No. 648,834. Patented May 1, 1900.

C. H. BIERBAUM.

TROLLEY.

(Application filed Jan. 20, 1900.)

(No Model.)

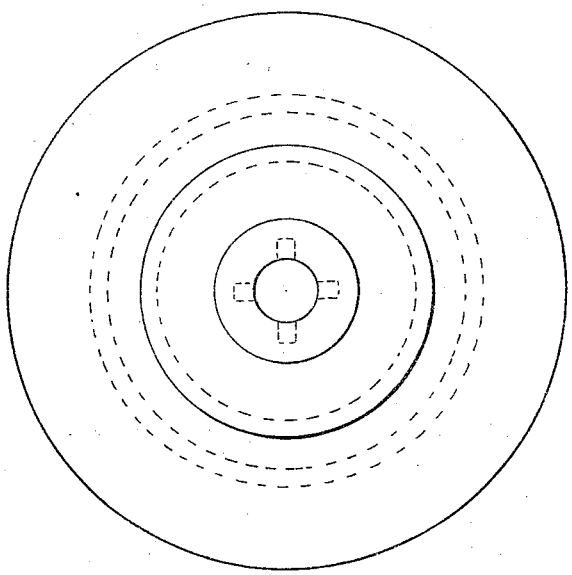

Fig. I.

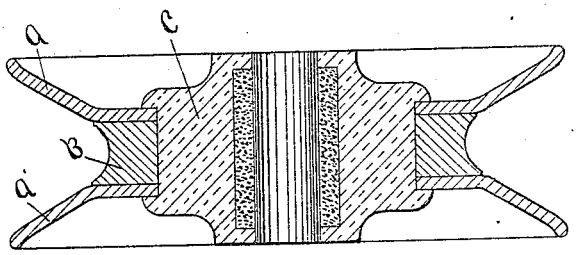

Fig. II.

Witnesses,
S. B. Merrick.
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UNITED STATES PATENT OFFICE.

CHRISTOPHER H. BIERBAUM, OF BUFFALO, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE BIERBAUM & MERRICK METAL COMPANY, OF SAME PLACE.

TROLLEY.

SPECIFICATION forming part of Letters Patent No. 648,834, dated May 1, 1900.

Application filed January 20, 1900. Serial No. 2,097. (No model.)

To all whom it may concern:

Be it known that I, CHRISTOPHER H. BIERBAUM, a citizen of the United States, residing at Buffalo, in the county of Erie, State of New York, have invented a new and useful Trolley-Wheel for Electric Cars, of which the following is a full specification.

My invention relates to trolley-wheels of the sectional or built-up type, and has for its object to provide a wheel that can be constructed for the least possible first cost and at the same time be very serviceable by having a long life and extreme lightness. These and other objects in view will readily appear as the nature of the invention is described with reference to the accompanying drawings.

In the drawings, Figure 1 is a side elevation of the trolley-wheel. Fig. 2 is a transverse section of the same.

Referring to Fig. 2, A and A' represent two stamped flange-plates made of any suitable sheet metal, and B a ring made of a suitable good electrical conductor, as copper, bronze, or brass, with a groove on its outer edge for engaging with the trolley-wire, all held together firmly by the metal body C, the same constituting the hub. The flange-plates A and A' can be made by any person familiar with the art of metal-stamping, and the ring B can be made either as a turned-up casting or as a finished short section of a tube, and the assembling of this wheel is still more simple. The plates A and A' and the ring B are placed in a sand mold, having their relative positions to each other. The body of metal C is then poured in. The making of the mold and the pouring of the metal involve no difficulty and can be performed by any molder of ordinary skill and intelligence. This hub construction, however, is made possible by the use of an alloy covered by United States Patent No. 632,442, dated September 5, 1899, and an exact proportion of the constituents that are suitable for this purpose is zinc eighty-six, copper ten, and aluminium four. The special valuable characteristics of this alloy for this purpose are these: It has a comparatively-low melting-point, and for this reason when poured in and upon the other parts will not heat them to distortion before it itself cools. It has no tendency to break while cooling or solidifying, and for these reasons it binds and holds the other parts very securely.

Special attention is directed to the specific advantages of this trolley-wheel. The flanges are made of the lightest plate consistent with strength. The tread or ring B is made of the best electrical conductor consistent with wearing qualities, and the body C (an integral part of the wheel) performs a twofold function in being the connecting and binding member for holding the different parts of the wheel together in the most practical and rigid manner. It also constitutes the hub of the wheel. The lightness of this metal and its superior antifriction qualities make this hub construction a most efficient and economic one. In addition, this wheel possesses all the advantages that built-up wheels ordinarily have over cast wheels—namely, that of being perfectly balanced.

Changes in the form and proportion of parts and the detailed construction of that herein shown may be resorted to. Also the composition of the alloy for the hub may be varied somewhat without departing from the principle or sacrificing any of the advantages of my invention.

I am aware that sectional or built-up trolley-wheels are not new, as a number of patents have already been granted for different forms and types of this wheel, such as No. 559,461, dated May 5, 1896, and No. 638,470, dated December 5, 1899. I am also aware of the fact that vehicle-wheels in general have been made of parts held together by a hub cast in and around these parts, such wheels as are commonly used in agricultural machinery. I therefore do not lay claim to the broad invention of these features; but

What I do specifically claim as new, and desire to secure by United States Letters Patent, is—

1. A trolley-wheel consisting of a central ring, supported between two flange-plates, said flange-plates being held by the hub and

said hub being cast on in the manner specified.

2. A built-up trolley-wheel comprising a central ring, or tread, held between two stamped flange or side plates, all held together and in place by the hub: said hub being cast on.

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

CHRISTOPHER H. BIERBAUM.

Witnesses:

EDWARD M. SHELDON,

S. B. MERRICK.