

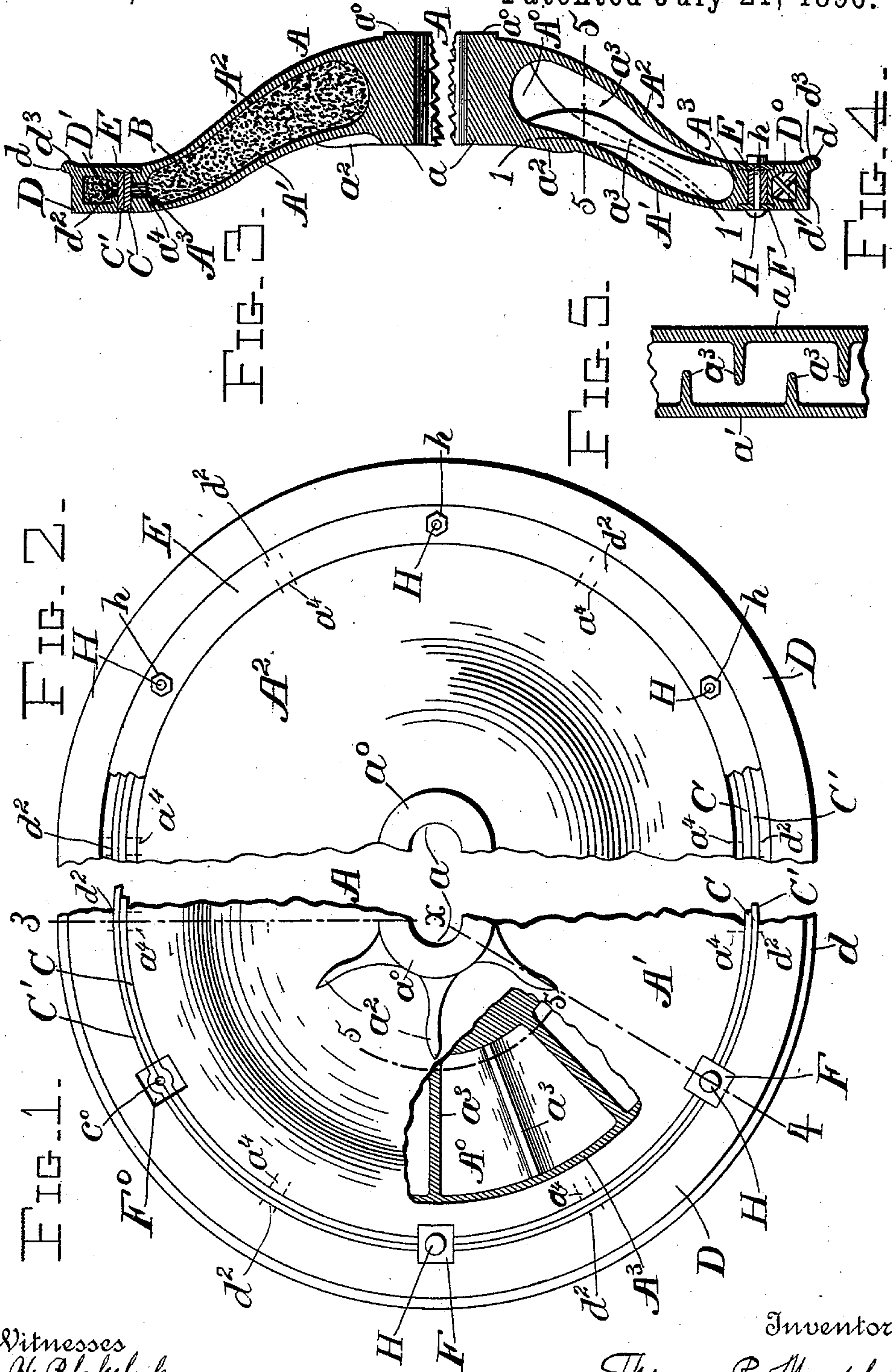
(No Model.)

2 Sheets—Sheet 1.

T. P. MURPHY.  
CAR WHEEL.

No. 564,214.

Patented July 21, 1896.



Witnesses  
D. H. Blakelock.  
John C. Wilson.

Inventor  
Thomas P. Murphy,  
by Whitman & Wilkinson,  
Attorneys.

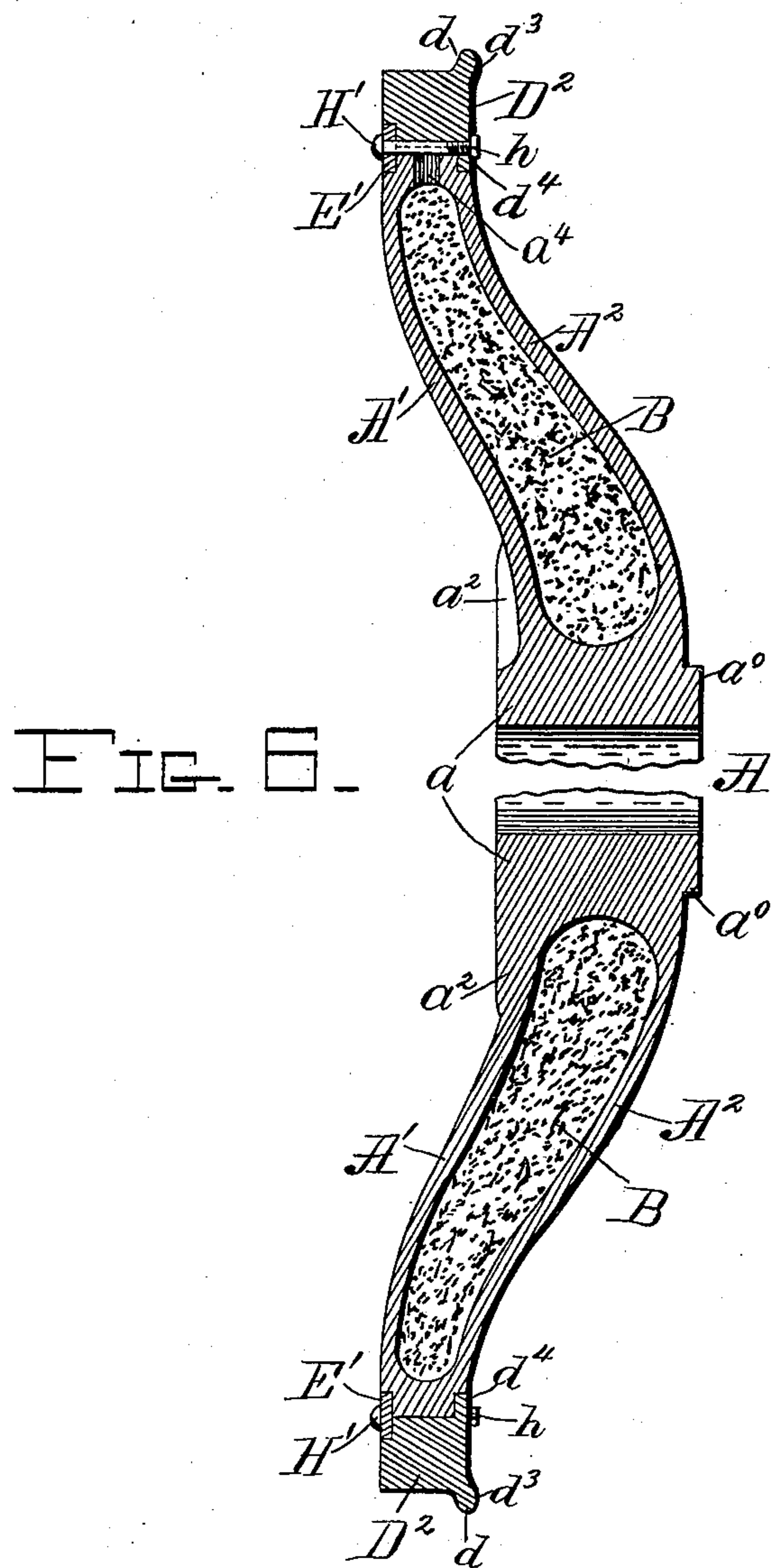
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# UNITED STATES PATENT OFFICE.

THOMAS P. MURPHY, OF NEW ORLEANS, LOUISIANA, ASSIGNOR OF FIVE-SIXTHS TO J. WILLIAM BARKDULL, NICHOLAS D. McDONALD, EDGAR H. BRIGHT, FRANK EMMETT, AND SAMUEL S. JONES, OF SAME PLACE.

## CAR-WHEEL.

SPECIFICATION forming part of Letters Patent No. 564,214, dated July 21, 1896.

Application filed December 5, 1895. Serial No. 571,139. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS P. MURPHY, a citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented certain new and useful Improvements in Car-Wheels; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in car-wheels, and it is especially intended to provide a light and noiseless car-wheel of great structural strength.

The said invention will be understood by reference to the accompanying drawings, in which the same parts are indicated by the same letters throughout the several views.

Figure 1 represents a side elevation of the outside of the car-wheel, parts being cut away along the curved line 1 1 of Fig. 4. Fig. 2 represents a similar view to that shown in Fig. 1 and shows the inner side of the car-wheel. Fig. 3 represents a section along the line 3, and Fig. 4 a section along the line 4, of Fig. 1; and Fig. 5 represents a section made by a line of revolution 5 5 about the axis of the car-wheel, the said section being rolled out on a horizontal plane; and Fig. 6 represents a section through a modified form of wheel having a solid tire.

A represents a hollow casting which forms the central portion of the wheel. This casting is provided with a perforated hub  $a$ , preferably reinforced, as at  $a^0$ , and ribbed, as at  $a^2$ , whereby greater strength is given to the said hub. The said casting is hollowed out, as at  $A^0$ , the said hollowed or chambered portion being shut in by the front wall  $A^1$  and the rear wall  $A^2$  and the outer ring  $A^3$ , which latter is provided with one or more apertures  $a^4$ , through which the core is removed and into which asphalt or other non-resonant material is poured in while in a semifluid condition, and allowed to harden in the hollow portion of the casting A. This hollowed portion or chamber  $A^0$  is provided with curved ribs  $a^3$ , interpenetrating, as shown in Figs. 4

and 5, whereby the requisite degree of rigidity is given to the curved walls  $A^1$  and  $A^2$ .

Exterior to the central casting A, which casting is preferably made of malleable iron or steel, are two rings C and C', which are shrunk or forced on the exterior of the casting, and are provided with semiloops  $c^0$ , as shown in Fig. 1, between which pass the bolts H, as will be hereinafter described. Exterior to these rings C and C' is the hollow tire D, preferably made of chilled iron and flanged at  $d$ . The interior of this tire is preferably provided with stays  $d^1$ , set at approximately right angles to each other and one behind the other and diagonally across the chamber in the tire, as shown in Fig. 4, whereby greater strength with a lighter weight of metal is obtained. The tire is also provided with one or more openings  $d^2$  on the inner cylindrical surface thereof, whereby the core may be removed and asphalt B' or other non-resonant material may be poured in while in a semifluid state and allowed to harden before the tire is put on the wheel. The said tire is also provided with suitable grooves to receive the loops  $c^0$ , (shown in Fig. 1;) but if these loops be omitted, as might frequently be preferred, both the rings C and C' and the inner face of the tire D should be made cylindrical. The flange  $d$  is bulged outward or reinforced, as shown at  $d^3$ , for the purpose of strengthening the same.

On the inside of the wheel a butt-ring E is let into the face of the casting A and of the tire D, as shown in Figs. 3 and 4, while on the opposite side the said tire and the said casting are provided with a plurality of angular chambers or grooves  $F^0$ , into which fit the washer-plates F, as shown in Fig. 1. The bolts H pass through these washer-plates F and through the butt-ring E, and are held in place by the nuts  $h$ . Thus these bolts hold the casting, the tire, the intermediate rings C and C', and the butt-ring E all firmly together.

Instead of the nuts  $h$ , lock-nuts may be used or the bolts H may be replaced by rivets, if desired.

In the form of wheel shown in Fig. 6 the



tire D<sup>2</sup> is made solid and is provided with a flange d<sup>4</sup>, let into the periphery of the casting A. On the opposite side of the wheel the ring E' is let into the face of the casting A and also of the tire D<sup>2</sup>, and the bolts H' or rivets pass through both the said ring E' and the flange d<sup>4</sup> and are splined into both the casting A and the tire D<sup>2</sup>, thus holding the said tire firmly on the wheel. When bolts H' are used instead of rivets, nuts h secure the same in place.

In either form of device, should the tire become worn out or injured in any way, it may be readily removed and a new one substituted.

By the herein-described construction a strong, durable, cheap, and practically noiseless wheel is obtained.

It will be obvious that various modifications might be made by any one skilled in the art which could be used without departing from the spirit of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a car-wheel, the combination with a central portion provided with an annular chamber therein, with interpenetrating ribs projecting from each side of said chamber, of non-resonant material placed in said chamber, and a hollow tire secured over the periphery of said central portion, and filled with non-resonant material, substantially as described.

2. In a car-wheel, the combination with a central portion, of a hollow tire mounted thereon and provided with alternate stays set at approximately right angles and extending across the hollow portion of said tire, and non-resonant material filled into said tire, substantially as described.

3. A tire for car-wheels provided with an annular chamber therein, with alternate ribs or stays extending diagonally across said chamber, and non-resonant material filled into said chamber, substantially as described.

4. A tire for car-wheels, provided with a flange bulged outward in the line of the periphery of said wheel, and provided with an annular chamber within said tire, with alternate ribs or stays projecting diagonally across said chamber, substantially as described.

5. A tire for car-wheels provided with a flange bulged outward in line with the periphery of said tire, and the said tire being provided with an annular chamber therein, with alternate ribs or stays extending diagonally across said chamber, and non-resonant material filled into said chamber, substantially as described.

6. In a car-wheel, the combination with a hollow central portion provided with transverse grooves and filled with non-resonant ma-

terial, and a tire also provided with transverse grooves, of two rings having loops adapted to project into said transverse grooves and to fit between the said tire and the said central portion, a butt-ring lapping over said rings and partly lapping over said central portion and said tire, with washer-plates on the opposite side of said wheel, and bolts or rivets passing through said washer-plates, said loops in said rings, and said butt-ring, and firmly holding these parts together, substantially as described.

7. In a car-wheel, the combination with a hollow central portion provided with transverse grooves and filled with non-resonant material, and a hollow tire also provided with transverse grooves and also filled with non-resonant material, of two rings having loops adapted to project into said transverse grooves and to fit between the said tire and the said central portion, and bolts or rivets passing through said loops, with plates beneath the heads thereof for holding said central portion, said tire and said rings together, substantially as described.

8. In a car-wheel, the combination with a hollow central portion provided with transverse grooves and filled with non-resonant material, and a hollow tire also filled with non-resonant material, of two rings having loops adapted to project into said transverse grooves and to fit between the said tire and the said central portion, a butt-ring covering the edge of said rings and lapping partly over said central portion and said tire, washer-plates on the opposite edge of said rings, and bolts or rivets passing through said washer-plates, and said loops and said butt-ring and firmly holding these parts together, substantially as described.

9. In a car-wheel, the combination with a hollow central portion provided with transverse grooves and filled with non-resonant material, of a hollow tire also filled with non-resonant material and provided with transverse grooves, of two rings having loops adapted to project into said transverse grooves and to fit between the said tire and the said central portion, a butt-ring let into the face of said tire and said central portion, and covering the edge of said rings washer-plates on the opposite side of said rings and also let into the said tire, and the said central portion and into said rings, and bolts or rivets passing through said washer-plates and said loops and said butt-ring, and firmly holding these parts together, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS P. MURPHY.

Witnesses:

JOS. H. BLACKWOOD,  
J. STEPHEN GINSTA.