Dec. 5, 1933. J. P. TARBOX 1,937,799

RIM AND SPOKE ATTACHMENT AND METHOD OF MAKING SAME

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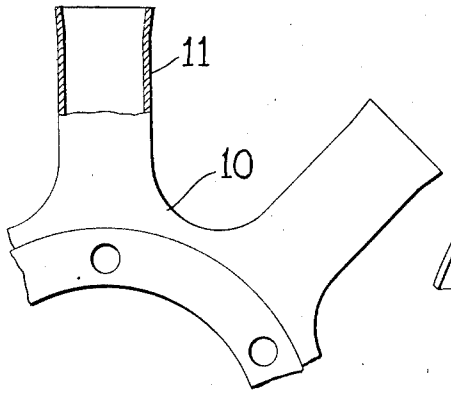


FIG. 1.

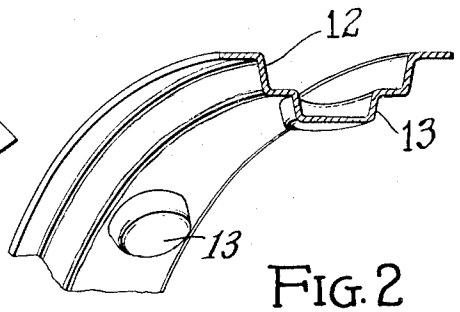


FIG. 2

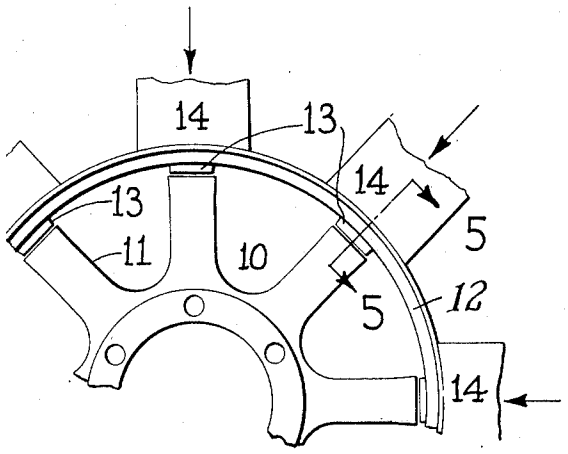


FIG. 3

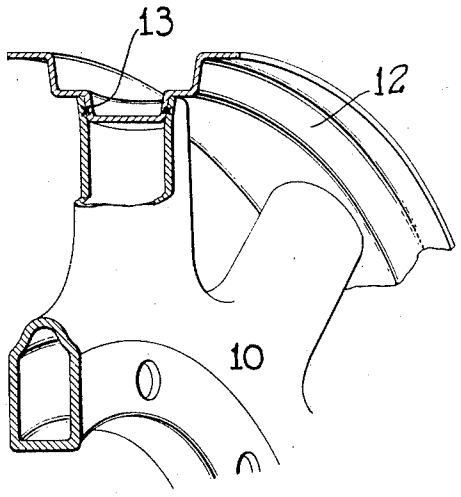


FIG. 4

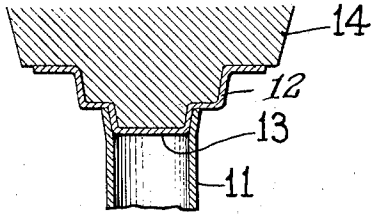


FIG. 5

INVENTOR.

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RIM AND SPOKE ATTACHMENT AND METHOD OF MAKING SAME

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5 Claims. (Cl. 29—159.03)

This invention relates to the securement of sheet metal spoke bodies to fellies as distinguished from standard rims, and also to drop center rims. A simple, efficient and cheap attachment structure and method utilizing sheet metal plugs force fitted into the open ends of sheet metal spoke bodies have been used, however I utilize such plugs, but these plugs are integrally formed in the felly itself.

According to the method of my invention I open end the spokes, slightly flaring them, preform the felly oversize in diameter, preform plugs thereon by radially inwardly offsetting portions of the body metal of the felly in the form of integral plugs having tapered side walls and closed bottoms, the latter upon a diameter greater than the diameter of the outer ends of the spokes, and thereafter contracting the pre-formed felly and integral plugs onto the wheel body to force fit the plugs into the open ends of the spokes. The structure and method are both illustrated by the accompanying drawing.

Fig. 1 is a segmental plan view of a sheet metal spoked wheel body, with one spoke in section.

Fig. 2 is a sectional perspective view of the felly with the pre-formed plugs.

Fig. 3 is a diagrammatic segmental plan view of the wheel body and pre-formed felly and plug in a contracting machine about to be assembled together.

Fig. 4 is a section perspective showing the completely assembled wheel body and felly, and/or drop center rim.

Fig. 5 is an axial section showing the spoke ends, felly and contracting die in relative position with the assembly substantially complete, the view being taken in a plane designated 5—5 in Fig. 3.

The wheel body is designated 10, and provided with flared open ended spokes 11. The flare of the spokes may or may not be provided, as desired, as the flare of the plugs themselves will ultimately achieve some flare of the spokes when the plugs are forced into the spokes.

12 is the felly or drop center rim, 13 are the plugs, formed at angular distances from each other equal to the angular distance between spokes. The felly itself is "diametrically" oversize. The plugs are preferably formed by die or stamping operations preferably in one and the same machine simultaneously. They are characterized by closed rounded bottom corners and flaring side walls commonly accompanying die stamping work, and preferably flared to an extent somewhat greater than normal flare back. This may be varied to suit varying conditions. Their bottommost diameters are slightly less than the diameter of the outermost end of the spokes, while their tapered side walls are of greater diameter, whereby when force fitted into the ends of the spokes, they fit with complete snugness and render the end of the spoke completely waterproof. Their bottoms lie on a circle of a diameter greater than the diameter of the circle of the outer ends of the spokes, such that they may be readily assembled together as shown in Fig. 3, the bottoms of the plugs passing over the outer ends of the spokes. The felly is an endless band when so assembled. The wheel body is a complete wheel body. They are so assembled in a contracting machine having radially acting assembly dies 14 which operate toward the axis of the wheel under extremely high pressure, as is common in contracting machines. These dies, as shown, in Fig. 5, are formed complementally not only to the cross section of the felly which they engage, but also to the interior of the plugs 13. They lie one on each spoke axis. When power is applied to the machine they contract the felly in its entirety and force the integral plugs 13 into intimate water tight engagement in the outer ends of the spokes as shown in Fig. 4, and thereby complete the wheel. Welding may be applied, as indicated, between the said walls of plugs 13 and the ends of the spokes.

The assembled spoke body and felly may then be assembled with the standard rim in any of the well known ways, or the felly itself constitute the rim as in case of a drop center rim.

The simplicity of my invention is no bar to modifications and each and all modifications of which it may prove to be susceptible should be protected in the annexed claims.

What I claim is:

1. The method of assembling a vehicle wheel which comprises indenting a rim to form plugs therein and contracting said rim about a wheel body to give a force fit relationship between said plugs and said wheel body.

2. The method of assembling a wheel body which comprises indenting a rim to form tapered plugs therein, contracting said rim about a wheel body having radially extending spokes in registry with said plugs, the ends of said spokes being flared radially outwardly, and being of a slightly

smaller diameter at the end thereof than the outer diameter of the said plugs.

3. A wheel body including in combination, open-ended spokes, a rim member having portions of its base depressed radially inward to form plugs within said open-ended spokes, the plugs and spokes being retained together by elastic contraction of the open-ended spoke about the plug, said plug having a perimeter larger than the perimeter of that zone of the spoke next adjacent to the plug.

4. The method of assembling a wheel body which comprises as a preliminary to juxtaposition of the parts for assembly the indenting of the rim to form integral tapered plugs therein adapted to enter the open ends of the spokes, thereafter juxtaposing the wheel body and the rim, and finally entering the formed plugs into the open ends of the spokes.

5. The method of assembling a wheel body which comprises as a preliminary to juxtaposition of the parts for assembly the indenting of the rim to form integral tapered plugs therein adapted to enter the open ends of the spokes, thereafter juxtaposing the wheel body and the rim, forcing the plugs into the open spoke ends and finally binding the plugs into the open spoke ends through interfrictional engagement of the plugs and spokes under an elastic urge together radially of the plugs and the spokes.

JOHN P. TARBOX.