

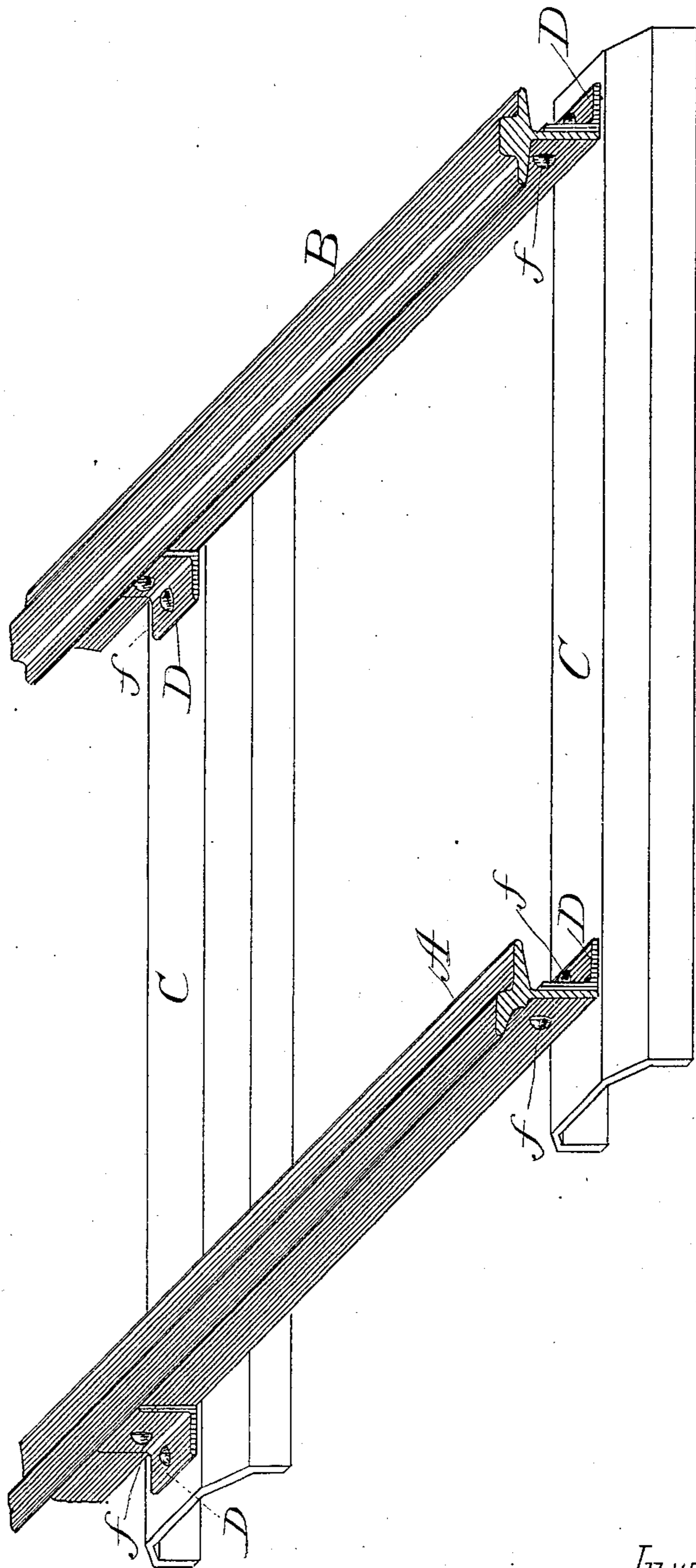
(No Model.)

A. J. MOXHAM.

MEANS FOR SECURING GIRDER RAILS IN TRACK.

No. 313,512.

Patented Mar. 10, 1885.



Witnesses.

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MEANS FOR SECURING GIRDER-RAILS IN TRACK.

SPECIFICATION forming part of Letters Patent No. 313,512, dated March 10, 1885.

Application filed June 14, 1884. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR J. MOXHAM, of Johnstown, in the county of Cambria and State of Pennsylvania, have invented a new and useful Means of Securing Girder-Rails in Track, which invention or improvement is fully set forth and illustrated in the following specification and accompanying drawing.

The object of this invention is to simplify the construction and cheapen the cost of laying railroad girder-rails in track, principally for street or tram cars.

The invention consists of the parts herein-after described, as specifically set forth in the claim.

In the accompanying drawing are shown in perspective two forms of rails laid in track upon metal cross-ties. In said drawing the letter A indicates a side-bearing girder-rail, and B a center-bearing girder-rail; C, the cross-ties, of cast or rolled iron or other suitable metal; D, L-shaped metal chairs of rolled steel or iron. Said chairs are secured to the webs of the rails and to the cross-ties on alternate sides of the rails, as shown in the drawing, by bolts or rivets *f*. The rails, both A and B, it will be observed, are shown devoid of lower flanges, the depth of vertical web being so regulated as to provide for necessary stiffness of rail and depth enough for any possible setting of the cross-ties below the surface of the ground or street. The utility of this construction and the objects to be secured thereby will now be more fully set forth.

In rolling girder-rails with wide lower flanges it has been found very difficult and costly to properly secure the desired perfection of rail, if at the same time such a width of head is demanded as shall meet the requirements of modern American practice. A rail devoid of lower flanges can, however, be easily and perfectly rolled having any desired width of head. Such a rail can also be readily rolled with any depth of web that may be necessary for stiffness, as well as for sinking the cross-ties to any required distance below the surface of the ground or street without increasing the weight of the rail, for the material otherwise put in the lower flanges can be transposed into the increased depth of web imparted for the said purpose. It is manifestly better and cheaper, therefore, to roll the web

of such a rail perfectly straight or flush on its sides—that is, devoid of either lugs, fillets, or bevels of any description—than to provide the rolls or plant necessary to their formation. It is obvious, however, that with such form of rail the chair or other device which must be provided to replace the lower flanges—through which girder rails are usually secured to the cross-ties or sleepers—must be fastened directly to the web of the rail; hence the use of the plain angle-chair of L shape shown in the drawing, made of rolled steel or iron riveted to the web of the rail, offers many advantages, among which are the following:

First. The shape of said angle-chair is such as is extensively used in every-day mechanical constructions for other purposes; hence said pieces can always be obtained in the market at regularly-quoted and low prices. It is furthermore well known that every little change from well-established merchantable forms requires new and costly rolls for such manufacture, and that by thus interfering with regular and accustomed work turned out by the rolling-mills such departures require an enhanced or comparatively high market-price to justify their manufacture.

Second. By “staggering” the chairs or changing the location of said angle-pieces at each cross-tie, as shown in the drawing, to alternate sides of the web of the rail, all the advantages of a T-base are secured to the system at a considerably-reduced weight, and therefore considerably-reduced cost.

Third. It frequently happens, as on a curve and in gravelly road-beds or unpaved streets, where the street or road outside of the rails is subjected to rapid cutting away or destruction by street-vehicles, and the rails thereby left unprotected or unsupported by the road-bed, that the yielding of the rail is entirely in one direction. In such cases the base of resistance can be so located by the use of these L-chairs as to meet such thrust, and the otherwise useless metal on the opposite side be thus dispensed with.

Fourth. When using metal stringers or metal sleepers or cross-ties, as shown in the drawing, said angle-chairs or L-chairs offer special advantages of economy. In such cases the strength of the union between the rail and stringer or cross-tie can be made entirely de-

pendent upon the strength of the rivets or bolts. Manifestly a wide base is not in such case needed for the rail. In such the cross-tie itself becomes the base; hence in this case
5 a narrow L-piece can be used. When timber cross-ties are used, where the connection between the rail and cross-tie depends upon a spike, the measure of the strength of union
10 between the rail and cross-tie is only the adhesion of the fibers of the timber to the spike, and the consequent resistance to pulling out of the spike so long as the tensile strength of the bolt or rivet retains the union between
15 the web of the rail and the angle-chair. With timber cross-ties, therefore, a wider base of rail may be required. Such change in width of base, however, as may be demanded by special circumstances, can be readily and economically made without departing from the
20 principle of this invention. While this invention, therefore, offers every advantage of the

plain vertical web of flush sides, it also affords similar advantages in those cases where small offsets, fillets, or lugs are left at the bottom of the webs of the rails for the purpose
25 of more effectually splicing or fishing the joints of the rails in track.

Having thus fully described my said improvements as of my invention, I claim—

In combination with a railroad girder-rail
30 of either center-bearing or side-bearing head and devoid of wide lower flanges, a series of L-shaped or angle chairs of rolled metal secured to the web of said rail on alternate sides thereof, and connecting the same to the cross-
35 ties or stringers of the track through a bottom flange only, substantially as and for the purposes set forth.

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Witnesses:

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