W. J. McDONALD.

MINE CAR WHEEL.

APPLICATION FILED DEC. 21, 1912.

1,066,638. Patented July 8, 1913.

Fig. 2.

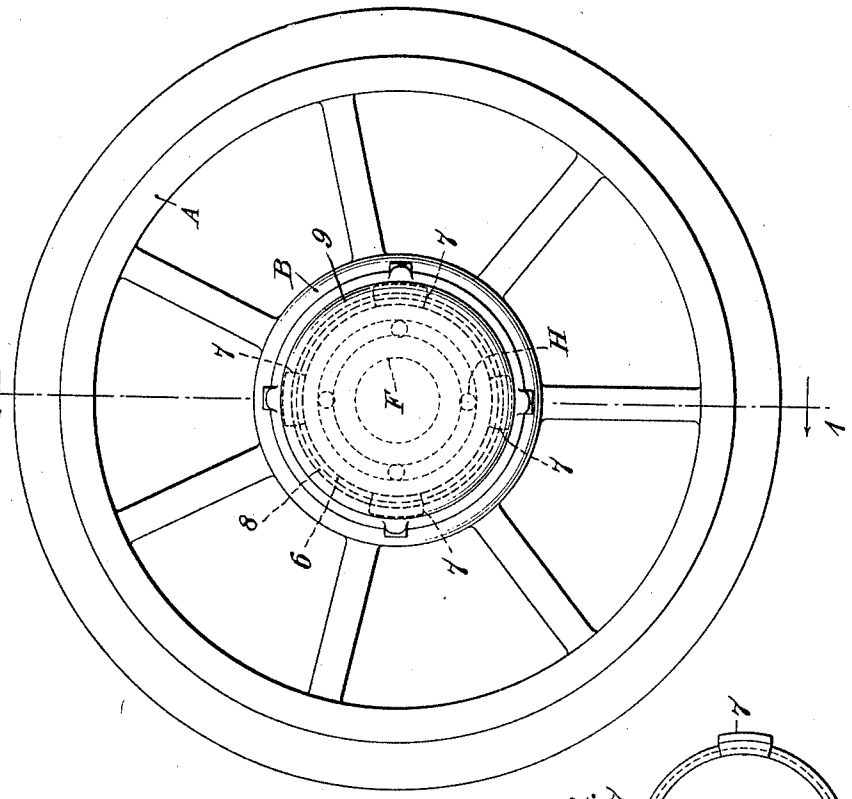


Fig. 4.

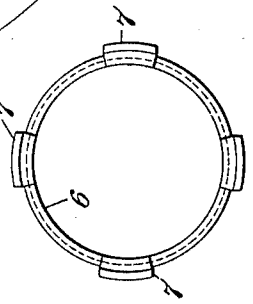


Fig. 3.

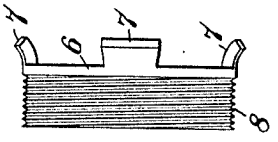


Fig. 1.

WITNESSES

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MINE-CAR WHEEL.

1,066,638. Specification of Letters Patent. Patented July 8, 1913.

Application filed December 21, 1912. Serial No. 738,034.

To all whom it may concern:

Be it known that I, WILLIAM JOSEPH McDONALD, residing at Huntington, West Virginia, and being a citizen of the United States, have invented certain new and useful Improvements in Mine-Car Wheels, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and to use the same, reference being had to the accompanying drawings, which illustrate the preferred form of the invention, though it is to be understood that the invention is not limited to the exact details of construction shown and described, as it is obvious that various modifications thereof will occur to persons skilled in the art.

In said drawings: Figure 1 is a transverse sectional view taken through a wheel embodying my invention, and taken on the plane indicated by the line 1—1 of Fig. 2, looking in the direction indicated by the arrow. Fig. 2 is a front elevation of my wheel as shown in Fig. 1, looking at the left-hand side of this figure. Fig. 3 is a side elevation of a nipple, particularly forming the subject-matter of my invention, and Fig. 4 is a rear elevation of the same, looking at the right-hand side of Fig. 3.

My invention relates to roller-bearing wheels, and in this illustration there is shown in connection with my invention a mine car wheel, but it is to be understood that the novel features may be utilized with any known form of wheel or similar rotatable body.

The object of my invention is to provide means by which a relatively non-frangible nipple for the hub cap of a wheel may be securely and conveniently placed and held in the hub of the wheel, and it is a further object to so locate the nipple that shocks thereon will be resisted without causing a fracture of the cast metal of the hub.

Heretofore mine car wheels have been formed in which the hub cap was secured in position upon concentric flanges projecting outwardly from the cast metal portion of the hub, the flange being formed integral with the hub, but difficulties have arisen because of the frequent breakage of the flange incident to rough handling. To overcome difficulties heretofore encountered the present invention is produced, in which a non-frangible nipple is formed and, preferably, screw-threaded, after which the hub of the wheel and, generally, the entire wheel is cast while said non-frangible nipple is held in position in the flask, thereby forming a composite structure including a cast hub with non-frangible, screw-threaded nipple projecting therefrom and held in position in the hub without extraneous fastening devices.

Described more in detail I have shown a mine car wheel A, having a hub B, which is provided at one end with a plate C, which is adapted to retain in position the roller-bearings interposed between an axle F, which is projected through an orifice D in the plate C, which axle is shown in dotted lines in Fig. 1. The front wall G of the hub is adapted to receive end thrust of the roller-bearings (not shown), and may be provided with apertures H extending therethrough for lubrication, the roller-bearings or rollers being held between the front wall G and the plate C, before referred to.

Held in position and projecting from the outer face of the hub B is a nipple of non-frangible metal, which extends for a sufficient distance into the body of the hub and is concentrically disposed relative to the axis of rotation of the wheel.

The hub, spokes and rim of the wheel, as shown, and, in any event, the hub of the wheel is formed by casting the same on the nipple 6, which latter may be formed from a pressing, or of malleable iron, or a short section of pipe properly screw-threaded, and extending from and integral with the inner end of the insert or nipple are the outwardly bent anchors or fingers 7, which are deflected radially outwardly and serve as anchors to hold the nipple more securely within the cast hub. This nipple extends outwardly from the hub for some considerable distance, and is externally screw-threaded as shown at 8. This screw-threaded extension is adapted to be engaged by the hub or cap 9, which, as shown in Fig. 1, has an internally screw-threaded flange 10 adapted to engage the nipple. It will be seen by this construction that the cap engages a member formed separately from the hub B, which member is made of some non-fran-

gible substance susceptible of withstanding blows which might fracture a cast flange or extension of the hub itself.

What I claim is:

1. A wheel hub having a nipple of non-frangible metal cast therein and projecting therefrom and adapted to be engaged by a hub cap.

2. A wheel hub having an insert of non-frangible material held in one side thereof concentric with the axis of rotation of the wheel and projecting from said wheel, and a cap engaging the projecting portion of said nipple.

3. The combination of a cast-iron wheel, of a wrought iron nipple cast therein, and a hub cap engaging said nipple.

4. As a means for connecting a hub cap with a cast metal wheel, a nipple of non-frangible metal having a portion cast within said wheel and a threaded portion extending from said wheel.

5. As a means for connecting a hub cap with a cast metal wheel, a nipple of non-frangible metal having a portion cast within said wheel and a threaded portion extending from said wheel, and anchor extensions formed on said nipple.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

WILLIAM JOSEPH McDONALD.

Witnesses:

C. T. GREEN,

R. W. WARD.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."