A. HARGRAVES.

CLAMPING MECHANISM FOR DEMOUNTABLE RIMS.

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1,258,676. Patented Mar. 12, 1918.

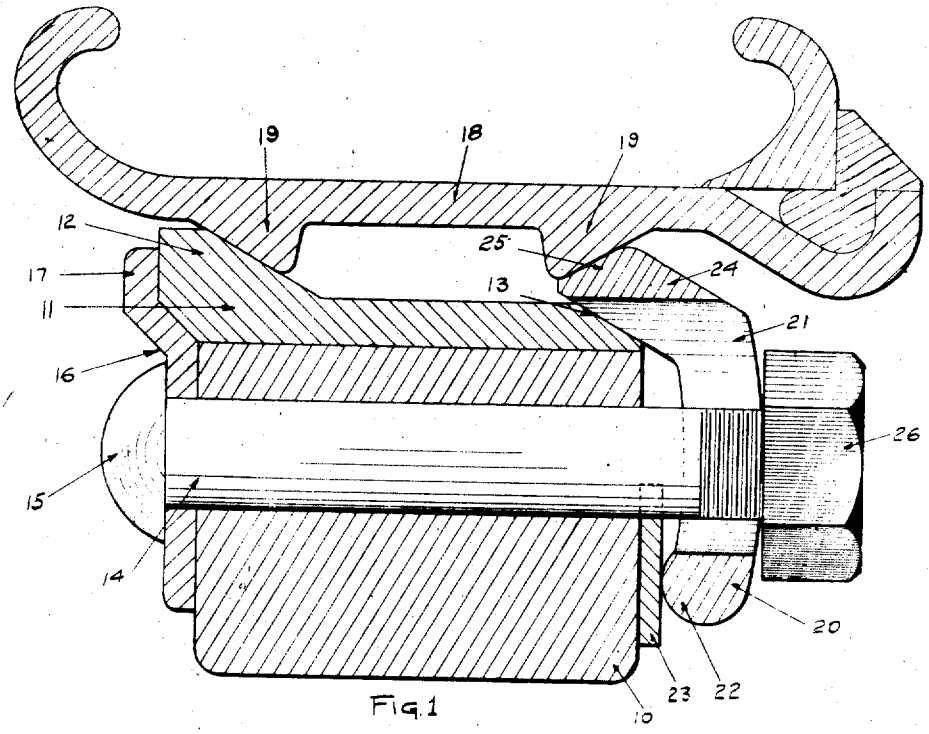


Fig. 1

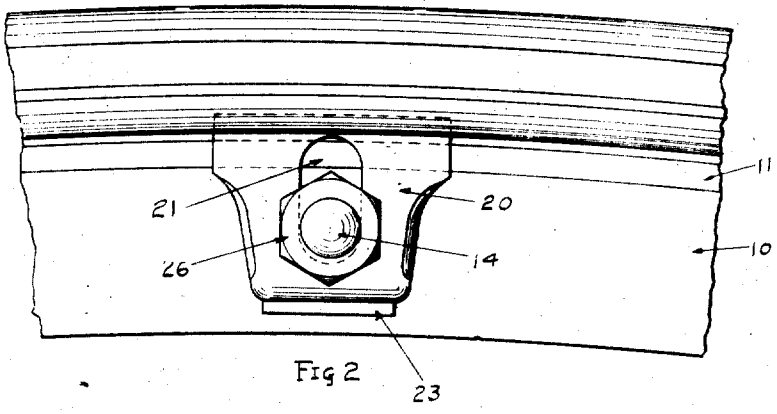


Fig 2

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UNITED STATES PATENT OFFICE.

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CLAMPING MECHANISM FOR DEMOUNTABLE RIMS.

1,258,676. Specification of Letters Patent. Patented Mar. 12, 1918.

Application filed December 9, 1915. Serial No. 65,909.

To all whom it may concern:

Be it known that I, ALBERT HARGRAVES, a subject of the King of Great Britain, residing at Akron, in the county of Summit and State of Ohio, have invented new and useful Improvements in Clamping Mechanism for Demountable Rims, of which the following is a specification.

This invention relates to removable or demountable rims and more particularly to the mechanism for securing the rim to the wheel.

In the mounting for removable rims, it is the common construction to provide a felly band which is provided along one edge with an inclined portion on which the rim is adapted to seat. The rim is usually forced to its seat by clamping means which may be formed as a removable ring and a separate clamping lug, or a single lug which combines the wedge clamping surface and the lug into one piece. Of the latter type there are two forms in common use, one in which the clamping lug is arranged to travel inwardly in a straight line and the other in which the clamping lug is fulcrumed on the side of the wheel and is forced inwardly with a rocking movement. It is to the last mentioned type of fastener that this invention relates and its object is to improve the form of lug or clamp and obviate some of the bad features present in ones in use previously.

This and other objects will appear from accompanying specifications and the drawings forming a part thereof in which:

Figure 1, is a cross section of rim mounted in place by one of my improved clamps.

Fig. 2, is a side elevation of a portion of a wheel.

In the drawings 10 represents a wheel felly, only a portion thereof being shown in the drawings. About the felly is shrunk a felly band 11, one edge of which is formed with an inclined shoulder or flange 12 on which the rim is adapted to seat. The opposite side of the felly band is cut away or inclined as shown at 13 to provide a seat for one side of the wedge clamp. Through the felly are passed a number of bolts 14 provided with heads 15 bearing on plates 16 arranged around the wheels and having radially extended portions 17 which form abutments for the felly band.

A rim 18 of any well known type may be mounted on the felly band, the type shown being provided with a pair of inclined ribs 19, one of which rides on the flange 12 in seating the rim. In assembling the rim the opposite rib comes over the tapered portion 19 and the two tapered surfaces form a V shaped recess or space into which the ends of the clamping lugs may be forced to space and clamp the rim.

Arranged on each bolt 14 is a wedge-clamp or lug 20. This clamp is slotted at 21 to pass over the bolt and allow for a certain amount of radial movement in mounting and demounting the rim. On its inner face the clamp is rounded on the lower end to form a knuckle or fulcrum 22 which is adapted to bear on a wearing plate 23 secured to the face of the wheel felly. The wedge clamp is given a gradual curvature throughout the major portion of its length and terminates in a straight inwardly directed portion 24 which enters the V shaped space referred to and is tapered at 25 to form a pointed wedging surface. On the end of the bolt 14 is screwed a nut 26 the inner flat surface of which bears on the rounded face of the wedge lug 20.

Rocking wedge clamps have been known prior to my invention but heretofore the outer surface has been flattened.

It will be seen that if the face of the clamp is flattened, upon rocking of the upper end inwardly the plane of the clamp face will be constantly changing with respect to the inner surface of the nut. Two objectionable features result from the construction. There will be a tendency to bend the bolt to make the surfaces coincide if considerable force is used in tightening the nut, and as the wedge portion of the clamp is usually lengthened to make the surface incline outwardly, the pressure will be borne by the upper half of the nut, with the result that as each flat surface of the nut comes into register with the slot there will be a relaxation of pressure on the clamp. These two difficulties are overcome in the construction of the clamp as shown for the reason that in this form the pressure is always exerted on a line only at right angles to the slot. This is true in whatever position the lever is placed as will be evident from Fig. 1, of the drawings. As a result the pressure exerted by the nut is always uniform and there is no tendency to bend

the bolt as the line of contact is always in the same plane as the axis of the bolt.

Various changes and modifications may be made in the construction shown without departing from the broad feature of the invention or sacrificing any of its benefits.

Claims:

1. A mounting for spacing and securing a removable rim on a wheel including clamping means, comprising a wedge adapted to enter the space between the rim and the wheel, a fulcrum and a surface between the fulcrum and the wedge and means adapted to draw the wedge in the space, said drawing means and said surface having a line contact at all times.

2. A mounting for spacing and securing a removable rim on a wheel, including a clamp member provided with a transversely disposed wedge portion and a fulcrum portion, said portions being upon the same side of the clamp member, the opposite side of the clamp member having a convex portion extending in a direction from the fulcrum toward the wedge portion and straight in a direction at right angles to the direction of convexity, the clamp member being provided with a slot extending in a direction from the fulcrum toward the wedge portion, a bolt extending through the slot, and a nut carried by the bolt and having a line contact with the convex side of the clamp member across the axis of the bolt and at substantially right angles to the axis of the slot.

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Witnesses:
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