(No Model.)

E. VERSTRAETE.

TROLLEY WHEEL AND BEARING.

No. 544,471. Patented Aug. 13, 1895.

Fig. 1.

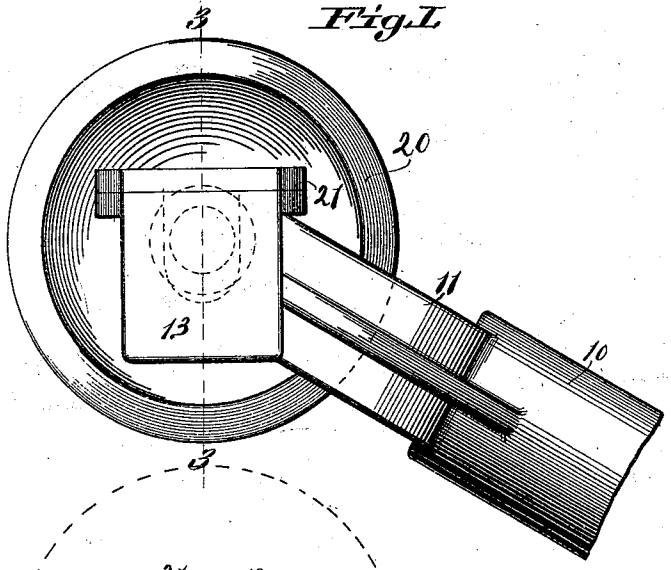


Fig. 4.

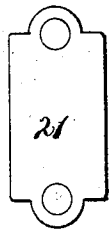
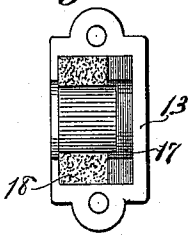


Fig. 5.



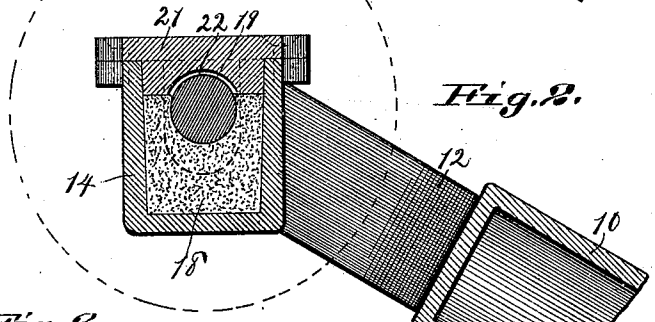


Fig. 2.

Fig. 3.

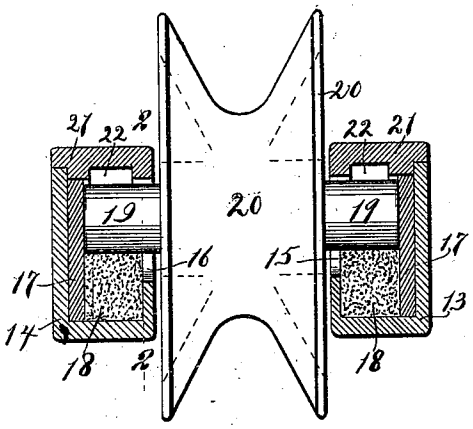
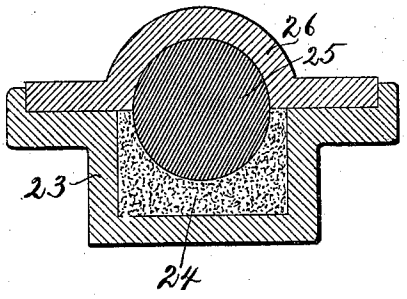


Fig. 6.



Attest:

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Charles Pickles

Inventor:

Edmond Verstraete

UNITED STATES PATENT OFFICE.

EDMOND VERSTRAETE, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-THIRD TO ERNEST G. BRUCKMAN AND SAMUEL E. BRUCKMAN, OF SAME PLACE.

TROLLEY WHEEL AND BEARING.

SPECIFICATION forming part of Letters Patent No. 544,471, dated August 13, 1895.

Application filed November 22, 1894. Serial No. 529,633. (No model.)

To all whom it may concern:

Be it known that I, EDMOND VERSTRAETE, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Trolley Wheels and Bearings; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

The object of this invention is to provide a journal-bearing in which carbon is employed as the bearing-surface, and relates specifically to an improvement in trolley-wheels, whereby the shaft or spindle of the wheel is seated in and bears upon a surface of baked carbon.

My invention consists in the construction of a journal-bearing of baked carbon, whereby the friction of the bearing-surfaces is materially reduced and the consequent wear minimized.

My invention consists, further, in the combination of the trolley-wheel having a shaft or axle, a trolley-pole having a bearing-box on its upper end, and a lining or bearing of baked carbon mounted in said box and adapted to receive and support the said shaft or axle in bearing-contact therewith.

My invention consists, further, in the construction, arrangement, and combination of parts, hereinafter set forth, pointed out in my claims, and illustrated by the accompanying drawings, in which—

Figure 1 is a side elevation of a complete trolley-head embodying my invention. Fig. 2 is a sectional elevation of the bearing-box on the line 2 2 of Fig. 3. Fig. 3 is a transverse sectional elevation on the line 3 3 of Fig. 1. Fig. 4 is a plan view of the cap for the bearing-box. Fig. 5 is a plan view of the bearing-box with the cap removed. Fig. 6 is a sectional elevation showing my device adapted for common journal-bearings.

In the construction of the device as shown, the numeral 10 designates a trolley-pole having a bifurcated upper extremity comprising arms 11 12, to the outer ends of which arms are integrally fixed boxes 13 14, which boxes are independent of each other. The boxes 13 14 are mounted in transverse alignment with each other, and their adjacent faces are provided with slots 15 16 respectively, which slots are approximately elliptical in elevation.

Mounted in each of the boxes 13 14 and in contact with the outer wall thereof is a plate 17 of vulcanized fiber, whereby longitudinal movement of the wheel-shaft is prevented and an antifriction non-conducting bearing for the ends of said shaft is provided. This construction is desirable to prevent flow of current through the ends of the axle-shaft and thereby prevent binding and friction at such points. The boxes 13 14, respectively, have mounted in the lower portion thereof a body of baked carbon 18, in the upper surface of which carbon body is formed a concaved seat, the two concaved seats being adapted to receive and support the opposite end portions of a shaft or axle 19, which shaft is seated therein by a downward movement through the slots 15 16, respectively, the ends of said shaft abutting against the vulcanized fiber-plates 17 17. Mounted on the shaft or axle 19 is a trolley-wheel 20 of common form. Each of the boxes 13 14 is provided with a cap-plate 21, Fig. 4, having a concaved notch 22 in its lower face aligning with the concaved seats in the baked carbon and located, when the device is complete, above and out of contact with the axle 19, thus providing that the axle 19 does not contact with the said caps, thus lessening the contact-surface of the axle and carbon bearings and providing for such wear of the carbon as will provide for a perfect contact of the axle therewith at all times.

In the construction shown in Fig. 6 the numeral 23 designates the lower member of a bearing-box having a body of baked carbon 24 therein, in which is formed a seat for a shaft 25, the said shaft being confined in contact with the said carbon by an upper member or cap 26.

Experiment has demonstrated great utility to be possessed by the employment of baked carbon as a bearing-surface, and in the device I have described and illustrated it will be observed that the trolley-wheel, being held in contact with the line conductor by the

trolley-stand resilience, the bearing-surface of the axle must at all times be against the carbon body, by this means materially reducing the friction of said axle and lessening the wear of the bearing and axle, thus lengthening the life and usefulness of the trolley-wheel.

I have found a carbon bearing-surface to be highly efficient in all positions where means may readily be provided for confining the carbon body in such a manner as to provide that the journal will be in constant engagement therewith, and have found that at all times the said carbon body resists wear to a high degree and extends a minimum amount of friction to the rotation of the journal.

Experience has demonstrated that when a trolley-head is so constructed as to permit of a flow of the current through the ends of the trolley-shaft into a bearing in contact therewith the attraction of the bearing for the shaft is such as to impede the free revolution of said shaft and add materially to the friction of the contact, which result I have avoided in the use of the fiber plates 17 17, which plates also provide antifriction lateral bearings of great efficiency for said shaft. I have also found that the resilience of the trolley-stand, exerted against the resistance of the overhead conductor, presses the trolley-shaft against the lower members of the bearings in which it rotates, and the current will flow in sufficient quantities through the portion of said shaft below the axis thereof, and therefore I have cut away the caps of the bearings forming notches 22 22, and thereby lessen materially the friction of the shaft by reducing its bearing-surface without reducing its diameter.

What I claim is—

1. In a device of the class described a journal-box, a carbon journal bearing mounted in said box, a vulcanized fiber plate mounted in said box, a shaft mounted in said box resting on said carbon and abutting against said vulcanized fiber plate, whereby flow of current through the ends of said shaft is prevented, and a cap confining said shaft within said box.

2. In a device of the class described the combination of the pole 10, the arms 11, 12 on said pole, boxes 13, 14 fixed to said arms, vulcanized fiber plates 17 vertically positioned in said boxes, carbon bearings 18 mounted in said boxes and having open-topped bearing seats therein, a shaft 19 mounted for rotation in the seats of said carbon bearings and abutting against said plates 17, a trolley wheel 20 mounted on said shaft 19, and cap plates 21, mounted on said boxes 13, 14, which cap plates 21 have notches 22 in their lower faces so shaped that said cap plates are out of engagement with said shaft, as set forth.

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

EDMOND VERSTRAETE.

Witnesses:
S. C. SWEET,
CHARLES PICKLES.