

C. B. ALLEN.
VEHICLE WHEEL.
APPLICATION FILED JULY 1, 1921.

1,415,288.

Patented May 9, 1922.

Fig. 1.

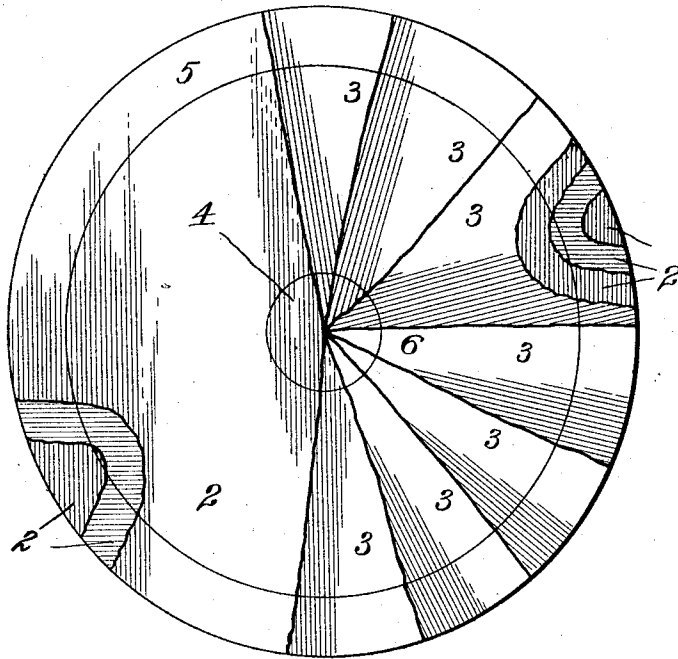


Fig. 2.

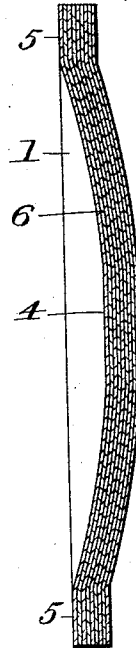


Fig. 4.

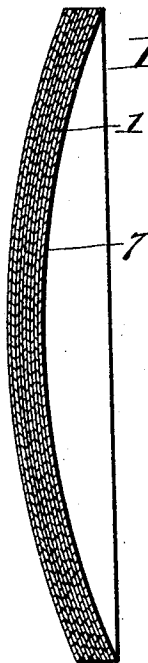


Fig. 5.

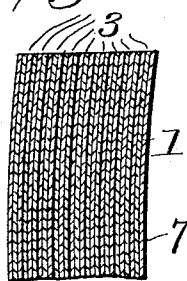
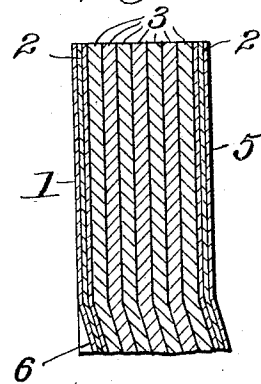


Fig. 3.



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VEHICLE WHEEL.

1,415,288.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHESTER B. ALLEN, a citizen of the United States, residing at Memphis, in the county of Shelby and State of Tennessee, have invented certain new and useful Improvements in Vehicle Wheels, of which the following is a full, clear, and exact specification.

This invention relates to vehicle wheels, and has for its object to provide an improved form of disk or solid wheel composed of a plurality of layers of wood and formed with a dish which prevents warping and insures true running thereof.

The invention will be first hereinafter described in connection with the accompanying drawings which constitute part of this specification, and then more specifically defined in the claims at the end of the description.

In the accompanying drawings, wherein similar reference characters are used to designate corresponding parts throughout the several views:

Figure 1 is a side elevation of a wheel constructed substantially in accordance with this invention, parts of the several layers thereof being removed for the purpose of better illustration.

Figure 2 is a section through the center of the wheel shown in Figure 1.

Figure 3 is a fragmentary section of a portion of the wheel shown in Figures 1 and 2 but drawn to a larger scale to more clearly illustrate the several layers used in this construction.

Figure 4 is a section of a modified form of wheel, and

Figure 5 is a fragmentary section thereof drawn to a larger scale for more clearly illustrating the several layers used in its construction.

The wheel 1 is formed of a plurality of layers or veneers of wood which are secured together by water proof glue or cement and are arranged so that the grains of the wood of adjacent layers run at an angle to each other. The number of layers used may be varied, as well as the thickness of the layers, but as shown in Figures 1, 2 and 3 of the drawings, the wheel is composed of thirteen layers or veneers. The total thickness of the three layers or veneers, constituting the members 2 at opposite sides of the wheel,

preferably equals the thickness of each of the seven intermediate layers or veneers 3.

The preferred mode of constructing the wheel consists in first securing together the three layers constituting the outside members 2 with water-proof glue or cement, said three layers of wood being arranged so that the grains thereof run at right angles to one another, as shown in Figure 1. Said three-ply outside members 2 are then submerged in boiling water until the wood becomes pliable, the water-proof glue or cement used for securing said plies together being unaffected by the boiling process. The intermediate layers or veneers 3 of the wheel are then placed together with water-proof glue or cement between them and the two three-ply outside members 2, which have been rendered pliable by the treatment in boiling water, are applied at opposite sides with water proof glue or cement between them and the adjacent intermediate layers 3. The complete disk wheel thus formed is then dished in any suitable form of press. The intermediate layers 3 are arranged with the grains of the wood running at slightly different angles, as shown in Figure 1, the radial lines of the grains of the several layers being preferably spaced equal distances apart around the entire wheel so as to correspond substantially to the different spokes of an ordinary wheel. The dished wheel is left in the press until the water-proof glue or cement has set, so that when it is removed the wheel cannot return to its original flat form, or warp or buckle, because, in order to do so, the individual layers of wood must slip on each other, which is prevented by the set glue or adhesive substance between them.

If desired, the wheel may be completely made up of three-ply members 2, as shown in Figure 5, and all of said three-ply members may be subjected to the boiling water treatment before being assembled and pressed into dished form. The boiling of the members 2 prevents them from checking or cracking during the pressing thereof into dished form. The use of the three-ply members thus treated may, however, in most cases, be restricted to the opposite sides of the wheel, because checking or cracking of the intermediate layers does not show and does not weaken the wheel to any appreciable extent. Said three-ply outer members or disks con-

stitute smooth protective coverings for the outsides of the wheel, concealing any cracks in the intermediate layers of wood and conforming to the dished surfaces thereof so as to give a nice finish to said wheel.

The form and extent of the dish in the wheel may be varied to suit different requirements or tastes. As shown in Figures 1 and 2, the central and marginal portions 4 and 5, respectively, of the wheel are left flat, while the dished portion 6 extends between them, whereas in Figures 4 and 5 the dish 7 extends from the center to the periphery of the wheel. It will be noted that the formation of the wheel with a dish not only insures its running true but also adds greatly to its rigidity and strength.

I claim:

1. A dished single disk wheel composed of a plurality of layers of wood secured together by an adhesive substance.

2. A dished single disk wheel composed of a plurality of layers of wood secured together by a water-proof cement.

3. A dished disk wheel composed of a plurality of layers of wood secured together by an adhesive substance the grains of adjacent layers running in different directions and the outside layers being thinner than the intermediate layers.

4. A dished disk wheel composed of a plurality of layers of wood secured together by an adhesive substance there being three outside layers on each side of the wheel which are thinner than the intermediate layers.

5. A dished disk wheel composed of a plurality of layers of wood secured together by an adhesive substance there being three outside layers on each side of the wheel which are thinner than the intermediate layers, and said outer layers having their grains running at right angles to each other.

6. A dished disk wheel composed of a plurality of layers of wood secured together by an adhesive substance, the three outside layers on each side of the wheel being arranged with their grains running at right angles to each other, and the intermediate layers being arranged with their grains run-

ning at different angles apart around the wheel for the purpose specified.

7. The process of making a dished disk wheel from a plurality of layers of wood which consists in boiling the outer layers to render them pliable, then assembling said outer layers and intermediate layers with an adhesive substance between them, and finally pressing said assembled layers to form the dish, said layers being retained in the press until the adhesive substance has set.

8. The process of making a dished disk wheel from a plurality of layers of wood which consists in securing together the outer layers with a water-proof adhesive substance, then boiling said multi-ply outer layers to render them pliable, then assembling said outer layers and intermediate layers with adhesive substance between them, and finally pressing said assembled layers to form the dish, said layers being retained in the press until the adhesive substance has set.

9. The process of making a dished disk wheel from a plurality of layers of wood which consists in securing together certain layers to form multi-ply members, then boiling said multi-ply members to render them pliable, then assembling said multi-ply members with an adhesive substance between them, and finally pressing said assembled members to form the dish, said members being retained in the press until the adhesive substance has set.

10. A dished single disk wheel composed of a plurality of layers of wood secured together by an adhesive substance, and coverings conforming to the dished outer faces of said layers and secured thereto for the purpose specified.

11. A dished single disk wheel composed of a plurality of layers of wood secured together by an adhesive substance, and disks conforming to and covering the dished outer faces of said layers for the purpose specified.

In testimony whereof I have signed my name to this specification.

CHESTER B. ALLEN.