

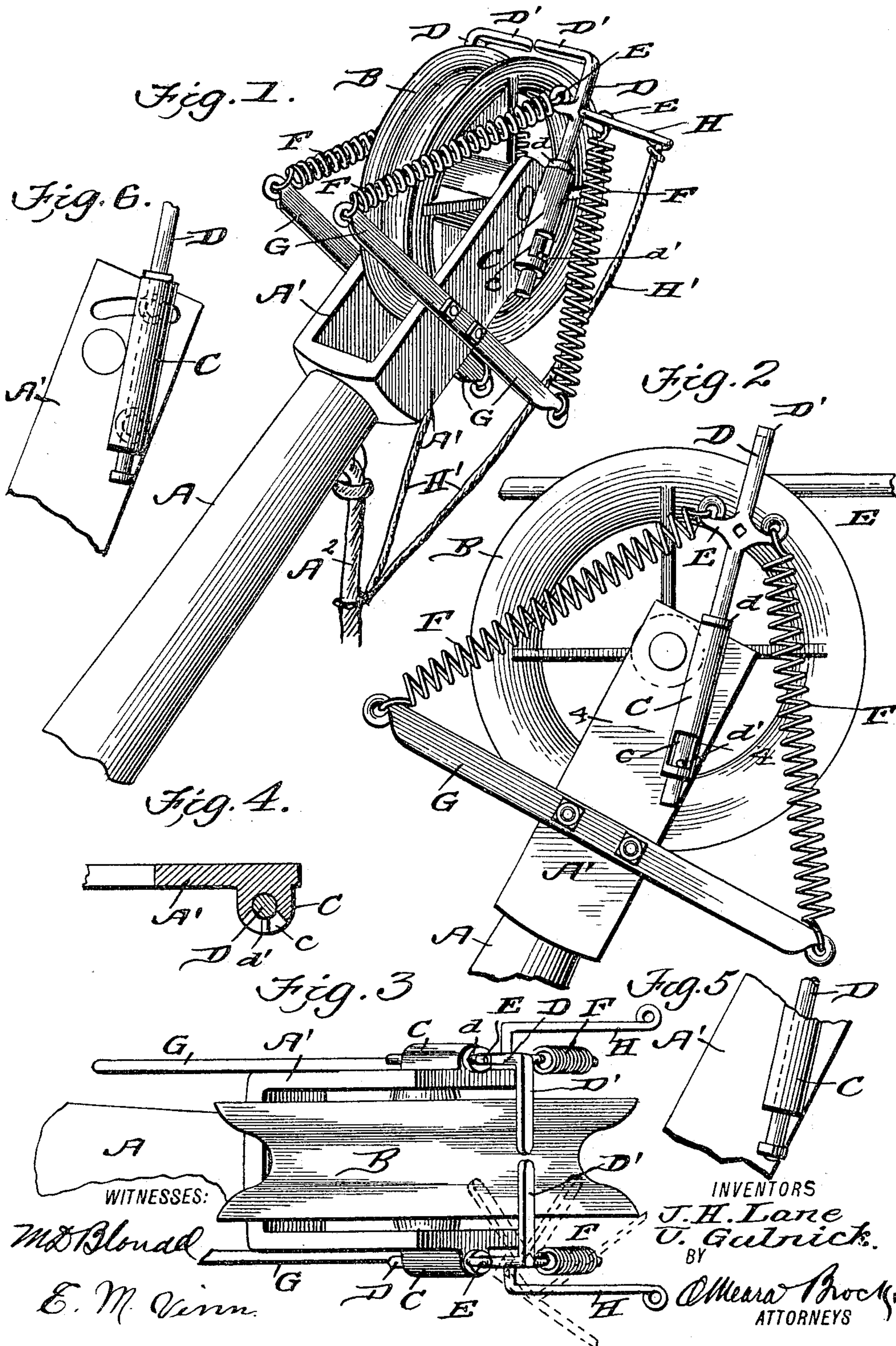
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PATENTED MAY 1, 1906.

J. H. LANE & U. GULNICK.

TROLLEY-WHEEL GUARD.

APPLICATION FILED MAY 3, 1905.



UNITED STATES PATENT OFFICE.

JAMES HENRY LANE AND URIAH GULNICK, OF NEWARK, NEW JERSEY.

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No. 819,146.

Specification of Letters Patent.

Patented May 1, 1906.

Application filed May 3, 1905. Serial No. 258,664.

To all whom it may concern:

Be it known that we, JAMES HENRY LANE and URIAH GULNICK, citizens of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Trolley-Wheel Guards, of which the following is a specification.

This invention relates to an improved guard attachment for trolley-wheels designed for the purpose of preventing the trolley-wheel accidentally jumping or leaving the line-wire, but capable of adjustment so that the wheel and pole may be readily disengaged, as is often necessary, especially when the car reaches a terminal.

The objects of the invention are to provide a cheap, simple, light, and highly-efficient device capable of ready attachment to trolley-poles now in use without changing the construction thereof and capable of releasement by and simultaneously with the operation of the rope employed for lowering and reversing the trolley-pole.

With these briefly-stated objects in view the invention comprises two guard-arms suitably journaled to the fork of the pole and each having right-angular inwardly-extending portions projecting over the peripheries of the trolley-wheel and each also having two arms or extensions, to which are connected springs, whose opposite ends are connected to brackets fastened to the fork of the pole and by which the arms are yieldingly held in their proper position and also to return them when the arms are turned to permit the disengagement of the wheel from the wire. To one of the guard-arms is connected a crank-lever having an operating-cord secured to its free end, which is also connected to the rope for lowering the pole and by which the guard-arm is turned as the trolley-pole is pulled down.

The invention also comprises certain details of construction and novelties of combination and arrangement of parts, as will be fully set forth in the following specification and pointed out in the claims, reference being had to the drawings, in which—

Figure 1 is a perspective view of the upper end of a trolley pole and wheel having our improvements applied. Fig. 2 is a side view of the same. Fig. 3 is a plan view with one set of springs removed for the purpose of clearer illustration. Fig. 4 is a detail sectional view drawn on about the line 4 4 of

Fig. 2, and Figs. 5 and 6 are detail views showing slight modifications.

It may be stated that our improved guard is designed to be used in connection with a special construction of trolley-wire hanger or support which forms the subject-matter of a separate application filed by us of even date with this application; but we desire it understood that it may be used with equal effectiveness upon trolley-wires in which the present constructions of wire-supports are used.

Referring to the drawings, A designates the ordinary construction of trolley-pole having a trolley-wheel B journaled in the fork A' of the pole, and upon each member of the fork is formed or secured a journal-box C, preferably cylindrical in shape and in each of which is journaled a guard-arm D, each having an angle extension D' at its upper end, which extends over the periphery or flange of the wheel toward and nearly to engagement with each other. The arms D are held in their journals by collars d, which bear upon the upper ends of the journals, and by pins d', working in elongated slots c in the lower ends of the journals. This arrangement of holding the arms in their bearings permits of a slight longitudinal movement of the arms and allows a yielding movement should the arms come in contact with an object.

Near the outer end of each arm is arranged a forwardly and rearwardly projecting extension E E, whose free ends terminate in eyes, to which are connected one end of springs F F, whose opposite ends are connected to a bracket-arm G, secured to each member of the fork, as clearly indicated in the drawings. This connection of the springs to the arms holds them, so that the extensions of the arms will be held in alinement, but readily permits a revoluble yielding movement of the arms and also quickly returns them when thrown out of alinement.

In order to turn the arms so that the wheel may be disengaged from the wire, we provide crank-levers H, which are connected to the arms of the guards and have their free ends formed into eyes, to which are connected cords or ropes H', whose opposite ends are connected to the rope A², so that the levers are first operated to turn the arms when the rope is pulled down and then by pulling further upon the rope the wheel and pole are lowered and the wire allowed to slip between the extensions of the guard-arms. This operation

is shown most clearly upon one side in Fig. 3 of the drawings, and it will be observed that no matter in which direction the pole may be pulled the cranks will be operated to turn the guard-arms.

In Fig. 6 we show a slight modified construction of attaching the journals to the forks which consists in pivotally securing the journals at one end to the fork, with their upper ends provided with stub-bolts, which work through slots in the forked members of the pole. This construction permits of a slight forward or backward movement of the arms should the pole be lowered to such an extent that the trolley-wire would come in contact with the angle members of the guards, and thus permits of a slight movement thereof and avoids the possibility of the wire escaping between the guard. This construction will be found useful, especially where the railroad runs under a low bridge or arch, in which case the trolley-pole is lowered by the line or trolley wire. Of course it will be understood that each arm D in this construction is capable of a longitudinal and rotary movement the same as the arm D shown in the preferred construction.

In Fig. 5 we show a further slight modification of the arm, in that the said arm is provided at its lower end with a head to prevent displacement, and in this construction it will be understood the slot *c* and pin *d'* are omitted.

From the foregoing it will be seen that we provide an exceedingly cheap, simple, and efficient device for the purposes stated, and further comments upon the merits are thought unnecessary, as they will readily appear to those experienced in operating a trolley-car. It may be stated, however, that the construction we employ is very light and only adds about fifteen ounces of weight to the pole and does not interfere with the spring mechanism for holding the wheel to the wire.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination with a trolley-pole having a wheel journaled thereto, of guard-arms yieldingly journaled to the pole and having a revoluble and longitudinal movement, and springs connected to the arms for holding them in alinement.

2. The combination with a trolley-pole and fork having a wheel journaled in the fork, of guard-arms journaled in each member of the

fork, forwardly and rearwardly extensions arranged upon each guard-arm, and springs connected to each extension for the purpose set forth.

3. The combination with a trolley-pole and fork, having a wheel journaled in the fork, of journals arranged upon each member of the fork, guard-arms revolubly retained in each journal, said guard-arms having angle extensions extending over the wheel, forwardly and rearwardly projecting extensions secured to the arms, brackets secured to the fork, and springs connecting the extensions and brackets.

4. The combination with a trolley-pole and fork, having a wheel journaled in the fork, of journals secured to each member of the fork, guard-arms held in the journals, said arms, having a slight longitudinal movement through the journals, extensions arranged upon the arms, brackets secured to the fork, springs connecting the extensions and brackets, and means for revolving the guards for the purpose set forth.

5. The combination with a trolley-pole and fork, having a wheel journaled therein, of guard-arms journaled to the fork, said arms having a revoluble and longitudinal movement, and means for limiting such movement.

6. The combination with a trolley-pole and fork, having a wheel journaled in the fork, of journals arranged upon each member of the fork, each journal having an opening near its lower end, guard-arms operating in the journals, said arms having angular extensions at their upper ends, a collar arranged upon each arm, a pin carried by each arm, and projecting into its respective opening in the journals, forwardly and rearwardly projecting extensions formed upon each arm, brackets secured to the said fork, springs connecting the extensions and brackets, and levers connected to the guard-arms.

7. A device of the kind described, comprising guard-arms, having angle extensions at the outer ends projecting toward each other, forward and rearward extensions carried by the arms, springs for holding the angle extensions in alinement, and levers for operating the arms, substantially as set forth.

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Witnesses:

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