(No Model.)

J. E. ATWOOD & G. W. SWETT.

Car Wheel.

No. 242,858. **Patented June 14, 1881.**

Fig. 1.

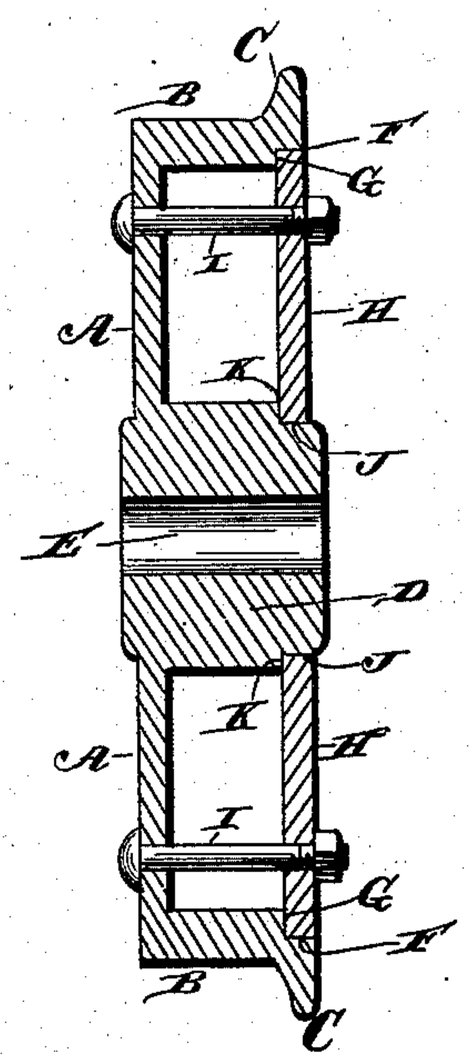
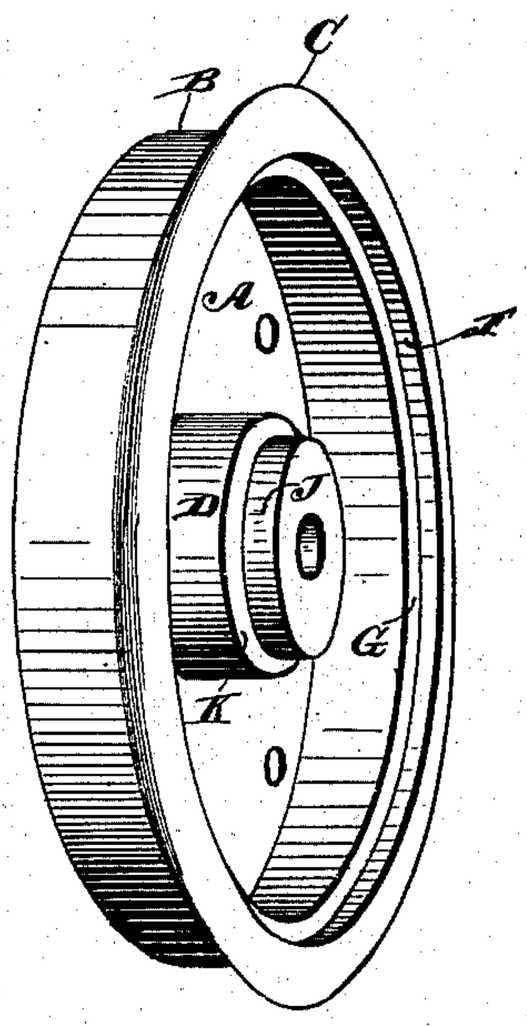
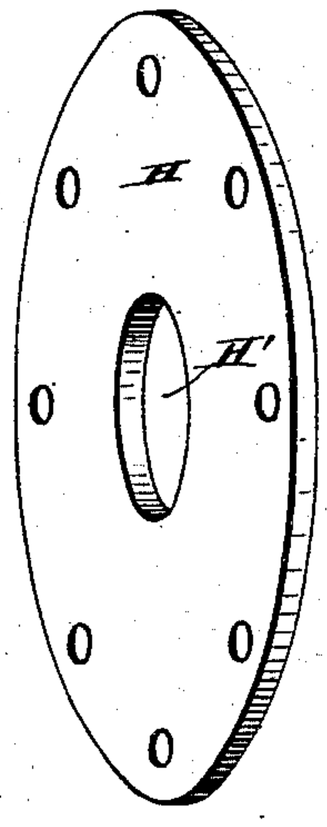


Fig. 2.





Witnesses.
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UNITED STATES PATENT OFFICE.

JAMES E. ATWOOD AND GEORGE W. SWETT, OF TROY, NEW YORK.

CAR-WHEEL.

SPECIFICATION forming part of Letters Patent No. 242,858, dated June 14, 1881.

Application filed May 2, 1881. (No model.)

To all whom it may concern:

Be it known that we, JAMES E. ATWOOD and GEORGE W. SWETT, both citizens of the United States, residing at Troy, in the county of Rensselaer and State of New York, have invented new and useful Improvements in Car-Wheels, of which the following is a specification.

This invention relates to certain improvements in that class of car-wheels in which the tread, web, and hub are of cast metal in a single piece.

The object of our invention is to provide a car-wheel which will possess the lightness so desirable in what are known as "paper wheels"—that is, a car-wheel composed of a compressed paper or paper-pulp body and a separate metallic tire. These car-wheels are very objectionable, because the paper is affected by moisture and soon becomes disintegrated, and therefore useless; but owing to their light and compact nature they would be exceedingly desirable if they were capable of practical use.

In our invention we embody the desirable features of lightness and compactness, while we provide a metallic car-wheel capable of withstanding excessive strains and the wear to which they are necessarily subjected.

Our invention is clearly illustrated in the structure represented in the accompanying drawings, in which—

Figure 1 represents a central sectional view of a car-wheel constructed according to our invention, and Fig. 2 detached perspective views of the parts composing the wheel.

The letter A indicates the web of the wheel, having straight or plane inner and outer surfaces, and formed at its periphery into the tread B and flange C, and at its center into a laterally-projecting hub, D, having the usual aperture, E, for the journal of the car-axle. The hub, tread, and flange are all arranged at one side of the plane web, and thereby provide an interior unobstructed space between the outer surface of the hub and the inner surface of the tread. The inner surface of the tread is recessed to form an annular seat, F, terminating in a square shoulder, G, and to this seat is snugly fitted an annular ring or cap-plate, H, having a central annular passage, H′, through which the hub D projects. This ring or cap-plate is secured in position against the shoulder G by means of the transverse bolts I and suitable retaining-nuts, and with the ring or cap-plate in position there still remains the annular unobstructed space within, whereby the lightness of the wheel is rendered possible, because the parts can be cast comparatively light or thin, while all parts of the structure are uniformly braced and sustained. The edges of the opening H′ in the ring or plate H rest firmly upon an annular contracted seat, J, formed at the outer portion of the hub, such contracted seat forming an annular shoulder, K, against which the inner margin of the ring or cap-plate abuts and is sustained against inward compression or displacement. The periphery of the ring or cap-plate rests against the seat F formed on the inner surface of the wheel, and the annular shoulder G serves as an abutment, against which the outer margin of the ring or cap-plate abuts and is prevented from inward compression or displacement. It will be observed that owing to the structure composing the wheel every part acts as a strut or brace to the other, rendering it practicable to make the web with plane surfaces and comparatively thin, and the interior constituting a free and unobstructed space, thereby securing the advantages of lightness and compactness, and producing a car-wheel which can be employed as a substitute for a paper car-wheel, while it avoids the objections to the latter.

We are, of course, aware that a car-wheel has been cast in a single piece with a curved web, a hub, and a flanged tread; but such, broadly, we do not claim.

What we claim is—

A car-wheel formed integral with a plane web, a laterally-projecting hub, and a flanged treading-surface having on its inner surface an annular shouldered seat, on which is secured a ring or cap-plate, substantially as described.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

JAMES E. ATWOOD.
GEO. W. SWETT.

Witnesses to the signature of James E. Atwood:

ALBERT H. NORRIS,
JAMES A. RUTHERFORD.

Witnesses to the signature of George W. Swett:

CHARLES D. KELLUM,
EUGENE L. PELTIER.