No. 798,394. PATENTED AUG. 29, 1905.

F. C. COTTRELL.

TROLLEY.

APPLICATION FILED APR. 26, 1905.

Fig. 1.

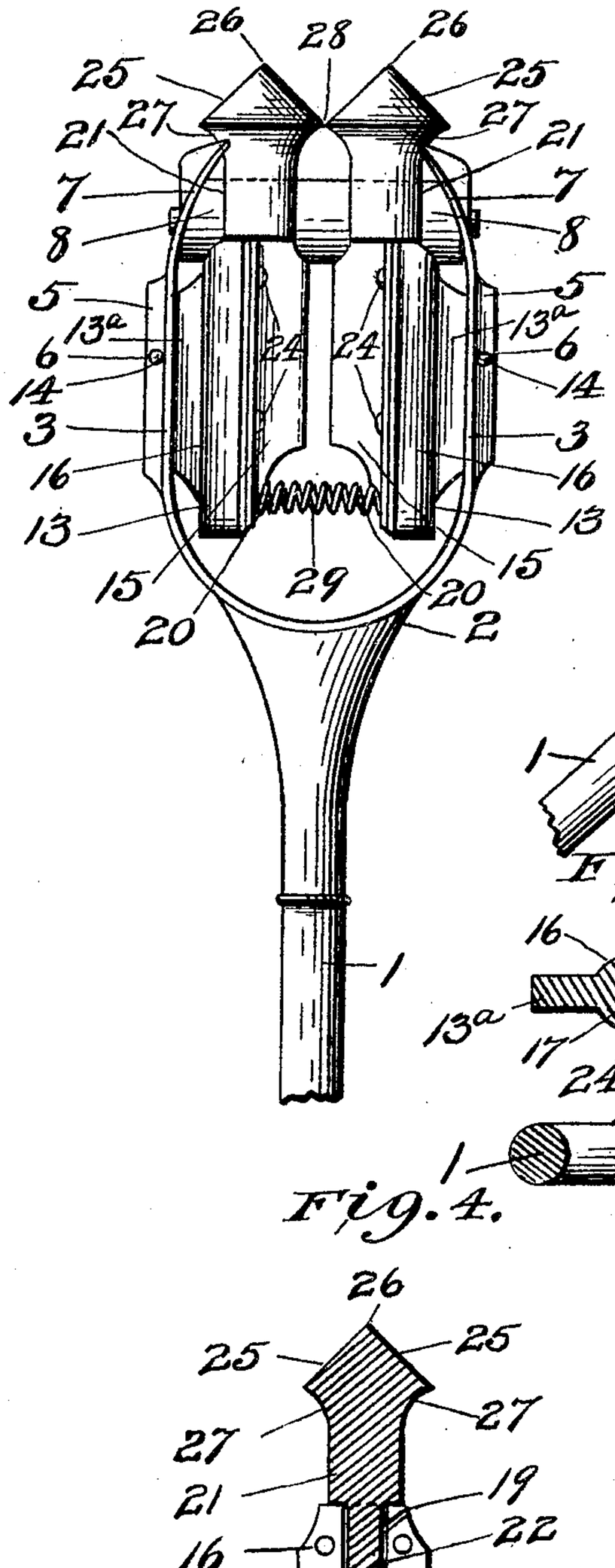


Fig. 2.

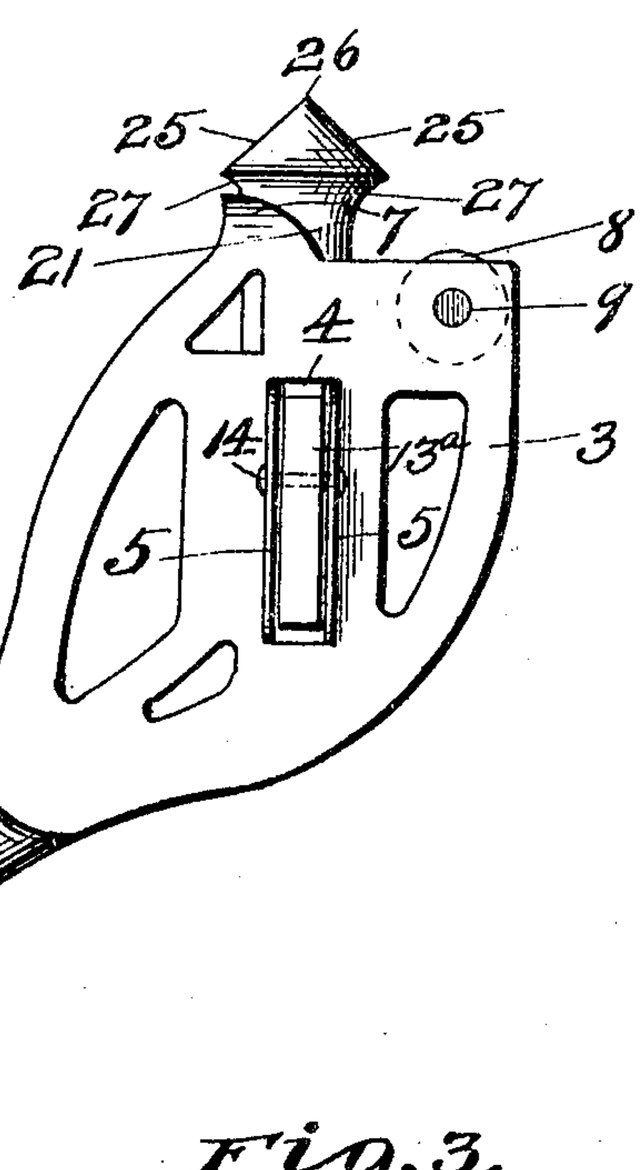


Fig. 6.

Fig. 3.

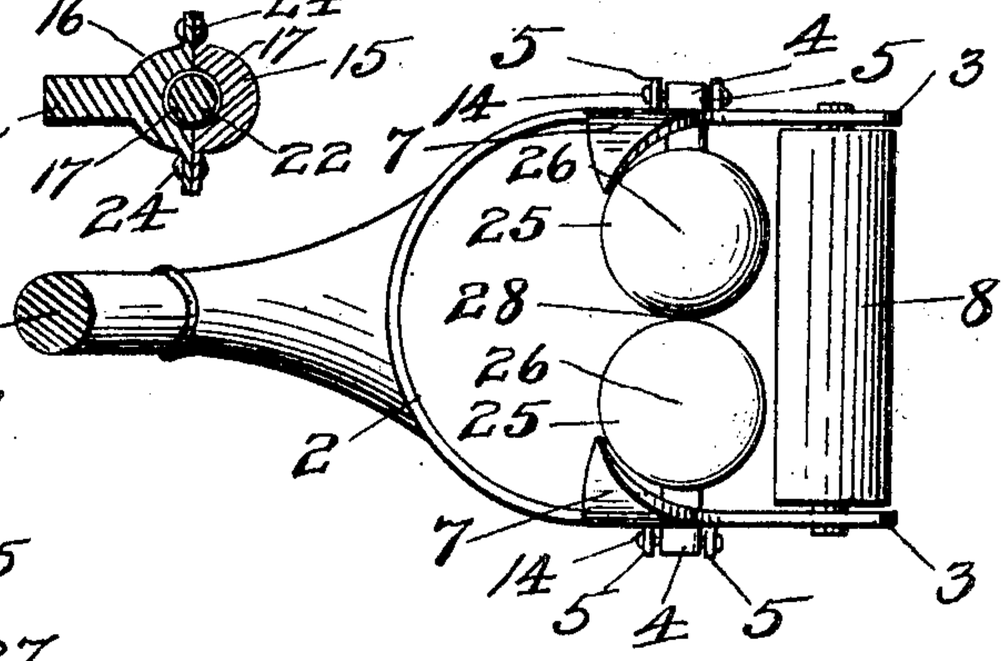
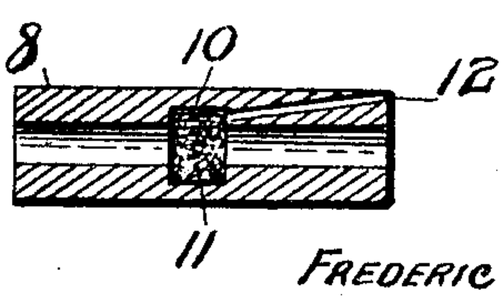


Fig. 4.

Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

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TROLLEY.

No. 798,394. Specification of Letters Patent. Patented Aug. 29, 1905.

Application filed April 26, 1905. Serial No. 257,505.

To all whom it may concern:

Be it known that I, FREDERIC C. COTTRELL, a citizen of the United States, residing at Taunton, in the county of Bristol, State of Massachusetts, have invented certain new and useful Improvements in Trolleys; and I do 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 pertains to make and use the same.

My invention relates to improvements in trolleys, and has for its object to provide means for causing the trolley to easily follow the line wire or conductor and automatically adjust its position to curves and switches and maintain its proper operative position at all times under the many various conditions of use.

It further has for its object to provide a trolley which although it can be readily applied and removed from the trolley wire or conductor, yet it will be prevented from leaving said wire or conductor accidentally.

It still further has for its object to provide a trolley which is simple, inexpensive, and durable in construction and easy in operation.

The invention consists in the construction, combination, and arrangement of the several parts as hereinafter more fully described and claimed.

Referring to the drawings, Figure 1 is a front elevation; Fig. 2, a side elevation; Fig. 3, top plan view; Fig. 4, a vertical central section of one of the vertical rollers and the casing in which it is mounted; Fig. 5, a central vertical section of the horizontal roller; Fig. 6, a cross-section of one of the vertical rollers and one-half of its casing.

In the drawings, in which like numerals of reference denote like parts throughout the several views, 1 represents a portion of a trolley-pole, 2 the harp, provided with sides 3, having elongated vertical slots 4, with outwardly-extending ribs 5, on each side provided with holes 6, said sides 3 terminating at their upper ends in inwardly-curved guards or lips 7. A hollow roller 8 is mounted horizontally on a shaft, the opposite ends of which engage holes 9 in the sides 3 of the harp, said roller being provided with an oil-chamber 10, preferably at a point midway its ends, designed to receive a wick 11, and a diagonal oil-inlet 12, extending from one end of said roller 8 to the oil-chamber 10, by which oil is adapted to be introduced into the oil-chamber 10 to the wick 11.

13 represents a pair of casings provided with lugs 13ª, pivoted between the ribs 5 on pins 14, mounted in the holes 6 of the ribs 5, each of said casings comprising two parts 15 and 16, having a semicircular recess 17 in each part, a socket 18, and an oil-feed hole 19. The parts 15 are provided with inwardly-projecting pins 20. Each of said casings 13 has mounted therein a vertical roller 21, having a shank 22 and an annular collar 23, which is seated in and inclosed by the socket 18 and is thereby prevented from being pulled out or detached from said casing when the two parts of the same are secured together by means of the screws 24. The upper ends or heads of the rollers 21 are provided with beveled ends 25, terminating in points 26, and are curved inwardly from the lower ends of said beveled ends 25, as shown at 27. The heads of the vertical rollers 21 are preferably made to touch each other at the point 28 by means of the pressure exerted on them by a spiral spring 29, mounted on the pins 20 between the casings 13.

By pivoting the casings 13 and providing them with a spring it allows the trolley to move laterally slightly against the pressure of the line-wire and relieves the strain and friction when the trolley strikes a switch or curve and at the same time allows the vertical rollers to separate when the trolley is being engaged or disengaged from the line-wire, said rollers being returned automatically to their normal positions by means of the spiral spring 20.

The vertical and horizontal rollers prevent the line-wire from being accidentally disengaged from the trolley, but at the same time allow it to be engaged or disengaged when desired, and the curved guards or lips prevent the line-wire from getting between the harp and the ends of the vertical rollers.

In operation the trolley is applied to the line wire or conductor by elevating it until the line-wire engages and slides down the beveled end of one of the rollers, passes between said rollers and engages the horizontal roller 8, and when it is desired to remove the trolley from the line-wire the trolley is pulled downward until the line-wire slides up the inwardly-curved portions of the vertical rollers and passes between said rollers.

I preferably make all the parts of steel; but they may be made of any material found suitable for the purpose.

I do not desire to be understood as limiting

myself to the specific details of construction and arrangement as herein described and illustrated, as it is manifest that variations and modifications may be made in the features of construction and arrangement on the adaptation of the device to various conditions of use without departing from the spirit and scope of my invention and improvements. I therefore reserve the right to all such variations and modifications as properly fall within the scope of my invention and the terms of the following claims.

What I claim is—

1. A trolley provided with a harp having slots in its sides, casings having lugs which are pivoted in said slots, rollers having shanks mounted in said casings, and a roller mounted in said harp, substantially as described.

2. A trolley provided with a harp having slots, a two-part casing pivoted in each of said slots, a roller mounted in each of said casings and provided with a beveled head, means for automatically causing said beveled heads to contact with each other, and a roller mounted in said harp, substantially as described.

3. A trolley provided with a harp having guards or lips, slots in the sides of said harp below said guards or lips, a roller mounted between the sides of said harp, casings pivoted in the slots in the sides of said harp, a roller mounted in each of said casings and a spring mounted between said casings for causing the rollers mounted in said casings to contact with each other, substantially as described.

4. A trolley provided with a harp having guards or lips at its upper end, slots provided with ribs on each side thereof, a casing pivoted to said ribs in each of said slots, a roller mounted in each of said casings, means for automatically causing said rollers to normally contact with each other, and a roller mounted in said harp, substantially as described.

5. A trolley provided with a harp having elongated slots with ribs on each side, a casing pivoted to said ribs in each of said slots, a vertical roller mounted in each of said casings and provided with a beveled head, means for causing said heads to contact with each other, and a horizontal roller mounted adjacent to said vertical rollers, substantially as described.

6. A trolley provided with a harp having a casing pivoted at each side thereof provided with an oil-chamber, a spring between said casings, a vertical roller mounted in the oil-chamber in each of said casings, and a horizontal roller mounted in said harp below the vertical rollers, substantially as described.

7. A trolley provided with a harp, casings having oil-chambers, a vertical roller mounted in each of said chambers, and a hollow horizontal roller mounted in said harp and provided with an oil-chamber, substantially as described.

8. A trolley provided with a harp, pivoted casings having sockets, and rollers mounted in said casings having collars which engage said sockets, and a roller adjacent said casings, substantially as described.

9. A trolley provided with a harp having a horizontal roller, pivoted casings having sockets vertical rollers having shanks mounted in said sockets, and means for automatically causing said vertical rollers to contact with each other, substantially as described.

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

FREDERIC C. COTTRELL.

Witnesses:

JAMES I. DEVOLL,

WILLIAM E. PRING.