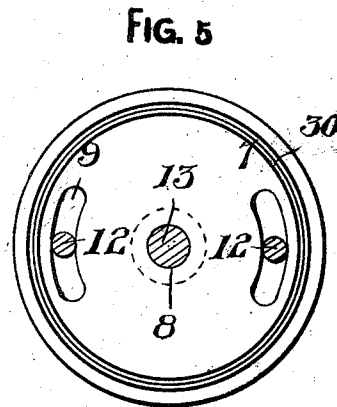
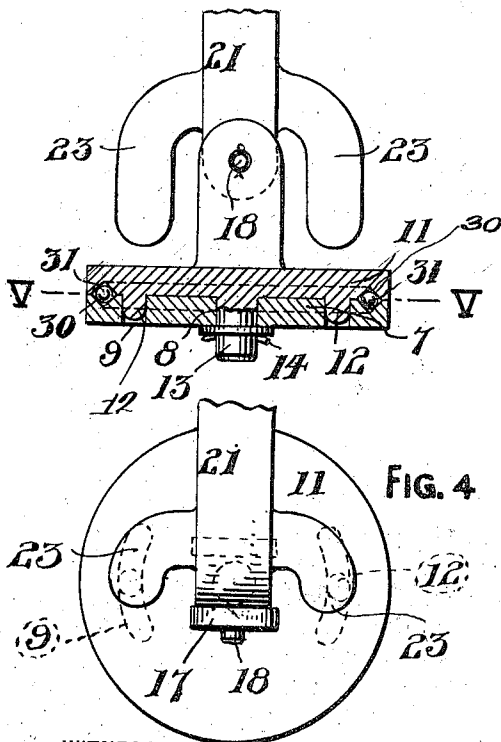
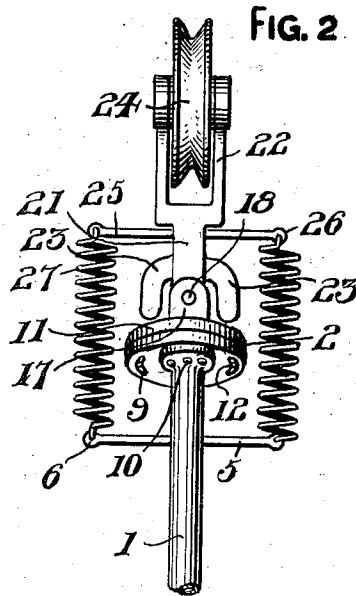
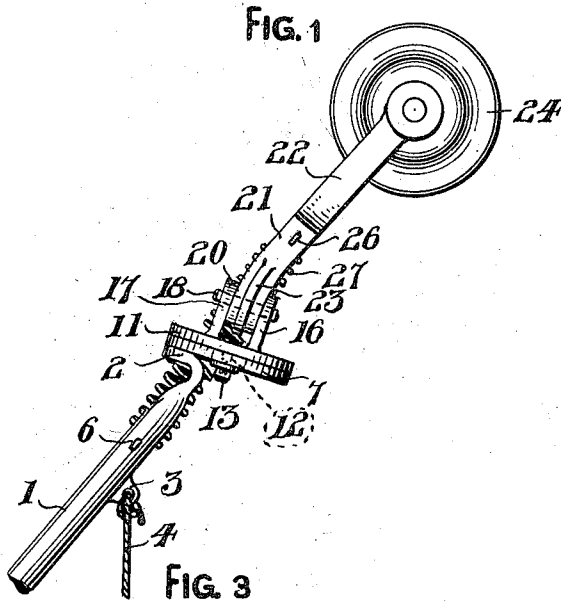


A. F. BEVARD.
TROLLEY.
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1,044,978.

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TROLLEY.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALVIN F. BEVARD, a citizen of the United States of America, residing at Carnegie, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Trolleys, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to trolleys, and has for its object to provide a device of such class in a manner as hereinafter set forth with means for maintaining the trolley wheel in engagement with the trolley wire particularly when rounding curves.

15 Further objects of the invention are to provide a trolley for the purpose set forth which is simple in its construction and arrangement, strong, durable, efficient in its use, including means operating automatically for maintaining the trolley wheel against the trolley wire and comparatively inexpensive to manufacture.

20 With the foregoing and other objects in view the invention consists of the novel construction, combination and arrangement of parts as hereinafter more specifically described and illustrated in the accompanying drawing, wherein is shown an embodiment 30 of the invention, but it is to be understood that changes, variations and modifications can be resorted to which come within the scope of the claims hereunto appended.

35 In describing the invention in detail, reference is had to the accompanying drawing wherein like reference characters denote corresponding parts throughout the several views, and wherein:—

40 Figure 1 is a side elevation of a trolley in accordance with this invention, one of the springs at one side being removed, Fig. 2 is a front elevation, Fig. 3 is a horizontal section, broken away, Fig. 4 is a top plan broken away, and Fig. 5 is a section on line 45 V—V of Fig. 3.

Referring to the drawing in detail 1 denotes a trolley pole having its upper end reduced and extending forwardly at right angles, as at 2, the said forwardly extending end being flattened. The pole 1 is formed with a lateral apertured lug 3 to which is connected a rope 4 for positioning the pole. Extending through the pole 1 at a point above the lug 3 is a bar 5 having each end

thereof enlarged and apertured, as at 6 to 55 provide an eye.

Mounted upon and projecting rearwardly from the end 2 of the pole 1 is a circular disk 7 provided with a centrally disposed opening 8 and a pair of diametrically opposite 60 and oppositely disposed segment-shaped slots 9. The disk 7 is fixedly secured to the end 2 by suitable hold fast devices, as at 10. Mounted upon the disk 7 is a circular plate 11 of the same diameter as the diameter of 65 the disk 7, provided with a pair of depending lugs 12 which extend into the slots 9. The plate 11 is rotatably connected to the disk 7 through the medium of a depending circular extension 13 which projects through 70 the opening 8 and is provided with a cotter pin 14. Interposed between the pin 14 and the lower face of the disk 7 and mounted upon the extension 13 is a washer 15. The lugs 12 in connection with the end walls of 75 the slots 9 are utilized for limiting the movement of the plate 11 in either direction upon the disk 7.

Projecting upwardly from the plate 11 is a pair of vertically disposed apertured arms 80 16, 17 between which is pivotally connected, through the medium of the pin 18 the curved lower end 20 of the shank 21 of a harp 22. Formed integral with the shank 21 at each side thereof is a depending L-shaped stop 85 23 which is adapted to engage the plate 11 to arrest the swinging or pivoting movement of the shank of the harp. By providing the pair of L-shaped stops 23 the swinging movement of the shank of the 90 harp is limited in either direction. Journalled in the harp 22 is a trolley wheel 24.

Extending through the shank 21 is a bar 25 which is arranged parallel with respect to the bar 5 and has each of the ends en- 95 larged and apertured, as at 26 to form an eye. The eyes of the bar 25 are connected to the eyes of the bar 5 by a pair of coiled expansion springs 27.

The pivot 18 for the shank 21 is disposed 100 at an angle with respect to the extension 13, the latter constituting a pivot for the plate 11 and by such an arrangement the plate 11 will swing on what may be termed a vertical axis, while the shank 21 will 105 swing on what may be termed a horizontal axis, thereby providing for the swinging of the harp in various directions when occa-

sion so requires and while swinging, the springs 27 tend to maintain the trolley wheel in engagement with the trolley wire. The disk 7 as well as the plate 11 is provided with an annular groove, these grooves are indicated by the reference character 30 and register with each other to provide a ball race in which are arranged the bearing balls 31.

10 What I claim is:—

1. A trolley comprising a pole, a disk fixed to and projecting rearwardly from the upper end of said pole, a plate pivotally connected to said disk, said plate and disk provided with associated means for limiting the movement of the plate in either direction, a harp carrying a trolley wheel and provided with a shank, means for pivotally connecting said shank to said plate, rods carried by the pole and shank, and expansion springs connecting said rods together.

2. A trolley comprising a pole, a disk fixed to and projecting rearwardly from the upper end of said pole, a plate pivotally connected to said disk, said plate and disk provided with associated means for limiting the movement of the plate in either direction, a harp carrying a trolley wheel and provided with a shank, means for pivotally connecting said shank to said plate, rods

carried by the pole and shank, expansion springs connecting said rods together, and a pair of oppositely disposed L-shaped stops carried by opposite sides of the shank and adapted to engage said plate for limiting the pivoting movement of the shank.

3. A trolley comprising a pole, a disk fixed to and projecting rearwardly from the upper end of said pole, a plate pivotally connected to said disk, said plate and disk provided with associated means for limiting the movement of the plate in either direction, a harp carrying a trolley wheel and provided with a shank, means for pivotally connecting said shank to said plate, rods carried by the pole and the shank, expansion springs connecting said rods together, and a pair of oppositely disposed L-shaped stops carried by the opposite sides of the shank and adapted to engage said plate for limiting the pivoting movement of the shank, the pivot for the shank being disposed at an angle with respect to the pivot of said plate.

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

ALVIN F. BEVARD.

Witnesses:

J. P. APPLEMAN,
MAX H. SROLOVITZ.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."