

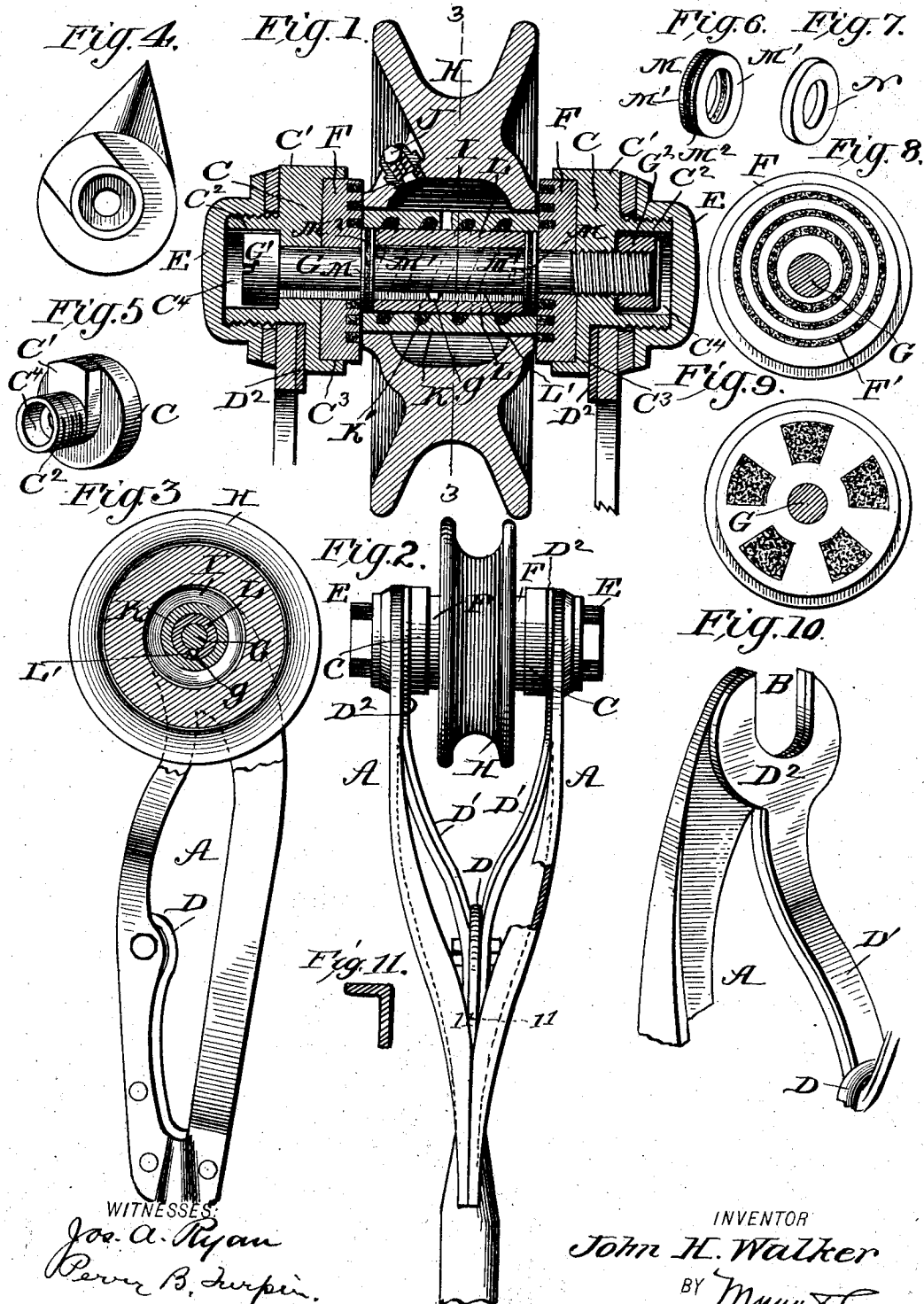
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J. H. WALKER.
TROLLEY.

APPLICATION FILED APR. 29, 1903.

NO MODEL.



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TROLLEY.

SPECIFICATION forming part of Letters Patent No. 761,564, dated May 31, 1904.

Application filed April 29, 1903. Serial No. 154,844. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. WALKER, a citizen of the United States, and a resident of Lexington, in the county of Fayette and State of Kentucky, have made certain new and useful Improvements in Trolleys, of which the following is a specification.

My invention is an improvement in trolleys; and it consists in certain novel constructions and combinations of parts, as will be herein-after described and claimed.

In the drawings, Figure 1 is a detail sectional view of the trolley-wheel in place in connection with the upper portion of the harp. Fig. 2 is an elevation of the harp with the wheel and connected parts applied. Fig. 3 is a cross-section on line 3 3 of Fig. 1. Fig. 4 is a side elevation of a form of carrier-block provided with a spur to prevent the wire from slipping between the wheel and prongs. Fig. 5 is a detail perspective view of one of the carrier-blocks without such spur. Fig. 6 is a detail perspective view of the combined metallic and flexible gasket. Fig. 7 is a detail perspective view of the plain gasket. Fig. 8 is a side elevation of the inner face of one of the end thrust-plates. Fig. 9 is a similar view showing a modified form of recess. Fig. 10 is a detail perspective view of the upper portion of one of the forms of the harp, and Fig. 11 is a detail cross-section on line 11 11 of Fig. 2.

In carrying out my invention I construct the harp with the prongs A A, which are slotted in their upper ends at B to receive the bosses C' on the carrier-blocks C, and these prongs are made in angle form in cross-section, as will be understood from Figs. 2 and 10, thus producing an L-shaped cross-section of prong which operates to resist any undue lateral springing of the prongs and give the prongs the desired rigidity in the use of the invention. The conductor-wire D is provided with the branches D', whose upper ends are formed to produce the flat heads D², which lap against the inner sides of the prongs A and extend along the edges of the slots B and form conductor-bearings, against which the carrier-blocks bear at their outer sides, as will be understood from Figs. 1 and 2 of the drawings.

I thus provide a broad flat conducting-surface between the carrier-blocks and the heads of the branches of the conductor-wire, such conducting-surfaces extending throughout the greater portion of the outer faces of the carrier-blocks, as will be understood from Figs. 1 and 10.

The carrier-blocks C are provided with bosses C' to fit in the slots B of the prongs and with the outwardly-projecting socketed stems C², which are threaded on their outer sides to receive the cap-nuts E and are recessed in their inner faces at C³ to receive the thrust-plates or washers F, as shown in Fig. 1. The sockets C⁴ in the stems C² receive the bolt-head or nut, as shown in Fig. 1, while the inner sockets C³ receive the thrust-plates or washers, which fit therein and have a broad contact-surface with the carrier-blocks. These carrier-blocks and the thrust-plates or washers also have a conducting contact with the bolt G, so that any current received by the central portion of the said bolt will be carried off through the thrust-plates and carrier-blocks, as will be understood from Fig. 1. The thrust-plates are provided in their inner faces with recesses for dry lubricant, preferably graphite, in the faces which contact with the opposite ends of the wheel. In Fig. 8 I show the recesses in the form of circular grooves F', which are eccentric to the shaft G, so that as the wheel revolves concentrically with the said shaft G, I am able to avoid any tendency to form grooves in the ends of the wheel by reason of the grooves in the thrust-plates, as the end surfaces of the wheel moving over the eccentric grooves in the thrust-plates will tend to grind smooth at all times. I therefore prefer to make the graphite-recesses in the eccentric form shown in Fig. 8; but manifestly the form of said recesses may be varied and they may, if desired, be in the form shown in Fig. 9.

The wheel H has an oil-cavity I and a spring closing-valve J to facilitate supplying oil to the cavity I by means of an ordinary oiling-can or otherwise, as may be desired. This wheel has a hub-tube K, which may be suitably secured in the wheel and is provided in its bore with spiral grooves K', supplied with

graphite and operating upon a bushing-tube L, which latter is keyed on the shaft G by means of the pin g on said shaft operating in the keyway or groove L' of the bushing L, as will be understood from Figs. 1 and 3 of the drawings. The bushing L is made shorter than the hub-sleeve K, and washers M are provided upon the bolt G and fitting within the ends of the hub-tube K and against the ends of the bushing L, as shown in Fig. 1. The washers M, fitting against the ends of the bushing and within the ends of the hub-tube, decrease the length of bearing of said hub-tube on the bushing and permit the hub-tube to extend at its ends into direct contact with the thrust-plates, as shown in Fig. 1. The washers M may be of the composite construction shown in Fig. 6, in which metallic washers M' are secured on opposite sides of the flexible gasket M², which latter may be of rawhide or other suitable material, or I may use plain rawhide or similar gaskets, as shown at N in Fig. 7.

In the practical use of my invention the thrust-plates or washers and carrier-blocks may be made of copper, brass, or other material of high conductivity, and the current will be carried by practically a copper conductor from the wheel to the motor. It will also be noticed the construction is simple, and I arrange for avoiding any frictional wear upon the bolt or pin G, which extends from side to side of the trolley. This bolt G has a head G' at one end and a suitable nut G² at its other end, said bolt and nut being housed in the sockets of their respective carrier-blocks and covered by the cap-nuts, as shown in Fig. 1.

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

1. The improvement in trolleys herein described, comprising the harp having its prongs slotted to receive the bosses on the carrier-blocks, the carrier-blocks having bosses fitting in said slots, and provided at their outer sides with the socketed externally-threaded stems and having the recesses in their inner faces, the connecting-bolt extending from side to side of the trolley having the head at one end and the nut at the other end fitting in the outer sockets of their respective carrier-blocks, the cap-nuts on the stems of the carrier-blocks, the thrust-plates or washers fitting in the inner sockets of the carrier-blocks, the bushing or tube keyed on the bolt, the washers on the bolt and fitting against the ends of the bushing, and the wheel having the hub-tube made longer than the bushing whereby it will fit over the washers, said wheel being arranged to turn upon the bushing and to bear at its

ends against the thrust-plates, substantially as and for the purposes set forth.

2. The combination in a trolley, with the carrier-blocks, a connecting-bolt and the opposite thrust-plates of a wheel supported between and bearing at its ends against the said thrust-plates the carrier-block receiving said thrust-plates and supports for said blocks, substantially as set forth.

3. The combination of the harp-prongs, having openings for the carrier-blocks, the wheel, carrier-blocks fitting and held in the openings of the harp-prongs, devices outside the harp-prongs for securing said blocks, the shaft supported in the blocks and carrying the wheel, and intermediate devices between the wheel and carrier-blocks, substantially as set forth.

4. The combination of the shaft, the wheel, the harp, the devices for supporting the shaft from the harp, the bushing on the shaft, and held from turning thereon, and a device connected with the wheel and inclosing the bushing, substantially as set forth.

5. The combination of the harp, the shaft means for supporting the shaft from the trolley-harp, the bushing held from turning on the shaft, the wheel turning on the bushing and projecting at its ends beyond the ends of said bushing and the thrust-plates at the opposite sides of the wheel, substantially as set forth.

6. The combination in a trolley, with the wheel, and the harp, of thrust-plates at the opposite sides of the wheel, and a bushing within and on which the wheel turns, said bushing being spaced at its ends away from the thrust-plates, substantially as set forth.

7. The combination of the shaft, the bushing held from turning on the shaft, washers on the shaft and fitting against the ends of the bushing, the wheel having a hub-sleeve extending over the washers and turning on the bushing, and the thrust-plates at the ends of the wheel, substantially as set forth.

8. The combination of the trolley-harp, the carrier-blocks, means for securing the blocks to the harp, and thrust-plates, fitting within the carrier-blocks, the cross bolt or shaft, the bushing held from turning thereon and a device inclosing said bushing between the thrust-plates, and bearing against the latter, substantially as set forth.

9. The combination in a trolley with the harp and the wheel of a plate arranged to receive the thrust of the wheel and a block supported by the harp and carrying said plate.

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