No. 749,601. PATENTED JAN. 12, 1904.

F. H. ALLEN.

TROLLEY HARP DEVICE.

APPLICATION FILED NOV. 2, 1903.

NO MODEL.

Fig. 1.

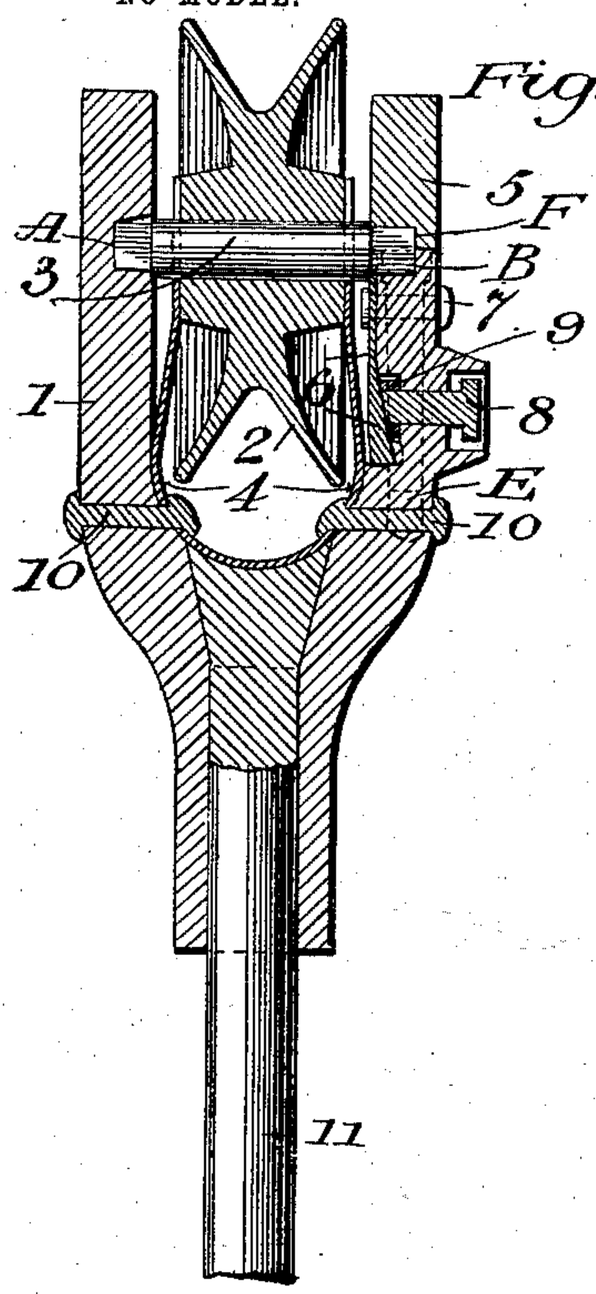


Fig. 2.

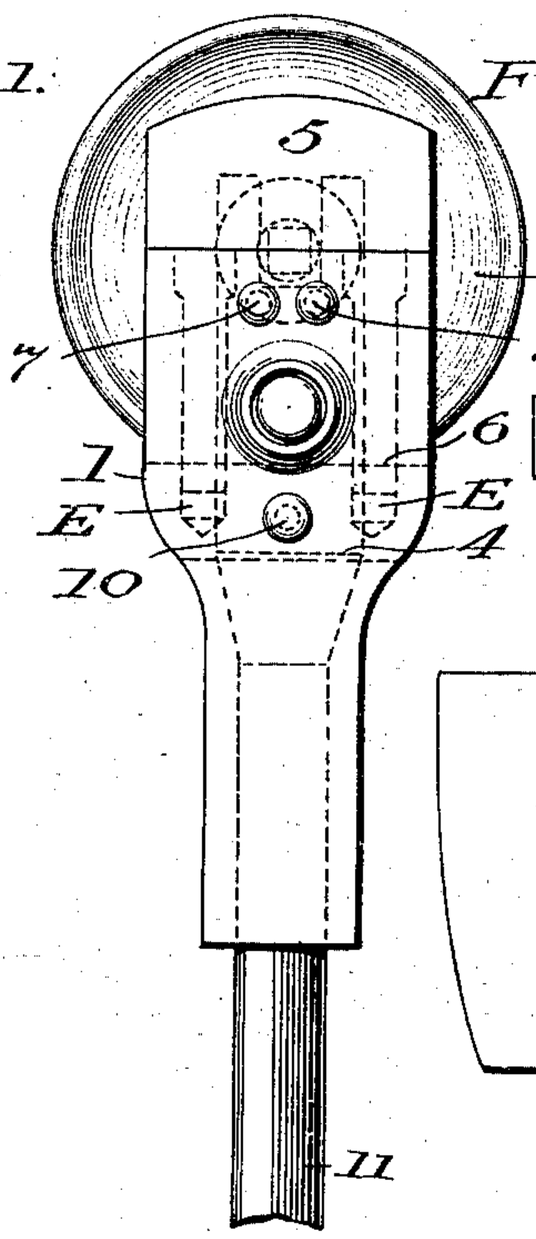


Fig. 11.

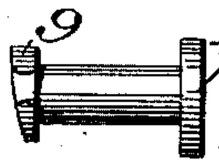


Fig. 7.

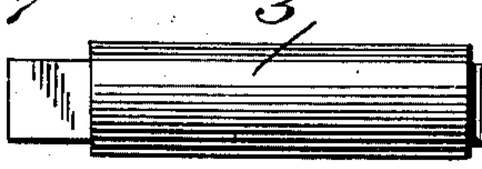


Fig. 8.

Fig. 9.

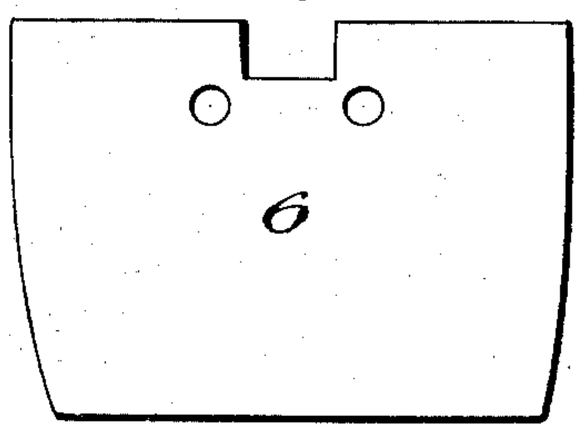


Fig. 10.

Fig. 3.

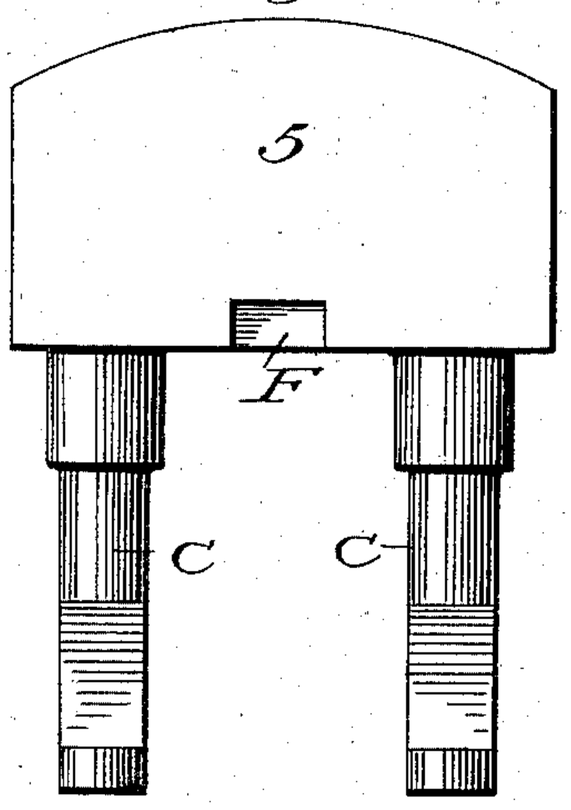


Fig. 4.

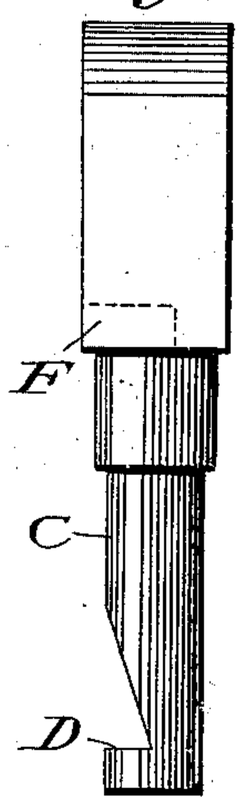


Fig. 5.

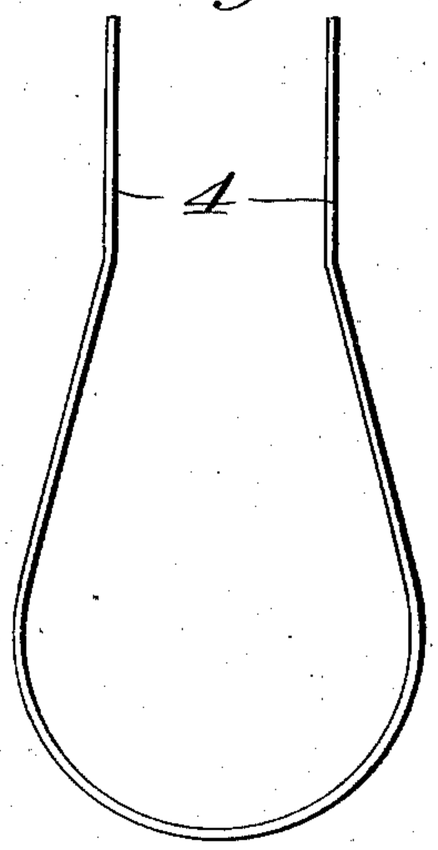
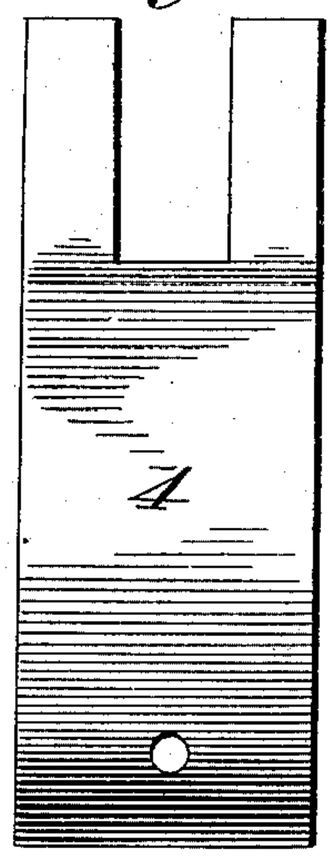


Fig. 6.



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No. 749,601. Patented January 12, 1904.

UNITED STATES PATENT OFFICE.

FREDERICK H. ALLEN, OF DUNKIRK, NEW YORK.

TROLLEY-HARP DEVICE.

SPECIFICATION forming part of Letters Patent No. 749,601, dated January 12, 1904.

Application filed November 2, 1903. Serial No. 179,436. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK H. ALLEN, a citizen of the United States, residing at the city of Dunkirk, county of Chautauqua, and State of New York, have invented a new and useful Improvement in Trolley-Harp Devices, of which the following is a specification.

My invention is an improved self-locking side-jointed trolley-harp, and relates particularly to the overhead system, but can be used on any system where trolley-wheels are used.

The object of my invention is to provide a trolley-harp for supporting the wheel and so arranged that the wheel can be easily and conveniently removed when worn out and a new one put in as occasion requires. I attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a sectional elevation of a trolley-harp embodying my invention. Fig. 2 is a side elevation of Fig. 1, presenting to view the side containing most of the mechanism. Fig. 3 is a side elevation of the removable portion of the trolley-harp to allow the removal of the trolley-wheel spindle. Fig. 4 is an end elevation of Fig. 3. Fig. 5 is an enlarged edge elevation of spring 4. Fig. 6 is a side elevation of Fig. 5. Fig. 7 is an enlarged view of the trolley-spindle 3, and Fig. 8 is an end view of same. Fig. 9 is a side elevation of the catch-spring 6, and Fig. 10 is an edge elevation or view of same. Fig. 11 is an enlarged view of push-button 8.

Similar letters and numerals refer to similar parts throughout the several views.

In carrying out my invention the general shape and style of trolley-harp is used.

1 is the body of the harp, which is attached to the pole or mast by shank 11 in the usual way.

A is a practically square socket cut in body 1 at the point shown, and B is one-half of a square socket cut in the opposite branch of body 1 at the point shown. Sockets A and B are to receive the shaft or spindle on which the wheel revolves and hold it in position and keep it from revolving.

E represents holes drilled in body 1, as shown.

2 is a sheave fastened in the trolley-harp and arranged to run on a trolley-wire.

3 is a spindle having square ends to keep it from rotating, on which the sheave 2 revolves.

4 is a flat brass U-shaped spring whose free ends straddle the spindle 3 and bear against the sides of the sheave 2, as shown. This is to keep sheave 2 in a central position and still allow a slight lateral movement upon the spindle 3, so it can accommodate itself to any unevenness in the trolley-wire.

5 is a portion of one side of the trolley-harp, which can be easily removed, carrying pins or projections C and having notches D therein, also having a portion of a square socket F.

6 is a spring-catch riveted close to one edge to the side of the trolley-harp, as shown, so as to allow the loose side to act as a spring to lock part 5 in position.

7 represents rivets to hold catch 6 in place.

8 is a push-button, upon which pressure may be applied to release the catch-spring 6 from part 5 to allow it to be withdrawn.

9 is a cap riveted on the back end of part 8 to keep it from falling out of body 1, as shown.

10 represents rivets to hold the U-shaped spring 4 in position.

To remove a worn-out sheave and substitute a new one, all that is necessary to be done is to take the trolley-harp in one hand, place the thumb on push-button 8, and exert sufficient pressure to force back catch-spring 6 a sufficient distance to release part 5, then with the other hand draw part 5 upward until it is free from body 1, set it to one side, take hold of the sheave 2 and lift it up a little until the spindle 3 is raised from its socket B, then take hold of spindle 3 with finger and thumb and draw it from the opposite socket A, then lift sheave 2 out, take spindle 3 from sheave and replace it in a new sheave, place the new sheave between the U-shaped spring, push the spindle 3 into socket A, press down spindle into socket B, then take part 5 and place pins C into holes E and press downward or together on part 5 until notches D pass catch-spring 6, when the catch springs into notches D and the work is completed.

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

1. In a trolley-harp device, a bifurcated harp-arm, having one of its sides cut off crosswise at the center of the trolley-sheave spindle to allow the removal of spindle 3, substantially as described.

2. In a trolley-harp device, the combination of a bifurcated harp-arm, a square socket in each of the inner sides opposite each other, a spindle having square ends arranged to fit in said square sockets, a sheave to rotate on said spindle, a flat spring arranged to keep said sheave in center of bifurcated arm, a removable portion of one of the branches at a point cutting one of the square sockets in halves and having pins mounted thereon, a notch cut near the outer end of each pin, a spring arranged to lock in said notches, a device for forcing back said spring and all arranged and combined to lock the removable portion in place by the self-locking device.

3. In a trolley device, the combination of a bifurcated harp-arm, arranged to be secured to the trolley-pole by a shank in the usual manner, one branch of said arm being cut off near the upper end and fitted on with pins, mechanism for retaining said pins in position and mechanism for releasing said pins, substantially as described.

4. In a trolley-harp device, the combination of a bifurcated harp-arm, square sockets cut in the inner faces directly opposite each other, one of the branches cut off in the center of the square socket perpendicular to the length of the harp, pins fitted in the portion cut off and having a notch cut near the end thereof, a spring locking device arranged on the stationary portion of the cut-off branch, holes bored in the stationary portion of the cut-off branch to receive the pins or projections on the part cut off, a round pin or spindle having squared ends arranged to fit in the square socket, and all arranged so that when the projections on the part cut off are pressed down into the holes made to receive them they are locked fast by the locking device, substantially as described.

5. In a trolley-harp device, the combination of a bifurcated harp-arm having a square socket cut in each inner side directly opposite each other, one of the sides cut off in the center of one of the square sockets perpendicular to the length, and fitted with pins, having notches cut near the outer ends, holes bored in the body to receive said pins, a locking device to lock said pins in position, and a push-button to release said locking device and allow said pins to be drawn out, substantially as described.

6. In a trolley-harp device, a bifurcated harp-arm, having one of its sides cut off crosswise at the center of the trolley-sheave spindle, and having a part arranged and fitted to complete said cut-off side and to hold the spindle 3 in position, substantially as described.

7. In a trolley-harp device, a bifurcated harp-arm having square sockets cut in the inner opposite sides of the arm part way through the sides, and having one of the sides fitted with a removable cap, which parts one of the square sockets in the center, a round spindle having squared ends arranged to fit in said square sockets, a spring-catch attached to one of the branches and so arranged as to lock said removable cap in position, mechanism for operating said spring-catch to allow the removal of said cap, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FREDERICK H. ALLEN.

Witnesses:

E. F. SOUTHWICK,

ELIZABETH S. DOHERTY.