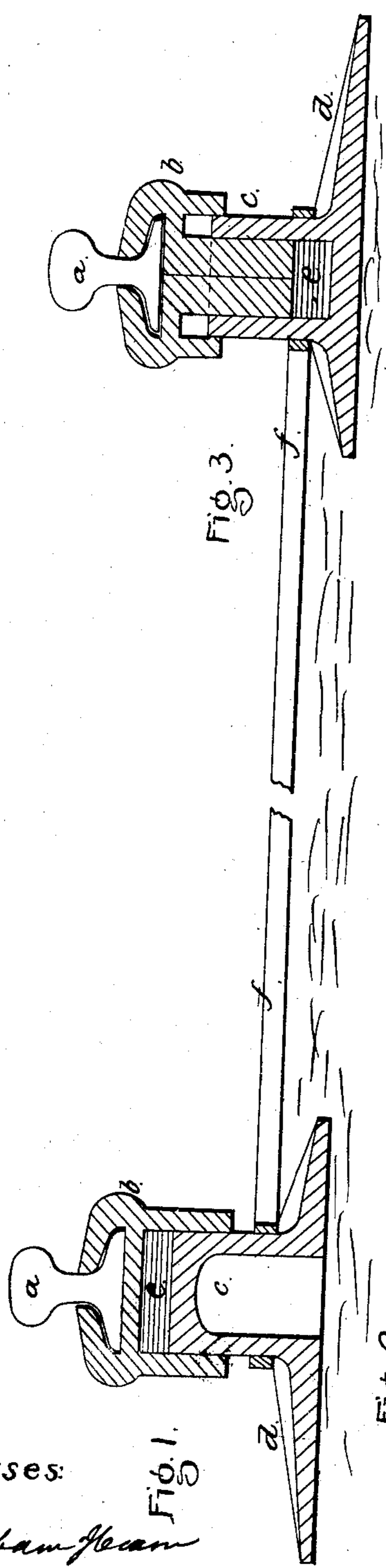


Fig. 3.

Fig. 1.

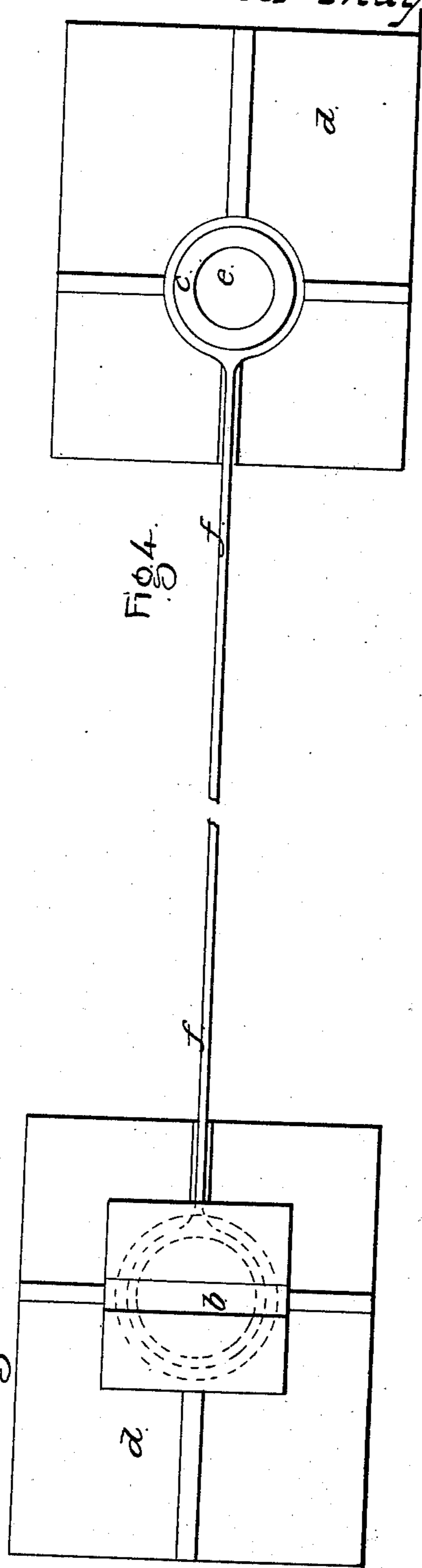


Fig. 4.

Fig. 2.

Witnesses:
Dunham Heath
My Limbu Hall.

Inventor:
H. Carpenter

UNITED STATES PATENT OFFICE.

HIRAM CARPENTER, OF NEW YORK, N. Y., ASSIGNOR TO HENRY V. GAHAGAN,
OF SAME PLACE.

IMPROVEMENT IN THE CONSTRUCTION OF RAILWAYS.

Specification forming part of Letters Patent No. 35,198, dated May 6, 1862.

To all whom it may concern:

Be it known that I, HIRAM CARPENTER, of the city, county, and State of New York, have invented a new and useful Improvement in the Construction of Railways; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, and to the letters of reference marked thereon.

A large portion of the expense of maintaining the permanent way of a railway is devoted to the supervision of the fastenings of the rails and the chairs, and to the renewal of the bolts, treenails, and keys that is so constantly required. The object of my invention is to connect the cross-ties, sleepers or pedestals, and chairs and rails in such a way that they will constitute a complete and well-secured system without the intervention of any bolts or keys, or any other fastenings whatever; and it consists in fitting the cross-ties and pedestals together with a socket or lock joint, and in combining them with chairs that conform to the section of the rails and hold them securely without the usual taper keys or wedges. To prevent the injury incident to concussion upon a perfectly-rigid support, I interpose india-rubber or other elastic material between the parts in such a manner that it is easy of access and permits the adjustment of the track without disturbing the pedestals or ballasting of the roadway.

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

Figure 1 is a vertical section of my invention, showing the combination which I prefer to use to support the rail constituting one side of a railway, and Fig. 2 is a plan of the same. Fig. 3 is also a vertical section of the same combination of parts arranged in a different manner, and Fig. 4 is a plan of the same with the chair removed.

The same letters refer to similar parts in the various figures.

The rails *a* are held in the jaws of the chairs *b*, that fit over or into the cylinders *c* of the pedestals *d*, with a piece of india-rubber, *e*, interposed. The pedestals are held in gage

by the cross-tie *f*, extending between them. The pedestals are cast with a broad base of sufficient extent to sustain any weight that may be placed upon them. The cross-tie *f* is formed with an eye at each end that may be expanded by heat and shrunk on the cylindrical portion of the pedestal. The jaws of the chairs are shaped in conformity with the section of the rails they are to hold, and they may be fitted either over or into the cylindrical portion of the pedestal. The elastic material is of vulcanized india-rubber or other suitable material made of several thicknesses or washers, and it may be placed either under the center or the edges of the chair. When the shanks of the chairs are fitted into the cylinders of the pedestals the chairs may be made in halves that jam upon the rails with any force desired. In this latter arrangement, as is represented more particularly in Fig. 3, the exterior flange of the chair covers the top of the pedestal and excludes the dust.

Having thus described the two methods of constructing and operating my invention which I prefer to adopt, I would here state that the arrangement of the various parts may be modified without departing from the spirit of my invention, which consists in combining them to form a railway without requiring the use of bolts, keys, or other fastenings, and includes any arrangement similar to that which I have described, although superfluous fastenings may be added thereto.

In countries where wood is cheap a wooden substructure has been found desirable on account of its elasticity and saving of wear and tear to the rolling-stock; but its want of durability occasions a constant expenditure for repairs and renewals that balances the original economy of construction; and although a substructure of iron or stone has seemed superior on account of the durability of the material, the rigidity of the bearings has rendered their parts especially liable to the prejudicial effects of concussion, and it has been found difficult and expensive to keep the various parts sufficiently and effectively fastened.

The system of construction which I have invented and described imparts sufficient elasticity to the track, and combines the parts of

which it is composed without the fastenings that are necessarily employed in other systems and that are so expensive to furnish and maintain. The readiness with which repairs may be effected is another valuable feature of my invention. An entire rail may be raised to adjust the level of the track by regulating the thickness or number of the india-rubber washers or disks, or by interposing ordinary metal washers, and it may be completely removed and replaced without disturbing the pedestals, ties, or ballasting. As I prefer to confine the bearing-surface to the pedestals, which are of cast iron, and to use merely a small wrought-iron tie to retain them in position and gage, the first cost of this permanent way is considerably less than that of any other in use which requires the employment of costly fastenings that are, moreover, the source of constant expense for maintenance; and it is also of especial advantage that it may be gradually applied and introduced in effecting the repairs of a road of the ordinary construction, as each tie and pair of pedestals is

complete and perfect in itself, and is as effective when used in connection with any other means of support for the rails as it would be if combined with a series of others similar to itself.

These special and valuable features of economy of construction and maintenance and readiness of adaptation to renewals of other systems are not occasioned by any of the various component parts separately considered, but are the result of their combination in the manner I have invented and described.

I claim, therefore, as my invention, and desire to secure by Letters Patent—

The combination of the pedestals with wrought-iron cross-ties and chairs, or their equivalents, and either with or without the addition of any elastic material, substantially in the manner described, and for the purpose specified.

HIRAM CARPENTER.

Witnesses:

DUNHAM J. CRAIN,
WM. KEMBLE HALL,