

(No Model.)

A. J. MOXHAM.

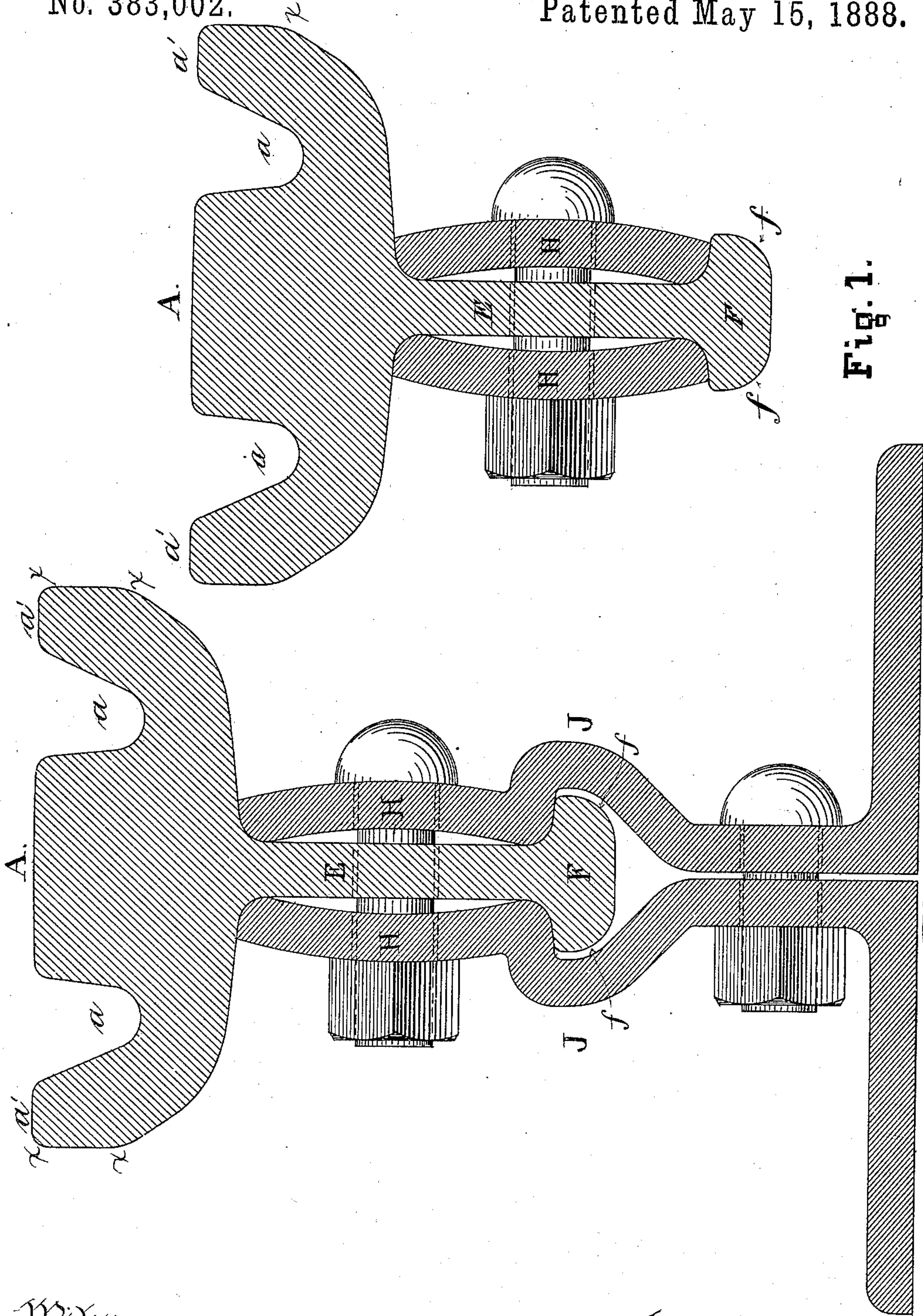
DOUBLE GROOVED GIRDER RAIL.

No. 383,002.

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Fig. 1.

Fig. 2.



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## DOUBLE-GROOVED GIRDER-RAIL.

SPECIFICATION forming part of Letters Patent No. 383,002, dated May 15, 1888.

Application filed November 20, 1885. Serial No. 183,405. (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 Improvement in Double-Grooved Girder-Rails for Street-Car Tracks, which improvement or invention is fully set forth and illustrated in the following specification and accompanying drawings.

10 The object of this invention is to make a street-car rail which, while inviting street-vehicle traffic upon the track in which it is laid, shall at the same time exclude the tires of the vehicles engaged in such traffic from entering  
15 the grooves in such rails, and also maintain the grooves wherein the flanges of the car-wheels run less encumbered or filled with the dirt and refuse material of the street than is the case with the single groove, and shall also admit of  
20 a close fitting of the paving thereto.

The invention will first be described in connection with the accompanying drawings, and then be specifically set forth in the claim.

25 In said drawings, Figure 1 is a transverse section of a double-grooved girder-rail, showing ordinary splice-bars, also in similar section and bolted thereto for uniting such rails at their joints in track. Fig. 2 is a similar section showing such double-grooved rail secured  
30 in track by a specially-formed chair, also in cross-section.

In said figures the several parts of the rail are indicated by letters as follows:

35 A indicates the head of the rail. *a a* indicate grooves on each side of the same, and *a' a'* parts of the head exterior to said grooves.

40 The web E of the rail terminates below in a stub, F, said web in Fig. 2 being bolted to the chair J J through its portion H H, as shown in the drawings, the two sides J J being bolted together below the stub F.

In Fig. 1 splice-bars H H are shown bolted to the web E, no kind of a chair being shown.

45 The grooves *a a* on each side of the head A of the rail are of sufficient depth to provide for the wear of the upper surface of the rail without bringing the flanges of the car-wheels very soon in contact with the bottom of either groove in which said flanges may happen to run. Said  
50 grooves have also sufficient width to permit of the easy passage therein of the flanges of the car-wheels without at the same time allowing

the tires of street-vehicles to drop or run therein—say seven-eighths of an inch wide at top, one-half inch wide at bottom, and seven-eighths  
55 of an inch deep.

The advantage of this double-grooved girder-rail, additional to those of the single-groove rail for which I have herewith filed an application for Letters Patent, will now be set forth. 60

With all street-rails, where laid with their heads in immediate contact with the street surface or paving, it has been found by experience that such contact induces the accumulation of dirt upon the heads, and thus causes or necessitates heavy pulling. By the use of these  
65 double grooves *a a*, however, a portion of the head is provided on each side in immediate contact with the street-surface, leaving a central portion—the portion utilized by the tread of the car-wheels—away from or out of such contact, thus to such extent preventing the accumulation of dirt upon the head proper of the rail. It will also be observed that the exterior portions, *a a'*, of the head of the rail are  
75 formed with straight vertical sides, as between the points *x x*. This is of importance in making a neat and close fit between the head of the rail and the paving-blocks of the street, preventing wear of the street-surface into ruts or  
80 grooves at such joints by the wheels of the street-vehicles, and conducing to smoothness of travel over said rails. Where the single groove is used the accumulations of dirt on the head of the rail are worked into such groove  
85 and render frequent cleaning or clearing of the same necessary; but with the use of the double groove, the flanges of the car-wheels being on but one side and filling the groove on such side, rotation of the wheels tends to throw the  
90 dirt into the other groove. When the accumulations are from the street-surface in ordinary weather, this action decreases such evil of filled-up grooves by one-half; but in cold freezing weather, when accumulations of ice and snow  
95 are found a more serious evil, the advantages are even still greater and more apparent, for the double groove will then afford such temporary relief as to frequently bridge over the time until a thaw sets in, when the work of any  
100 necessary clearing of the grooves will of course be rendered much less difficult and costly and more speedy.

This type of double-groove rail will be most



favorably suited to large cities with crowded thoroughfares, where the street-paving is generally kept in good repair. Practical experience, supported by statistics, proves that the wear occasioned by street-vehicles is much greater than that occasioned by the street-car-wheel travel, the traffic of the loaded street-vehicles being much heavier than that of the passenger-cars. By providing, therefore, the double grooves in the head of the rail, the exterior parts, *a' a'*, of the head are caused to equally or equitably distribute over both sides of the head the whole of the street-vehicle traffic, and thus render the wear upon the head as uniform as possible.

The stub *F* at the lower end of the web, inclining rapidly away at the points *ff*, permits of the use of a chair which, while embracing said stub over its top edges, is of such form as to secure ample strength for all purposes of a chair.

The chair shown in the drawings forms no part of this invention.

Having thus fully described my said improvement in double-grooved girder-rails, as of my invention I claim—

A street-car girder-rail of the form substantially as illustrated in the accompanying drawings, consisting of a vertical central web terminating at bottom in a double-shouldered stub or bead, as *F*, and at top in a flat head having a center bearing portion for the tread of the car-wheels, grooves on each side thereof for the flanges of said wheels, and exterior portions, as *a' a'*, on the outer sides of said grooves, provided with straight sides between points *x*, substantially as and for the purposes set forth.

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