

No. 750,818.

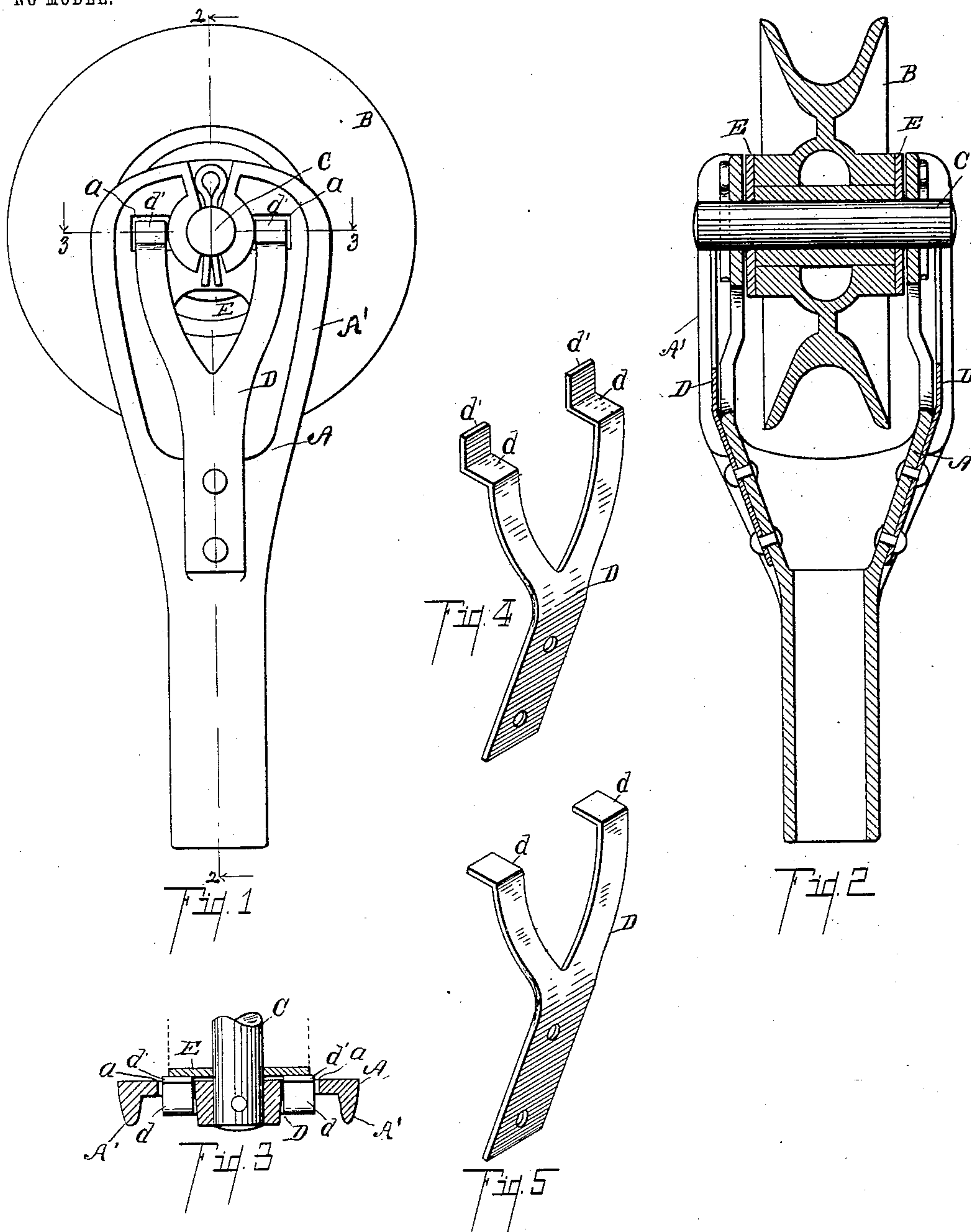
PATENTED FEB. 2, 1904.

F. P. CROCKETT & O. P. JOHNSON.

TROLLEY HARP OR FORK.

APPLICATION FILED APR. 4, 1903.

NO MODEL.



Witnesses:

A. J. Adams
Otis A. Earl

Inventors:

Fred P. Crockett *O. P. Johnson*
By *Fred L. Chappell*
Att'y.

UNITED STATES PATENT OFFICE.

FRED P. CROCKETT AND OSRO PRENTISS JOHNSON, OF KALAMAZOO,
MICHIGAN.

TROLLEY HARP OR FORK.

SPECIFICATION forming part of Letters Patent No. 750,818, dated February 2, 1904.

Application filed April 4, 1903. Serial No. 151,104. (No model.)

To all whom it may concern:

Be it known that we, FRED P. CROCKETT and OSRO PRENTISS JOHNSON, citizens of the United States, residing at the city of Kalamazoo, in the county of Kalamazoo and State of Michigan, have invented certain new and useful Improvements in Trolley Harps or Forks, of which the following is a specification.

This invention relates to improvements in trolley harps or forks. It is in some respects a modification or adaptation of the structure appearing in Patent No. 690,639, issued to us on the 7th day of January, 1902.

The objects of the invention are to provide an improved trolley-harp in which the parts contacting with the wheel are massive, so that they will not be quickly consumed by wear.

A further object is to provide an improvement in trolley-harps in which the delicate portions are protected by heavy parts from wear and from damage from blows and the like.

Further objects will definitely appear in the detailed description to follow.

We accomplish the objects of our invention by the devices and means described in this specification.

The invention is clearly defined and pointed out in the claims.

A structure embodying the features of our invention is fully illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation view of a structure embodying the features of our invention, the trolley-wheel being shown in position in the same. Fig. 2 is a longitudinal sectional view of the same, taken on line 2 2 of Fig. 1. Fig. 3 is a detail transverse sectional view taken on line 3 3 of Fig. 1. Fig. 4 is a detail perspective view of one of the springs D. Fig. 5 is a perspective view of the spring D with the upturned portion *d'* of the fingers omitted.

In the drawings the sectional views are taken looking in the direction of the little arrows at the ends of the section-lines, and similar letters of reference refer to similar parts throughout the several views.

Referring to the lettered parts of the drawings, the harp A is divided into side plates above, and these are provided with outwardly-projecting flanges or ribs A'. The lower part of the harp is hollow and adapted to be secured to the trolley-pole in the usual manner. The side plates of the harp are perforated to receive the journal-pin C, upon which the trolley-wheel B is supported. The side plates are preferably rounded in contour, so as not to readily engage any exterior object.

Secured to the body portion of the harp by suitable rivets or the like are springs D, which extend upwardly between the ribs A' and are protected from injury thereby. These springs are forked at the upper end, with their ends formed into inwardly-extending fingers *d*. The side plates of the harp are provided with openings *a* at each side of the journal-pin C, through which the fingers extend to contact with and apply pressure to the washers E, which lie against the hubs of the trolley-wheel. To add to the contact-surface of the spring D with the washer E, we turn the inbent ends or fingers of the springs at *d'*. By this arrangement of the parts pressure is applied to the washers E, so that there is an even wear upon the same and a contact is maintained at all times. The washer E may be a heavy one without adding materially to the width of the structure. If worn, it may be quickly and easily replaced. The spring is protected from wear and is also protected from damage by exterior objects and is in position where it is least liable to be injured by sparking or arcs. Also by maintaining perfect contact the life of the trolley-wheel is greatly prolonged.

We have described our improved trolley-harp in what we believe to be the simplest form. We are aware, however, that it can be varied very considerably in structural details without departing from our invention. The form of the spring D is capable of considerable variation, or two springs might be substituted therefor. Other structural changes will no doubt be readily suggested and apparent to those skilled in the art to which our invention pertains.

Having thus described our invention, what

we claim as new, and desire to secure by Letters Patent, is—

1. The combination of a harp divided into forks above, having openings *a* therethrough; an outwardly-projecting rib *A'* thereon; a trolley-wheel; a journal-pin therefor; a washer on said journal-pin; and a forked spring *D* secured to the outside of said harp and extending upwardly between said ribs, having its forked ends formed into fingers to engage said washer through said openings, for the purpose specified.

2. The combination of a harp divided into forks above, having openings *a* therethrough; a trolley-wheel; a journal-pin therefor; a washer on said journal-pin; and a forked spring *D* secured to the outside of said harp, having its forked ends formed into fingers to engage said washers through said openings, for the purpose specified.

3. The combination of a harp divided into

forks above, having perforations therethrough; a trolley-wheel; a journal-pin therefor; a washer on said journal-pin; and a spring secured to the outside of said harp, having fingers adapted to engage said washer through said openings, for the purpose specified.

4. The combination of a trolley-harp; a trolley-wheel; a contact-washer adapted to rest against said wheel; suitable openings in said harp and a spring secured to the outside of said harp adapted to extend through said openings to engage said contact-washer, for the purpose specified.

In witness whereof we have hereunto set our hands and seals in the presence of two witnesses.

FRED P. CROCKETT. [L. s.]

OSRO PRENTISS JOHNSON. [L. s.]

Witnesses:

A. IRENE ADAMS,

OTIS A. EARL.