

No. 736,610.

PATENTED AUG. 18, 1903.

L. LAVAGNE & L. BERTRAND.
TROLLEY.

APPLICATION FILED FEB. 21, 1902.

NO MODEL.

FIG. 1.

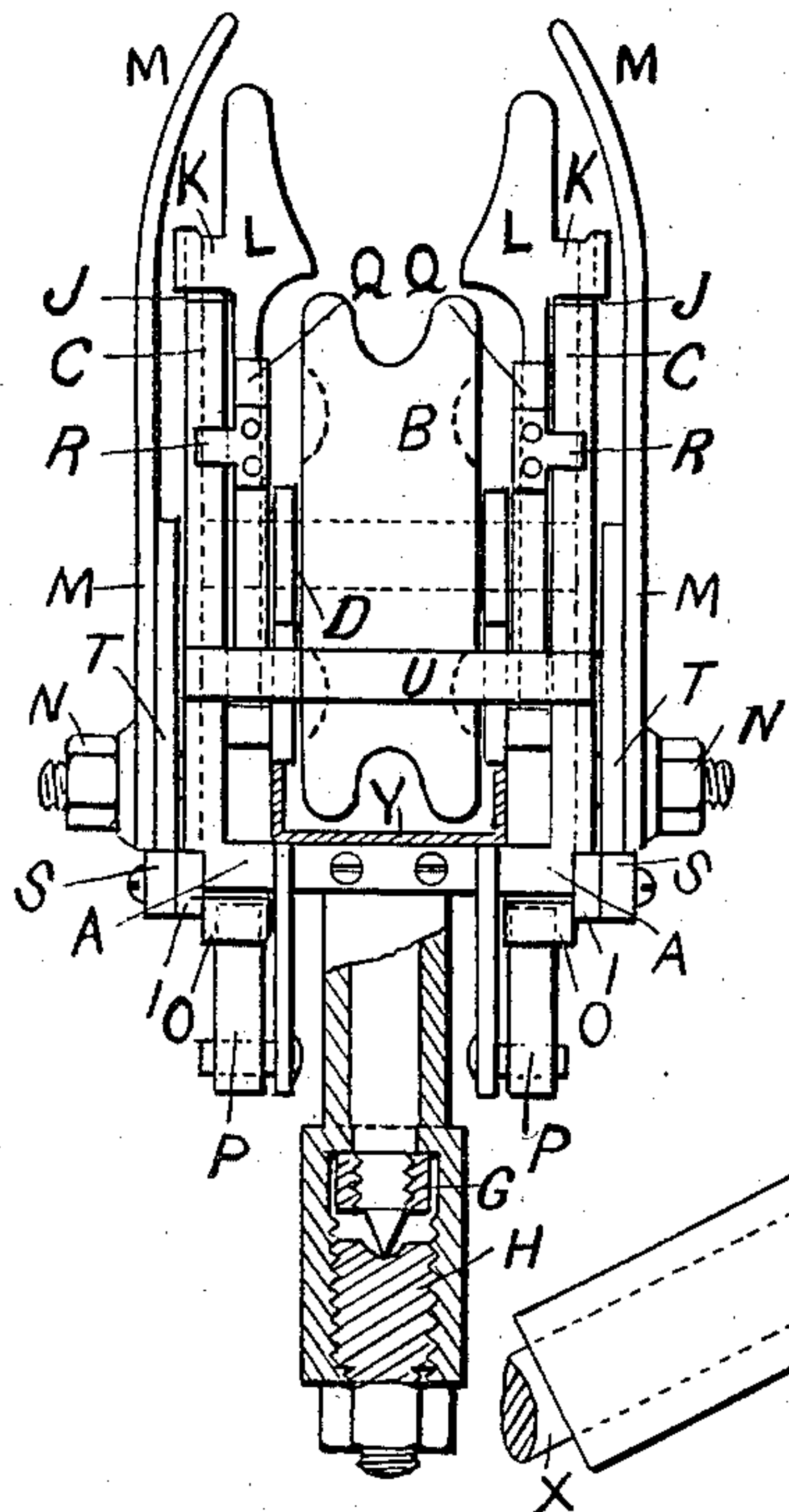


FIG. 2.

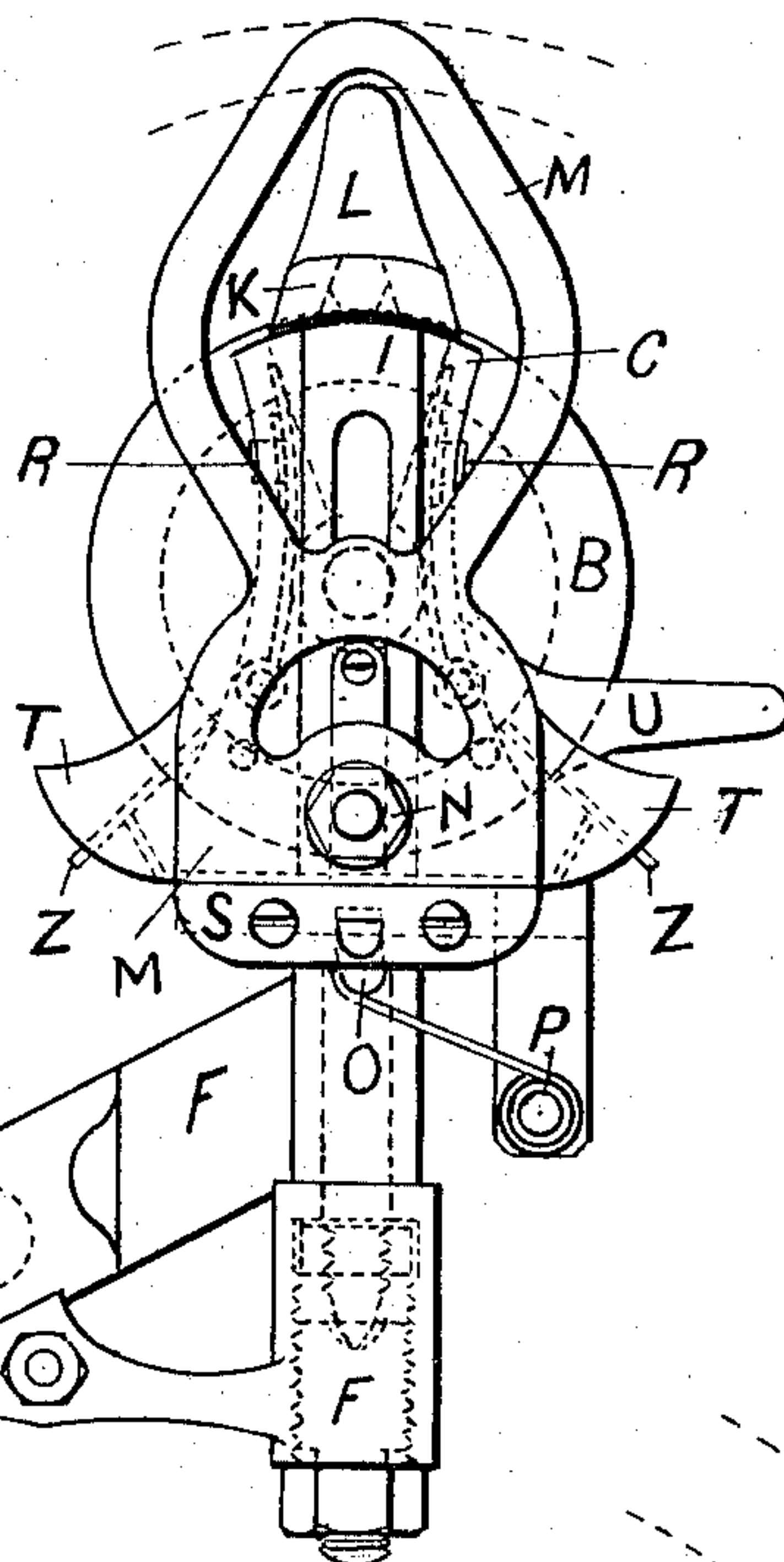
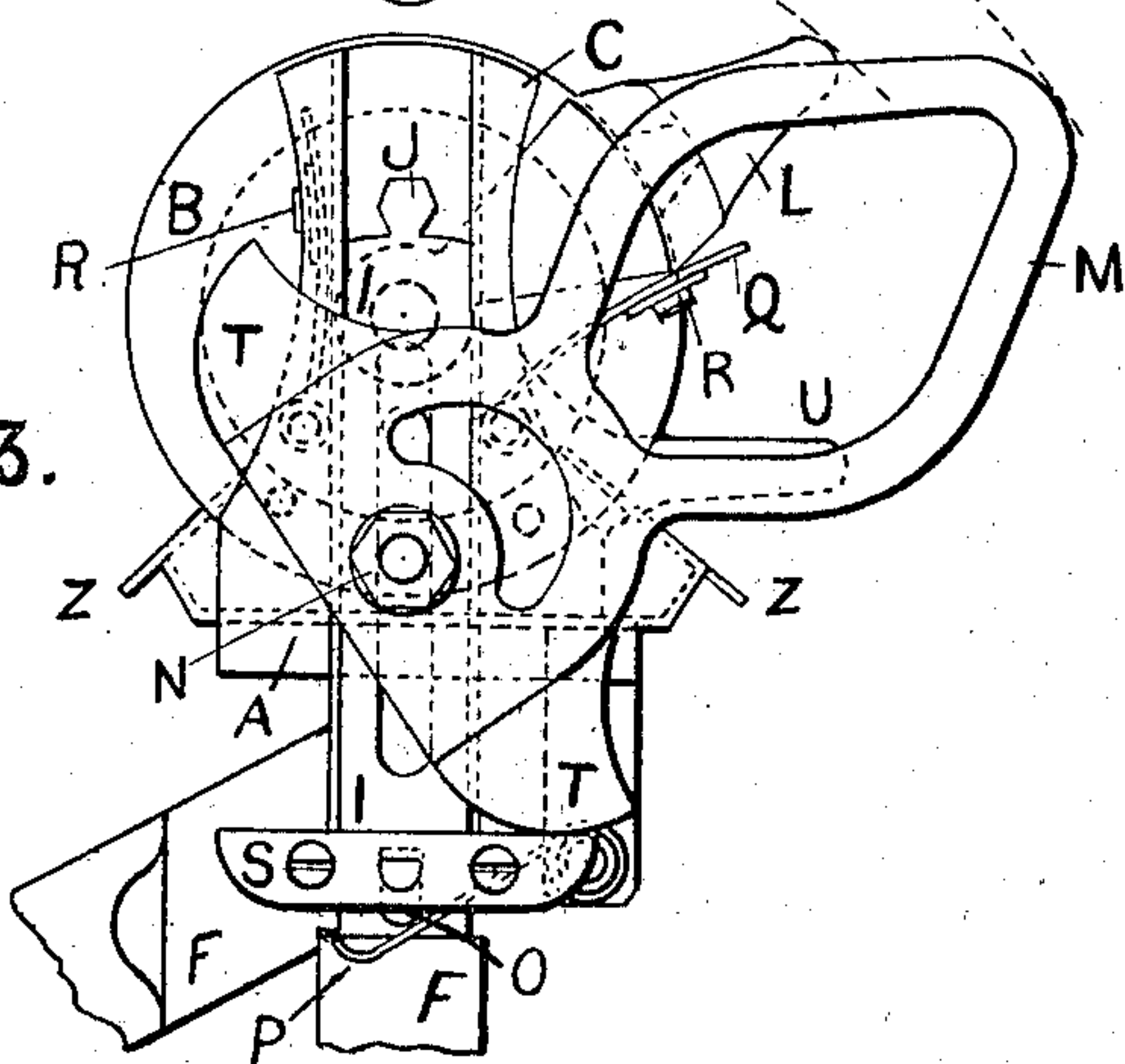


FIG. 3.



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UNITED STATES PATENT OFFICE.

LOUIS LAVAGNE AND LOUIS BERTRAND, OF MARSEILLES, FRANCE.

TROLLEY.

SPECIFICATION forming part of Letters Patent No. 736,610, dated August 18, 1903.

Application filed February 21, 1902. Serial No. 95,082. (No model.)

To all whom it may concern:

Be it known that we, LOUIS LAVAGNE and LOUIS BERTRAND, citizens of France, residing at Marseilles, France, have invented certain new and useful Improvements in Trolleys, of which the following is a specification.

This invention has for its object improved devices for use upon current collectors or trolleys of electric vehicles for preventing the collector from leaving the conducting-wire and for the purpose of maintaining the said collector in regular and constant contact with the wire.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a sectional elevation. Fig. 2 is a side view. Fig. 3 is a similar view with the parts in a different position.

The trolley or collector which forms the object of the present invention comprises a frame formed of a plate A, having two upwardly-extending cheeks C, between which the trolley-wheel B is mounted upon an axle D, about which it is free to revolve. Beneath the plate and connected therewith there is a pivot in a support F, attached to the trolley-pole, adapted to turn. The pivot has at its lower extremity a threaded part on which a nut G is screwed to secure it, said threaded part ending in a point G', which turns on the upper end of a screw-threaded stop or block H, held within the support F. This stop H terminates at its lower end in a second threaded piece H' or stem H', upon which a nut is screwed in order to fix the stop at any desired point.

On the external faces of the aforementioned cheeks C two vertical slides I of swallow-tailed shape are arranged. The upper end of each slide is tapered and forms a stop-catch J, which engages with a sheath-piece K, cast with a guard fork or projection L. The lower part of each slide I terminates in a heel-piece S, which serves for moving the said slides when the large forks or levers M oscillate. The vertical slides I are slotted centrally at I' to give passage to the spindle N, on which a pair of large forks or levers M turn. These two slides I have also at their lower ends supports or projections O, against which springs P bear, said springs serving for returning the

slides up to their normal positions. The springs are supported by the brackets P'.

The small forks or projections L, which are arranged vertically one on each side of the trolley-wheel B and which stand higher than said wheel, are capable of moving around the axle of said wheel and are maintained in place or in upright position by the vertical slides I, carrying the stop-catches J. Said forks are free to swing to the right or left as soon as said stop-catches J are moved out of engagement with them, which effect results from the movement of the large forks or levers M, as will be described. Strip-springs Q, placed at each side of the guards or forks L, tend to return them to a vertical position. These springs are provided with stop projections R, which bear when inactive against the trolley-wheel-supporting cheeks C C.

The large forks or levers M placed on each side of the cheeks are pivoted on the spindles N, as before stated. They reach above the small forks or projections L and have at their lower ends two rounded parts or cams T T, which bear on the heel-pieces S of the vertical slides I, and consequently fill the small forks when the upper parts of the forks M encounter obstacles, (crossings for the wires, stretchers, supports, switch-plates, and the like,) this filling action being due to one of the cams T pressing down upon one of the heel-pieces S, and thus depressing the corresponding slide I, so as to withdraw the catch J from the fork or lever L.

The groove of the trolley-wheel is always kept in contact with the electric wire, because should the trolley attempt to leave the wire in consequence of any movement of the electric car it would be automatically returned into position by the little fork projection or lever L, against which the wire would strike. These little forks are disengaged, and are then free to move backward or forward, according to the direction in which the vehicle is traveling, as soon as the large forks M strike against any obstacle. All the four resume their vertical position by the action of the springs P and Q immediately the obstacle is passed.

A lug U, cast on one side of the cheeks C, is adapted to be engaged by a gaff V for ma-

neuvering the trolley. This gaff is formed with a hook V', beyond which extends a long point V''; and when the gaff is engaged with the lug this point stands higher than the trolley and its side forks, and when this point strikes the electric wire the trolley may be let go, as it is certain that it will engage the electric wire. This gaff has been designed with the purpose of preventing the losses of time which occur in attempts to find the wire when the direction of the pole which carries the trolley has to be changed.

A metallic box Y, which is filled with oil, is placed on the plate between the cheeks which carry the trolley-wheel, and the groove of said wheel passes through said box and is lubricated therein, whereby much of the wear and tear produced by the friction of wire in the groove is obviated. The upper part of this oil-box is closed by two plates or slides Z, which are cut out to fit the profile of the groove of the trolley-wheel in order to avoid oil being thrown outside the box by said wheel. These two slides may be adjusted when required to compensate for the wearing away of the trolley. The apparatus is preferably inclosed at its lower part and at the sides by a cast-metal casing in order to protect all the parts from dust.

We claim as our invention—

1. In combination with a trolley-wheel and the frame carrying the same, guards or forks extending up above the trolley-wheel and supported by the said frame, said guards or forks being arranged to contact with the wire upon displacement of the trolley to thereby return the trolley to the wire and means for holding the said guards or forks in normal position or releasing them to allow their movement when passing obstructions, substantially as described.

2. In combination with the trolley-wheel and its supporting-frame, forks or guards extending above the wheel to engage the wire upon displacement of the said wheel, means

for holding the forks in normal position, means for releasing the said forks or guards comprising pivoted forks or levers and a connection between the same and the holding means for the guards, substantially as described.

3. In combination, the trolley-wheel and its frame, guards or forks extending above the trolley-wheel, vertically-moving slides having catches to engage the said forks to hold them upright and pivotally-supported levers or forks M having their contact surfaces or edges reaching beyond the plane of the guards or forks, said pivoted levers being arranged to operate the slides, substantially as described.

4. In combination, a trolley-wheel, a supporting-frame therefor having vertical guideways, slides moving in said ways, pivoted forks or guards reaching above the trolley-wheel, catch means on the slides engaging the pivoted guards, the levers M pivoted to the frame and of larger extent than the pivoted guards, said large levers having cams thereon to operate the vertical slides, substantially as described.

5. In combination, a trolley-wheel, a supporting-frame therefor having vertical guideways, slides moving in said ways, pivoted forks or guards reaching above the trolley-wheel, catch means on the slides engaging the pivoted guards, the levers M pivoted to the frame and of larger extent than the pivoted guards, said large levers having cams thereon to operate the vertical slides, and springs for automatically returning the guards and levers to normal position, substantially as described.

In witness whereof we have hereunto set our hands in presence of two witnesses.

LOUIS LAVAGNE.
LOUIS BERTRAND.

Witnesses:

ROBT. K. FAST,
ALLAN MACFARLANE.