

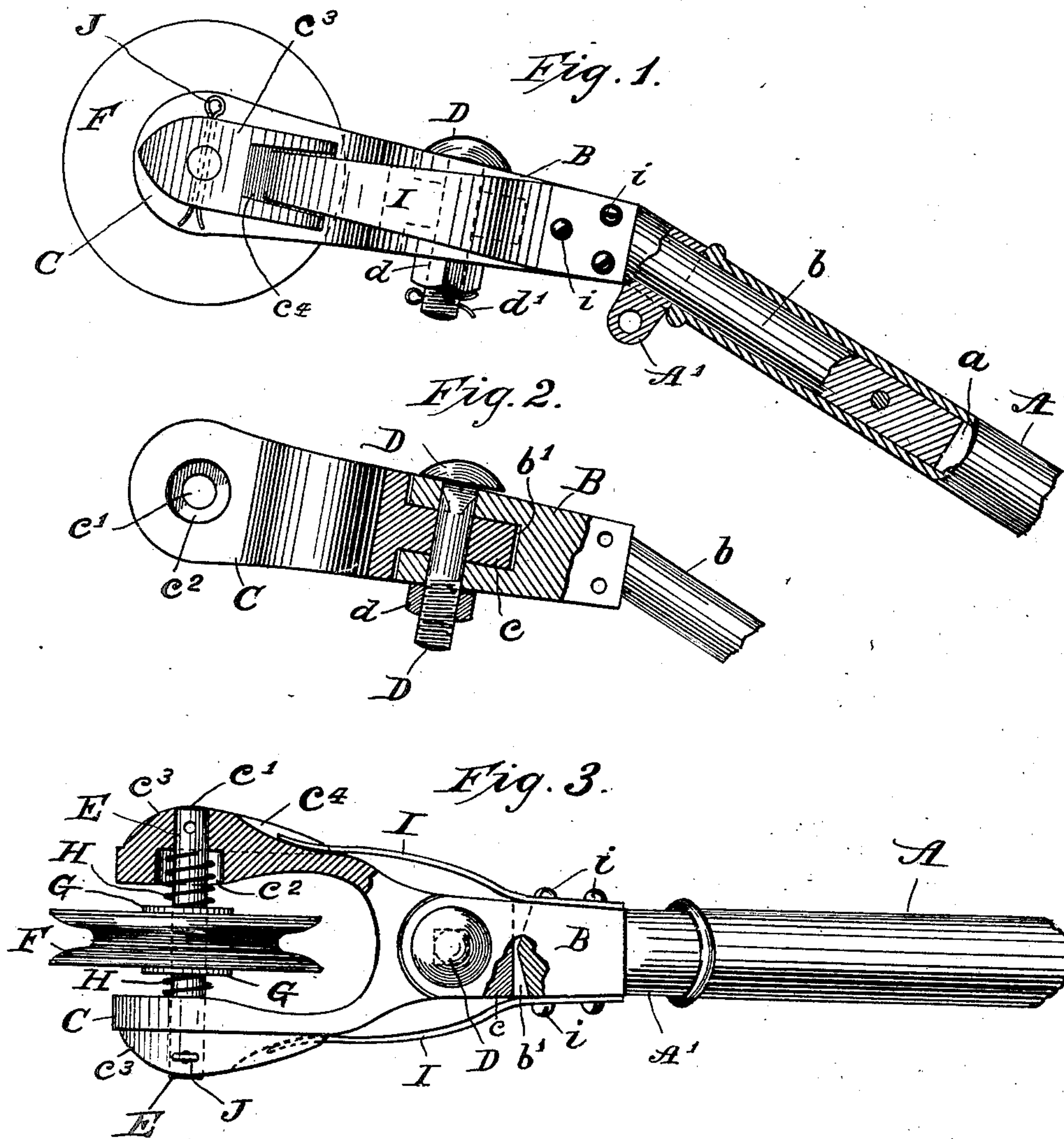
No. 657,637.

S. BOURGEOIS  
TROLLEY HEAD.

Patented Sept. 11, 1900.

(Application filed Apr. 10, 1900.)

(No Model.)



Witnesses

*A. B. Thoms.*

*Rayard C. Ryder.*

Inventor

*Stanislas Bourgeois*

By his Attorney

*J. B. Thurston*



# UNITED STATES PATENT OFFICE.

STANISLAS BOURGEOIS, OF MANCHESTER, NEW HAMPSHIRE.

## TROLLEY-HEAD.

SPECIFICATION forming part of Letters Patent No. 657,637, dated September 11, 1900.

Application filed April 10, 1900. Serial No. 12,306. (No model.)

*To all whom it may concern:*

Be it known that I, STANISLAS BOURGEOIS, a citizen of Great Britain, residing at Manchester, in the county of Hillsborough and State of New Hampshire, have invented certain new and useful Improvements in Trolley-Heads; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates especially to the trolley-head or yoke in which is mounted the trolley-wheel at the outer end of a trolley-pole, the object being, first, to so improve the construction of a trolley-head that the trolley-wheel shall be rendered less liable to leave the trolley wire, or conductor while a car passes around a curve, and, second, to provide more durable and improved means for the free lateral movement of the trolley-wheel within the yoke of the trolley-head.

As the common length of a trolley-pole is such that the free end of said pole extends more or less beyond the rear end of an ordinary car the trolley-wheel is of necessity at an angle with the trolley-wire when the car passes around a curve or upon a turn-out, and the tendency at such time is greatly in favor of the wheel jumping the wire; but if the trolley-wheel could adjust itself somewhat to the required angle under such circumstances much annoyance and trouble would thus be avoided and a saving of time and power effected.

To this end my invention consists in so improving the construction of a trolley-head that the trolley-wheel mounted therein may adjust itself to the angle of a trolley-wire with which it may be in contact, even though said wire may be at an angle with said trolley-pole, as will be fully set forth in the following specification and claims and clearly illustrated in the drawings accompanying and forming a part of the same, of which—

Figure 1 is a broken elevation showing a portion of a trolley-pole to which is attached my improved laterally-adjustable trolley-head, carrying a trolley-wheel. Fig. 2 is a sectional elevation of my improved trolley-head. Fig. 3 is a broken plan view of the parts shown in Fig. 1.

Similar reference-letters denote corresponding parts in all the views.

A is a trolley-pole, into which, as at *a*, is inserted the stem *b* of the trolley-head B.

A' is an eye to which the usual stay-cord may be attached.

C is the yoke, having a tongue *c* adapted to enter a recess *b'*, formed for the purpose in the trolley-head B, as shown in Fig. 2, wherein said tongue is shown to be secured within the recess in the head by a bolt D, to which is threaded a nut *d*, a split pin *d'* being passed through the bolt, if desired, to prevent the accidental displacement of said nut. The yoke is perforated, as at *c'*, to receive a stud E, on which is mounted the trolley-wheel F, and on each side of said trolley-wheel upon the stud E is mounted a collar G and a helical spring H. The inner surfaces of the yoke C are recessed, as at *c''*, for the reception of one end of either spring H, the springs operating expansively against the collars G for holding the trolley-wheel normally in a central position within the yoke; but at the same time said trolley-wheel is permitted any required lateral play within the yoke, the collars preventing the springs from coming directly in contact with and wearing into the sides of the trolley-wheel, as frequently occurs when the common form of spring is used. Projections *c'''* are formed, one on each outer side of the yoke C, and these are recessed at *c''''* for the reception of either end of the side springs I, said springs being secured at their opposite ends by rivets or screws *i* to the sides of the trolley-head B, as shown in Figs. 1 and 3, the object of said springs I being to maintain the yoke normally in alinement with the trolley head and pole and to insure the return of said yoke to its normal position after it has been swung to either side to accommodate the trolley-wheel to a wire which may be at an angle with one under which the other end of the pole may be disposed. The lateral movement of said yoke may be limited by the form of the seat of the recess *b'* of the trolley-head B, with which the end of the tongue *c* may come in contact, as shown in Fig. 3. J represents split pins by which the stud E may be retained in its perforations in the yoke.

If the trolley-head should be in alinement



with the pole, as is ordinarily the case, and the yoke carrying the trolley-wheel be pivotally attached to the said head, the trolley would have as strong a tendency to jump the trolley-wire as if the yoke and head were not pivotally connected, and thus defeat the real purpose of my invention on account of said yoke and trolley-wheel assuming a vertical angle with the trolley-wire when running on a portion of wire at an angle with the pole; but by joining the trolley-head to the pole at such an angle as to cause the former to rest substantially on a horizontal plane when the pole is in its normal position, which can be easily accomplished by forming the stud *b* at an angle with the trolley-head *B*, as shown in the drawings, the pivotal connection of the yoke *C* with the head *B* may be as nearly as possible horizontal, and hence the wheel *F* is maintained in a vertical position while bearing against the trolley-wire and following the varying angles in the same, thus avoiding any liability to jump off, which it would otherwise be likely to do.

Having described my improvements, what I claim is—

1. An electric trolley-pole provided with a trolley-head disposed at an angle with said pole and substantially upon a horizontal plane, an oscillatory yoke pivotally attached to said head, and a trolley-wheel mounted in said yoke.

2. An electric trolley-pole provided with a trolley-head disposed at an angle with said pole and substantially upon a horizontal plane, a laterally-oscillating yoke pivoted to said head, a trolley-wheel mounted in said yoke, and means for limiting the oscillating movement of said yoke.

3. In an electric trolley-pole, a trolley-head

disposed at an angle with said pole and substantially upon a horizontal plane and provided with a laterally-oscillating yoke, a trolley-wheel mounted in the yoke, and means comprising springs attached to said trolley-head and adapted to bear against opposite sides of said yoke whereby the latter is held normally in alinement with said trolley-pole.

4. A trolley-head disposed at an angle with said pole and substantially upon a horizontal plane and provided with a pivoted yoke, springs for maintaining said yoke normally in alinement with said head, and means within the pivoted connection of said parts for limiting the lateral movement of said head.

5. A trolley-head disposed at an angle with said pole and substantially upon a horizontal plane and provided with a pivoted yoke, a trolley-wheel mounted within the yoke, springs for maintaining said yoke normally in alinement with said head, a collar and helical spring mounted at each side of the trolley-wheel upon its pivot-pin, and means within the pivoted connection of said yoke and head for limiting the lateral movement of the yoke.

6. In an electric trolley-pole, a trolley-head disposed at an angle with said pole and substantially upon a horizontal plane and provided with a laterally-oscillating yoke, a trolley-wheel mounted in said yoke, a spring attached to each side of said trolley-head, and a recess formed in each side of said yoke adapted to receive the free end of either spring, substantially for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

STANISLAS BOURGEOIS.

Witnesses:

J. B. THURSTON,

SHERMAN E. BURROUGHS.