(No Model.)

G. A. HUBEN.

TROLLEY FOR ELECTRIC RAILWAYS.

No. 507,733. Patented Oct. 31, 1893.

Fig. 2

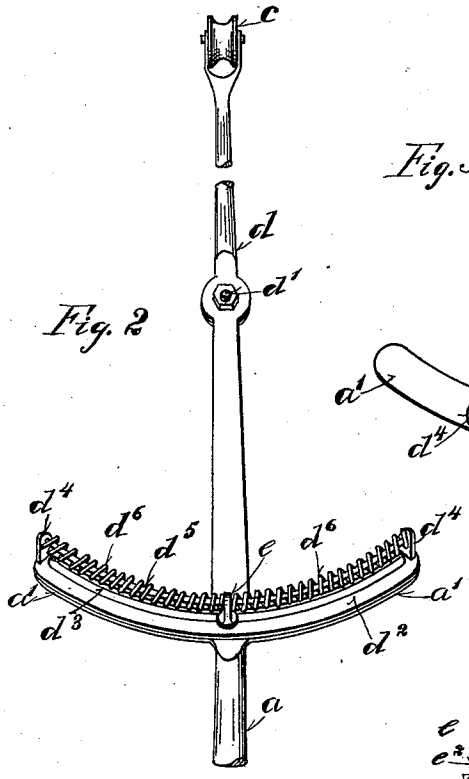

Fig. 3

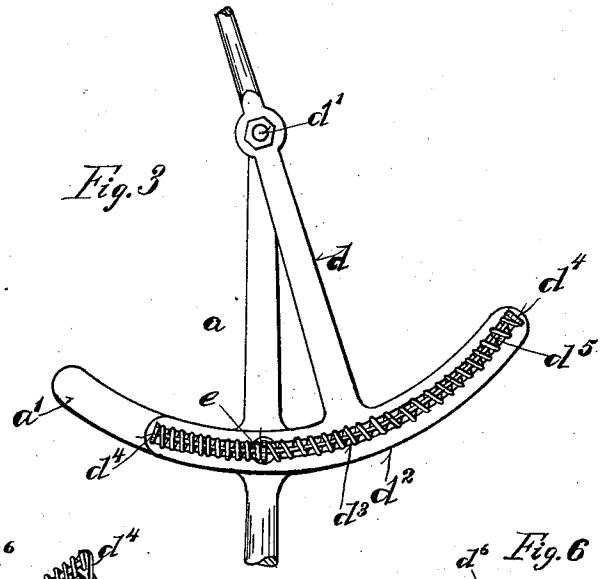

Fig. 6

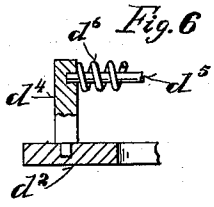

Fig. 5

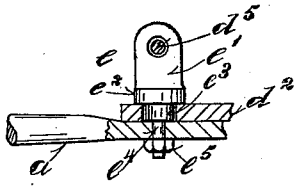

Fig. 4

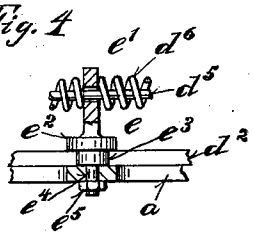

Fig. 1

WITNESSES:

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TROLLEY FOR ELECTRIC RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 507,733, dated October 31, 1893.

Application filed July 29, 1893. Serial No. 481,811. (No model.)

To all whom it may concern:

Be it known that I, GUSTAVUS A. HUBEN, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented a certain new and useful Improvement in Trolleys for Electric Railways, of which the following is a specification.

My invention relates to improvements in trolleys for electric railways; and the object of my invention is to provide a trolley which is adapted to readily adjust itself to the change of direction of the car, to which the trolley is attached, in passing curves or switches; the construction being such that the trolley wheel will stand in the proper relative position with reference to the trolley wire so as to properly contact therewith at all times. I attain these objects by the constructions shown in the accompanying drawings, in which—

Figure 1 is a side elevation of a portion of a trolley embodying my invention. Fig. 2 is a partial plan view of the same. Fig. 3 is a similar view, showing different positions of adjustment. Figs. 4 to 6 inclusive, are detail views of the same.

Like parts are represented by similar letters of reference in the several views.

In the said drawings *a*, represents an ordinary trolley arm or pole; *b*, is the trolley wire, and *c*, the trolley wheel adapted to contact therewith. The trolley wheel or contacting device *c*, instead of being mounted on the trolley arm *a*, is mounted on an auxiliary supporting arm or lever *d*, which is pivoted at d', to the arm or pole *a*. This auxiliary arm or lever *d*, is extended backwardly from the pivotal point d', and is provided at its rear end with a curved segmental base d^2, having therein a curved slotted opening d^3, extending throughout the greater portion of said base; said slotted opening and base being formed on the arc of a circle, having its center at the pivotal point d'. This base d^2, carries at or near each end upwardly projecting lugs d^4, in which are secured the opposite ends of a curved supporting rod d^5, also formed on the curve struck from the center d'.

The trolley pole or arm *a*, is provided on opposite sides with projecting portions a', corresponding in shape and size to the base d^3. The arm *a*, is further provided with an upwardly projecting stud or post *e*, the upper portion of which is formed in the nature of a lug or ear e', perforated to receive the curved rod d^5. Below the ear or lug e', the post *e*, is provided with a projecting flange e^2, and below this with a reduced portion e^3, adapted to fit in the slotted opening d^3, of the base d^2; a screw-threaded projection e^4, at the bottom of the post, being adapted to extend through the arm or pole *a*, and be secured thereto by means of a nut or other suitable fastening device e^5. Mounted on the curved rod d^5, and arranged on opposite sides of the post *e*, are springs d^6, each of which bears at one end against the post *e*, and at the opposite end against one of the lugs d^4. The result of this construction is that the auxiliary arm *d*, is normally held in line with the main arm or pole *a*. At the same time the auxiliary arm is capable of a yielding movement in either direction on the pivotal center d', which permits the trolley wheel to readily adjust itself to any angle which the trolley wire may assume, so as to run squarely thereon; the main supporting arm or pole *a*, assuming the proper relative angle with reference to the auxiliary arm to compensate therefor; the parts being returned to their normal positions as soon as the pole or arm assumes a parallel direction to that of the trolley wire.

It will be seen that the parts above described are at once simple in their construction and efficient in operation. The post *e*, serves the double purpose of a guide and means of attachment between the main arm and the auxiliary arm, and the curved supporting rod retains the springs in their proper position and at the same time forms an additional guide through the supporting post, which causes the springs to exert the pressure in the proper direction in any position of adjustment which the parts may assume.

Having thus described my invention, I claim—

1. As an improvement in trolleys, the combination with the main arm or pole, an auxiliary pivoted arm connected thereto and carrying the trolley wheel or contacting device, projections on said trolley arm, said auxiliary arm being provided with a curved base formed on a radius from the pivotal center, a slotted opening in said base, a projecting post from said trolley arm adapted to pass through said

slotted opening, said post being perforated to receive a curved supporting rod, springs on opposite sides of said post and supported by said curved rod, substantially as specified.

2. The combination with the trolley arm or pole, of the auxiliary arm pivoted thereto, and a backwardly extending portion having a curved base, a projecting post connected to said main arm or pole and adapted to form a guide for said curved base, a curved supporting rod passing through said post, projections on opposite ends of said base to support the ends of said curved rod, and springs arranged on said rod and interposed between the said projecting post and said supporting projections, substantially as specified.

GUSTAVUS A. HUBEN.

In presence of—
OLIVER H. MILLER,
FRANK WATT.