

(No Model.)

G. W. BIDDELL.
TROLLEY.

No. 545,009.

Patented Aug. 20, 1895.

Fig. 4.

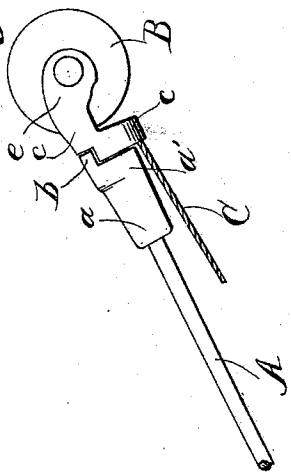


Fig. 5.

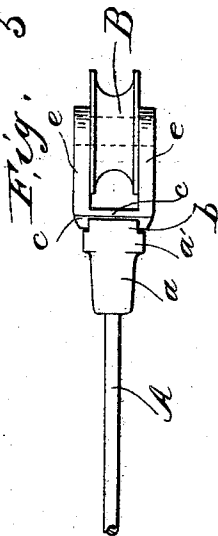


Fig. 6.

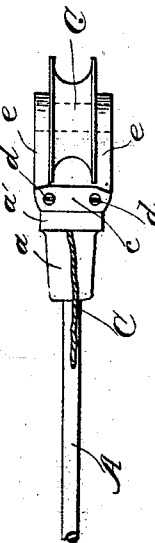


Fig. 1.

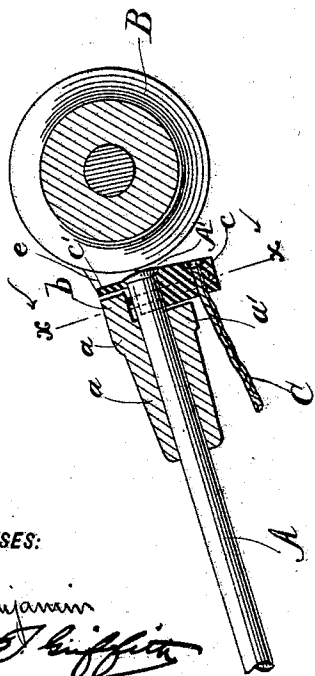


Fig. 2.

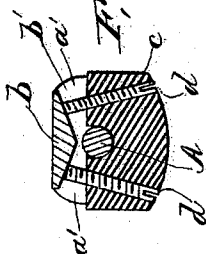
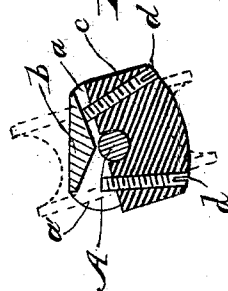


Fig. 3.



WITNESSES:

Geo. W. Benjamin
Ray C. Shiffert

INVENTOR

Geo. W. Biddell
BY Edgar Tate & Co
ATTORNEYS

UNITED STATES PATENT OFFICE.

GEORGE WASHINGTON BIDDELL, OF CHATTANOOGA, TENNESSEE.

TROLLEY.

SPECIFICATION forming part of Letters Patent No. 545,009, dated August 20, 1895.

Application filed February 2, 1895. Serial No. 537,035. (No model.)

To all whom it may concern:

Be it known that I, GEORGE WASHINGTON BIDDELL, a citizen of the United States, and a resident of Chattanooga, county of Hamilton, and State of Tennessee, have invented certain new and useful Improvements in Trolleys, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar letters of reference indicate corresponding parts in all the figures.

This invention relates to trolleys, and has for its object to provide such a device as will yield or turn upon curves and conform to irregularities of the conductor or wire, thereby preventing the trolley-wheel from slipping said wire and also lessening appreciably the friction between the same.

The invention consists in the novel construction and arrangement of parts, whereby the above-mentioned and other desirable results are attained, and hereinafter more fully described.

Referring to the drawings, Figure 1 is a longitudinal section through the exact center of the upper portion of a trolley embodying my invention. Fig. 2 is a transverse section of the same upon the line *xx*, Fig. 1. Fig. 3 is a similar view to Fig. 2, illustrating the trolley-bearing as turned to pass around a curve, the wheel being therein indicated by dotted lines. Fig. 4 is a side elevation. Fig. 5 is a plan view of the trolley or elevation of that surface thereof which in practice is uppermost. Fig. 6 is an inverted or reverse view to Fig. 5.

In the practice of my invention I rigidly secure upon the upper end of the trolley-rod A, which may be either solid or tubular, a cylindrical sleeve *a*, having formed upon the upper end thereof an integral extension *a'*, from which projects longitudinally or upwardly, at one side thereof, or that which when the trolley is in operation is upon the upper face of the rod, a shoulder *b*, elongated or plate-shaped and angular upon its inner face *b'*. The rod A projects appreciably above this shoulder *b*, and the said projecting portion thereof forms a pivot on which is swiveled or journaled a flat elongated block *c*, secured by means of a flange or head *A'* upon the rod and having its inner face sufficiently removed

from the face *b'* of the shoulder *b* to permit said block to turn an appreciable distance to the right or left before abutting against the ends of said shoulder. In either end of said block are inserted therethrough screws *d*, adapted to be turned or adjusted to project any desired distance beyond the inner face of said block, to limit the movement of the same to either side, said screws being preferably inserted diagonally to strike the face of the shoulder at right angles. The top of the block *c* ranges slightly beyond the edge of the shoulder *b* and projects over said shoulder in the form of an extension *c'*, upon which are mounted at each end the bearings *e*, which carry the trolley-wheel B between the same. To the outer side of the block *c* is secured the cord C or similar means for depressing or withdrawing from the wire the trolley.

The operation of the device will be readily understood from the foregoing description, taken in connection with the accompanying drawings. As the car proceeds, the wheel B engages the wire or conductor and runs thereon as ordinarily until an irregularity, bend, or turn of said wire is reached, or until the car arrives at a curve or switch, whereupon the wheel B accommodates itself to the variation or irregularity, and the rod A and sleeve *a* being stationary, the block *c* is turned thereon until one of the screws *d* strikes the inner face *b'* of the shoulder *b*, as shown in Fig. 3. Should it be found that the wheel yields too greatly or too slightly upon either side, the corresponding screw *d* is turned to adjust the throw of the block.

The advantages resultant from the use of the invention will be manifest to all who are conversant with the general class of devices to which the same appertains. It is to be understood that the trolley is equally applicable to overhead or underground conductors.

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

1. A trolley comprising a rod, having a sleeve or head secured upon the end thereof, a shoulder projecting upwardly from said head, and a block pivoted upon said head, having the trolley journaled thereon, said block being adapted to partially rotate or

yield laterally, and being limited in such movement by engagement with the shoulder of the rod.

2. A trolley comprising a rod having a sleeve or head upon the end thereof, a shoulder extending across the top thereof, a block pivoted upon the top of said trolley and carrying the trolley wheel, said block being adapted to yield laterally or partially rotate, and limited in such rotation by the shoulder, and screws extending through said block to project inwardly beyond the same and abut against said shoulder to adjust the throw of the wheel.

3. A trolley comprising a rod, having a cylindrical head rigidly secured thereon near the upper end, said head being provided with an elongated shoulder upon one side thereof, a flat elongated block pivoted or journaled upon the projecting portion of said rod, and

secured thereto by means of a flange thereon, said block being adapted to laterally yield or partially rotate, and having its motion limited by said shoulder, screws extending through either end of said block, adapted to be projected beyond the inner face thereof to bear against the shoulder to adjust the throw of the wheel, an extension projecting from said block over the shoulder, and having bearings formed thereon in which the trolley wheel is journaled, and a cord or withdrawing device secured to said block.

In testimony that I claim the foregoing as my invention I have signed by name, in presence of two witnesses, this 25th day of January, 1895.

GEORGE WASHINGTON BIDDELL.

Witnesses:

S. F. POWELL,

S. W. THOMPSON.