May 24, 1932. J. W. VANDERVEER 1,860,001

WHEEL STRUCTURE

Filed May 31, 1927

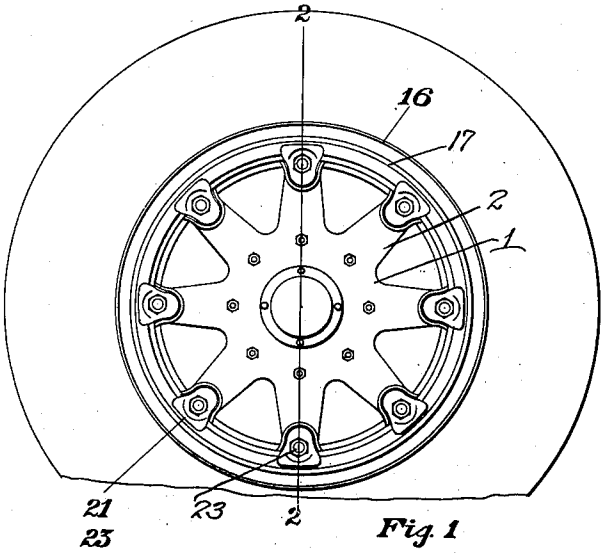


Fig. 1

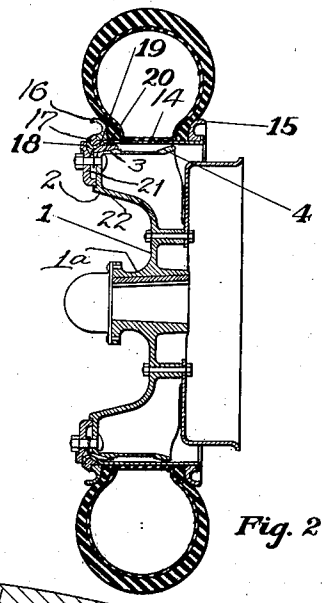


Fig. 2

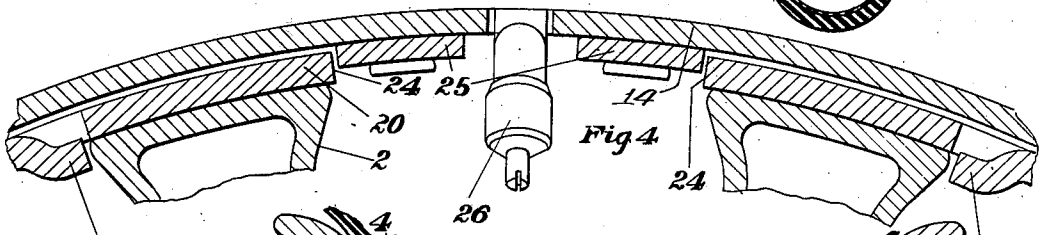


Fig. 4

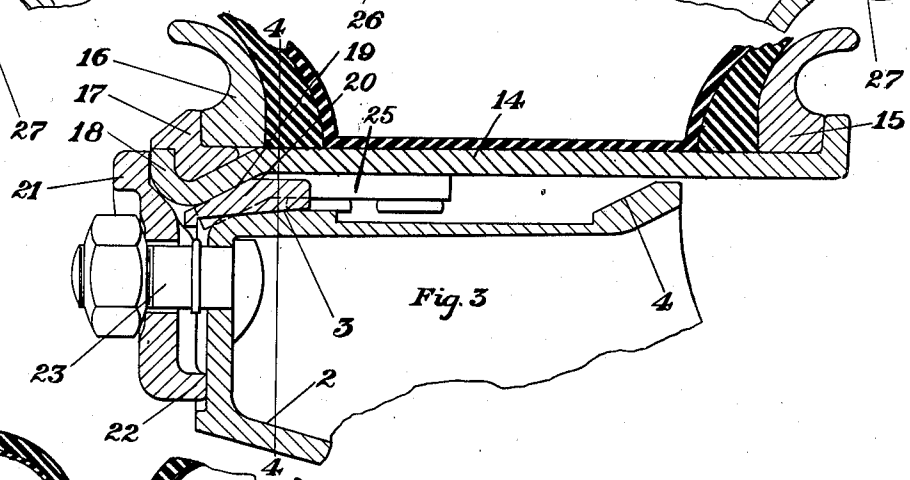


Fig. 3

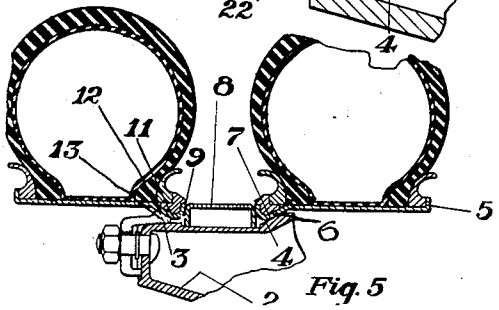


Fig. 5

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Patented May 24, 1932 1,860,001

UNITED STATES PATENT OFFICE

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WHEEL STRUCTURE

Application filed May 31, 1927. Serial No. 195,289.

The present invention is particularly designed with relation to the manner of mounting the rim on a wheel structure. The specific wheel structure to which the invention is directed is one which is designed for what is known as dual wheels. Such wheels have been provided with a bearing surface at the inner edges of the spoke ends and with corresponding surfaces at the outer edges of the spoke ends, these surfaces carrying the inner and outer rims respectively. It is desirable to provide a rim which may be interchangeable with such a structure and where one rim is used will be centrally mounted over the wheel. While the specific embodiment involves this adaptability the invention has some broader aspects, the details and features of which will appear more fully from the specification and claims.

A preferred embodiment of the invention is illustrated in the accompanying drawings as follows:—

Fig. 1 shows a side elevation of a wheel.

Fig. 2 a section on the line 2—2 in Fig. 1.

Fig. 3 an enlarged section of a portion of the wheel rim on the line 2—2 in Fig. 1.

Fig. 4 a section on the line 4—4 in Fig. 3.

Fig. 5 a section indicating the adaptability of the structure for a dual mounting.

1 marks the wheel center which is secured to the usual hub 1*a*, and 2 the spokes radiating from the wheel center. The outer ends of the spokes are each provided with a beveled surface 3 at the outer edge of the end of the spoke and a beveled surface 4 at the inner edge of the end of the spoke. These double bevels are particularly useful in the specific embodiment of my invention in that it adapts the structure for a dual rim mounting. An inner rim 5 is provided with a gutter 6 with a beveled under surface 7 which is adapted to engage the bevel 4. A positioning ring 8 engages the outer shoulder of the gutter 6 and is crowded by a shoulder 9 of a gutter 11 of the outer rim. An under surface 12 of the gutter 11 is engaged by the wedge end of a clamping plate 13 which is wedged between the surface 12 and the surface 3.

In the present structure the rim 14 has an inner tire ring 15 and an outer ring 16. The outer ring 16 engages a locking ring 17, one edge of which extends into a gutter 18. An under face 19 of the gutter forms a tapered, or beveled surface. A ring 20 is provided with a double taper, the inner taper corresponding to the tapered surface 3 and the outer taper corresponding to the bevel or taper 19.

A clamping plate 21 engages the outer shoulder of the gutter 18. The plate is provided with a fulcrum lip 22 at its inner edge and is secured to the face of the wheel spoke by a clamping bolt 23.

With this structure it will be observed that rim is centrally carried over the wheel and is carried by the outer engaging surface on the end of the spoke. Thus this demountable rim is interchangeable with a wheel structure adapted to carry the dual rim.

The ring 20 is split forming the ends 24. A plate 25 is secured to the under side of the rim and fills the space between the ends 24 thus locking the rim with the beveled ring 20. This is preferably arranged at the position of the valve stem 26 and between adjacent spokes. Shoulders 27 are formed in the rim preferably by striking out a small portion of the ring and these shoulders engage front and back circumferential faces of adjacent spokes, preferably the front face of the spoke in front of the valve stem space and the rear face of the spoke to the rear of the valve stem space. Thus the spokes are locked with the driving ring and in consequence with the rim.

What I claim as new is:—

1. A wheel structure having a beveled seating surface at one edge of the outer face of its periphery; a rim having an internal beveled seating surface opposing the seating surface of the structure, said rim centering with the wheel structure and said beveled surfaces facing in opposite directions axially; spacing means interposed between said beveled surfaces, said surfaces sustaining the load on the rim; clamping means for securing the rim and wheel structure in assembled relation; and a shoulder driving connection between the rim and spacing means and between the spacing means and structure.

2. A wheel structure having a beveled seating surface at one edge of the outer face of its periphery; a rim having an internal beveled seating surface opposing the seating surface of the structure, said rim centering with the wheel structure and said beveled surfaces facing in opposite directions axially; spacing means comprising a split ring interposed between said beveled surfaces, said surfaces sustaining the load on the rim; clamping means for securing the rim and wheel structure in assembled relation; and a shoulder on the rim extending between the ends of the split ring, the ends of the split ring forming a driving connection between the rim and the ring.

3. A wheel structure having a beveled seating surface at one edge of the outer face of its periphery; a rim having an internal beveled seating surface opposing the seating surface of the structure, said rim centering with the wheel structure and said rim having a valve opening and said beveled seating surfaces facing in opposite directions axially; spacing means comprising a split ring interposed between said beveled surfaces, said surfaces sustaining the load on the rim; clamping means for securing the rim and wheel structure in assembled relation; and a shoulder on the rim registering with the valve opening in the rim arranged between the ends of the ring, the engagement of said shoulder and the ends of the split ring forming a driving connection between the rim and ring.

4. A wheel structure comprising spokes having a beveled seating surface at one edge of the outer ends of the spokes; a rim having an internal beveled seating surface opposing the seating surface of the spoke, said rim being centered with the wheel a beveled ring between said surfaces, said surfaces sustaining the load of the rim; clamping means securing the rim on the wheel spokes and shoulders formed on said ring forming a driving engagement with said spokes.

5. A wheel structure comprising spokes having a beveled seating surface at one edge of the outer ends of the spokes; a rim having an internal beveled seating surface opposing the seating surface of the spoke, said rim being centered with the wheel structure; a beveled ring between said surfaces, said surfaces sustaining the load of the rim; clamping means securing the rim on the wheel spokes and shoulders formed on said ring engaging oppositely disposed faces of adjacent spokes.

6. A wheel structure comprising spokes having beveled seating surfaces at one edge of the outer ends of the spokes; a rim having an internal beveled seating surface opposing the seating surfaces of the spokes, said rim being centered with the wheel; clamping means securing the rim on the spokes comprising a beveled ring having separated ends between said surfaces, said surfaces sustaining the load; a shoulder on the rim between said ends; and shoulders on the ring in driving engagement with the spokes.

7. A wheel structure having a beveled seating surface on the inboard edge of the periphery thereof, and a seating surface on the outboard edge of the periphery; a rim having an internal beveled seating surface facing in the opposite direction axially from that of the seating surface on the said inboard edge, and adapted to seat thereon to sustain the load and with the portions of the rim extending axially inwardly from the said internal beveled seating surface overhanging the said seating surface at the inboard edge, said rim being centered on the wheel structure supporting the load through the internal beveled seating surface on the rim and the seating surface on the outboard edge of the peripheral face of the wheel structure; clamping means for securing the rim and wheel structure in assembled relation; and spacing means interposed between the internal beveled seat on the rim and the seating surface on the outboard edge of the wheel structure.

8. A wheel structure having spokes with a beveled seating surface on the inboard edge of each spoke end and a seating surface on the out-board edge of each spoke end; a rim having an internal beveled seating surface facing in an opposite direction axially from that of the seating surface on the inboard edge of a spoke end and adapted to seat thereon to sustain the load and with the portions of the rim extending axially inwardly from said internal beveled seating surface overhanging said seating surfaces at the inboard edges of the spoke ends, said rim being centered on the wheel structure supporting the load through the internal beveled seating surface on the rim and the seating surfaces on the out-board edges of the spoke ends; clamping means for securing the rim and wheel structure in assembled relation; and spacing means comprising a ring interposed between the beveled seat on the rim and the seating surfaces on the out-board edges of the spoke ends.

9. A wheel structure having spokes with a beveled seating surface on the inboard edge of each spoke end and a seating surface on the out-board edge of each spoke end; a rim having an internal beveled seating surface facing in an opposite direction axially from that of the seating surface on the inboard edge of a spoke end and adapted to seat thereon to sustain the load and with the portions of the rim extending axially inwardly from said internal beveled seating surface overhanging said seating surfaces at the inboard edges of the spoke ends, said rim being centered on the wheel structure supporting the load through the internal beveled seating surface on the rim and the seating surfaces on the out-board

edges of the spoke ends; clamping means for securing the rim and wheel structure in assembled relation; and spacing means comprising a split ring interposed between the beveled seat on the rim and the seating surfaces on the out-board edges of the spoke ends.

10. A wheel structure having a beveled seating surface on the inboard edge of the periphery thereof, and a beveled seating surface on the outboard edge of the periphery; a rim having an internal beveled seating surface facing in an opposite direction axially from that of the seating surface on the said inboard edge, and adapted to seat thereon to sustain the load and with the portions of the rim extending axially inwardly from the said internal beveled seating surface overhanging the said seating surface at the inboard edge, said rim being centered on the wheel structure supporting the load through the internal beveled seating surface on the rim and the seating surface on the outboard edge of the peripheral face of the wheel structure; clamping means for securing the rim and wheel structure in assembled relation; and spacing means interposed between the internal beveled seat on the rim and the seating surface on the outboard edge of the wheel structure.

11. A wheel structure having spokes with a beveled seating surface on the inboard edge of each spoke end and a beveled seating surface on the out-board edge of each spoke end, both of said seating surfaces facing axially outwardly; a rim having an internal beveled seating surface facing in an opposite direction axially from that of the seating surface on the inboard edge of a spoke end and adapted to seat thereon to sustain the load and with the portions of the rim extending axially inwardly from said internal beveled seating surface overhanging said seating surfaces at the inboard edges of the spoke ends, said rim being centered on the wheel structure supporting the load through the internal beveled seating surface on the rim and the seating surfaces on the out-board edges of the spoke ends; clamping means for securing the rim and wheel structure in assembled relation; and spacing means comprising a ring interposed between the seat on the rim and the out-board seating surfaces on the spoke ends.

In testimony whereof I have hereunto set my hand.

JEWELL W. VANDERVEER.