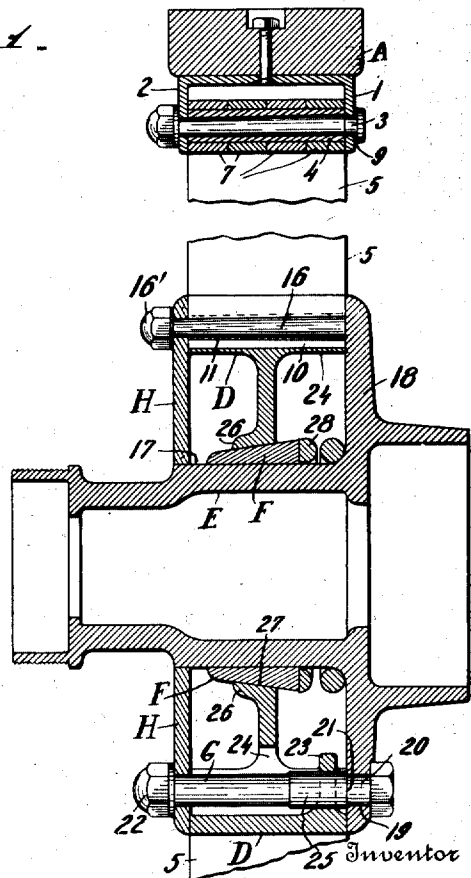
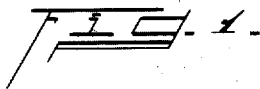
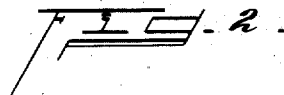
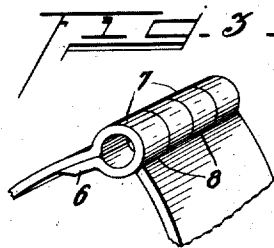
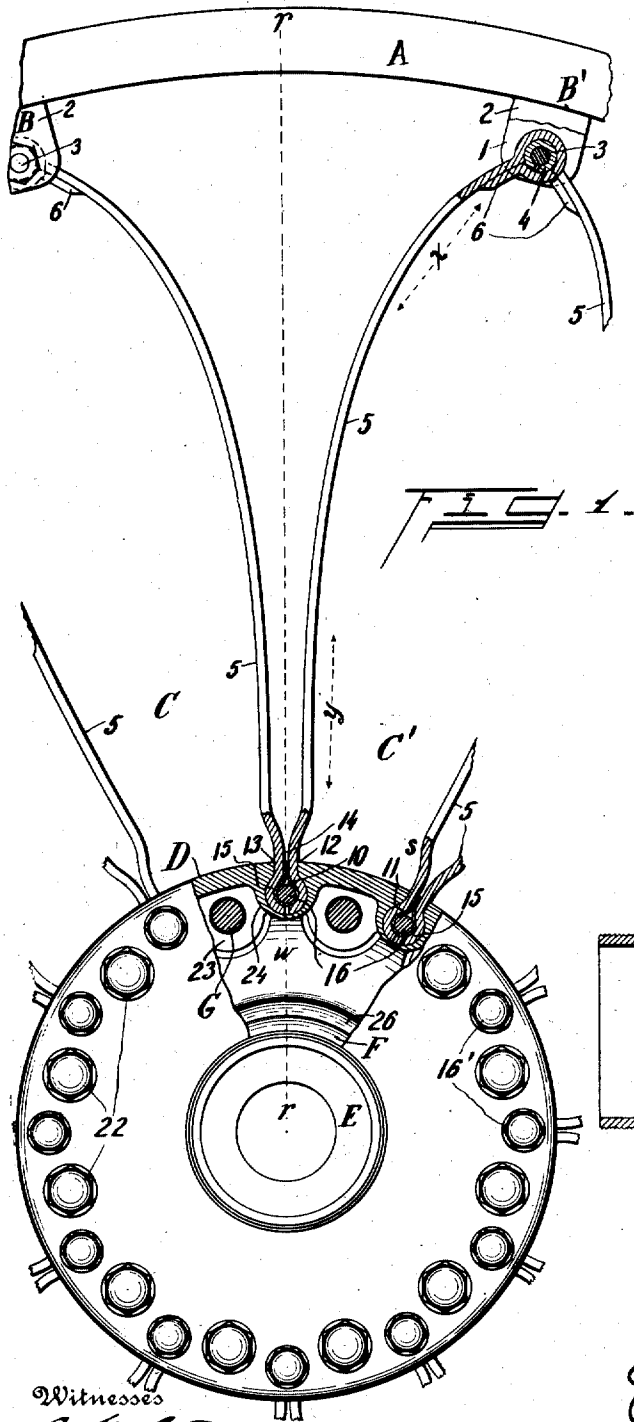


J. E. STRIETELMEIER.
 SELF CENTERING DEMOUNTABLE WHEEL.
 APPLICATION FILED SEPT. 10, 1913.

1,227,852.

Patented May 29, 1917.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN E. STRIETELMEIER, OF CINCINNATI, OHIO, ASSIGNOR TO THE IDEAL WHEEL COMPANY, OF CINCINNATI, OHIO, A CORPORATION OF OHIO.

SELF-CENTERING DEMOUNTABLE WHEEL.

1,227,852.

Specification of Letters Patent.

Patented May 29, 1917.

Application filed September 10, 1913. Serial No. 789,211.

To all whom it may concern:

Be it known that I, JOHN E. STRIETELMEIER, a citizen of the United States, and residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and Improved Self-Centering Demountable Wheel, of which the following specification is a full disclosure.

This invention relates to all-metal wheels and it proposes, (1) a structure utilizing bent sheet metal spokes assembled by means of few parts yet providing for ready replacement, (2) a spoke arrangement affording durability combined with easy riding qualities, (3) a superior wheel-unit capable of use with any type of hub, (4) a construction especially suitable for an immediate substitution in place of wooden-spoked wheels while yet employing the old axle fitting, and (5) other advantages noticed in the following description or apparent from this disclosure.

Figure 1 is an elevation of a fragment of a wheel embodying this invention.

Fig. 2 is a detail showing the construction at the hub.

Fig. 3 is a detail of the fastening at the rim.

Equispaced around the inner periphery of the felly A, are a number of similar fastenings B, B', etc., which consist each of a back-plate 1, a front plate 2, and a bolt 3 retained at its ends by passing through said plates. This bolt may carry a bushing 4 to reduce wear.

The spokes C, C', etc., are in number equal to the fastenings B, B', etc., and the tip or apex of each spoke taken in succession terminates at corresponding fastenings. The spokes are all in the same plane and each is composed of two similar, but conversely arranged, spoke elements 5 formed of strips of sheet metal such as vanadium steel about one-sixteenth of an inch thick arranged endwise to the plane of the wheel. Each spoke element is pivotally attached to the rim and rigidly secured to the hub, and to that end the extremity of each spoke-element may be bent around to form a cylindrical loop and the free ends 6 brought flatwise against the adjacent face of the strip and soldered or welded thereto to compensate for the strength lost by the slots that are cut at intervals, leaving the retaining rings or loops 7 alternating with the slots 8.

The two strips forming each spoke pivotally interfit as shown by Fig. 3 and are retained by the bolt 3 or the bushing 4. To enable looseness due to wear to be taken up, the bushing 4 may be split and the bolt 3 have a taper shank, so that by removing one or more of the thin washers or liners 9 adjacent its head, the bushing may be expanded enough to insure a sufficiently close fit to prevent rattle.

From its felly attachment, each strip 5 extends in a curve of progressively increasing radius toward and approaches a point w located at the hub adjacent the radius line $r-r$ which lies midway its fastening B and the immediately adjacent fastening B', and the curve preferably conforms to a hyperbolic section the region x of which is that of maximum curvature, and the region y being nearly straight and extending practically radially. Just before entering into attachment with the hub, the strip may deflect through the single ogee s and then continue parallel with the radius line $r-r$ and enter the slot 10 in the hub-member without a further change in direction. It is noteworthy that at no point where the spoke-element is free to bend without being rigidly held by walls on each face of it, does it assume an unduly obtuse angle (such as a right-angle) to the radius line $r-r$ bisecting the sector between the spoke-fastenings B and B'. The adjacent strips 5, preferably both enter the slot 10 side by side in direct contact flatwise, but a filling strip 11 may intervene if desired. It is to be noted that where the strips 5 emerge from between the edges 12 and 13 of the slot and for a short distance beyond, as indicated by 14, there is little if any deflection from a straight line, and then by a gradual deflection first in one direction and then in another (without passing through any sharp bends) the body or working portion of the spoke-element is reached.

The slots 10 are narrow and elongated in an axial direction for a distance equal to the width of the strips 5 which in turn are as wide as the inner periphery of the felly. Internally, the slots enlarge as shown and the entering strips turn in opposite directions within the slots and their semi-circular portions 15 may have their inner semi-circular faces of conical contour. A conical or taper bolt 16 enters the conical recess formed

by the portions 15 and is drawn up snugly by a nut 16', preferably on the outer end of the hub member D; thereby securely wedging two strips to the hub-member by means of but one single element.

The hub member D is instanced as an element so devised as to be easily mountable upon the hub E of a conventional wooden wheel accurately concentric therewith, so as to enable possessors of ordinary wooden wheels to convert them into a superior type by merely displacing the wooden spokes and substituting the wheel unit composed of the parts A, B, C and D, thus preserving the regular bearing and saving the cost thereof. The hub E has a circumferential seat 17 which originally received the ends of the wooden spokes, and uprising at the inner end of such seat is an annular radial flange 18 provided near its periphery with a series of apertures 19. Bolts G are provided with shanks 20 that pass through said apertures, and endwise movement of the bolts is restrained by shoulders 21 the nuts 22 on the inwardly projecting ends serve to retain the bolts in place these bolts serving to prevent the member D from rotating relatively to the hub E.

The hub member D provides a series of ears 23 which, preferably are located near the inner end of the same and extend radially toward the hub between ribs 24 that provide the slots 10. The walls between such ribs will preferably be thin, and formed as shown. Where the bolts G pass through the apertures in the ears 23, they will preferably be slightly enlarged as indicated by 25 to facilitate demounting of the hub member D by providing shoulders for permanently positioning the bolts on the hub E. An annular ring 26 having a conical aperture 27 is cast to the ribs 24 and coöperates to afford a firm mounting for the hub member D. A

self-adjusting means may, if desired, be interposed between the ring 26 and the hub E, and such means may preferably assume the form of a split ring F having a conical periphery and urged into place by an expansible coil spring 28. A retaining ring H, held by nuts 22', holds member D in place.

I therefore claim as new and desire to secure by Letters Patent:—

1. A resilient wheel combining a hub member peripherally provided with axially extending sockets having slots opening radially outwardly; a pair of sheet metal spoke elements terminating in each socket and each having an ogee curve immediately upon emerging from said slots; and wedge means for clamping said elements in said sockets.

2. A wheel unit comprising a felly, a series of equispaced fastenings thereon, a hub-member providing a series of slots radially midway each pair of fastenings, a pair of similar sheet-metal spoke elements converging together at a fastening and each pivotally secured thereto, said spoke elements curving apart and the one entering the slot radially on one side of said fastening, and the other entering another slot radially on the other side of said fastening, and wedge means for rigidly securing said spoke elements in said slots.

3. A hub having a peripheral seat, an annular spoke-seating member circumscribing said seat, conical self-adjusting means intervening between said hub and member for maintaining concentricity between said parts and a spring for actuating said means.

In witness whereof, I hereunto subscribe my name, as attested by the two subscribing witnesses.

JOHN E. STRIETELMEIER.

Witnesses:

ALBERT F. NATHAN,
CLARENCE B. FOSTER.