(No Model.)

G. P. KING.

CAR WHEEL.

No. 300,321. Patented June 10, 1884.

Fig. 1.

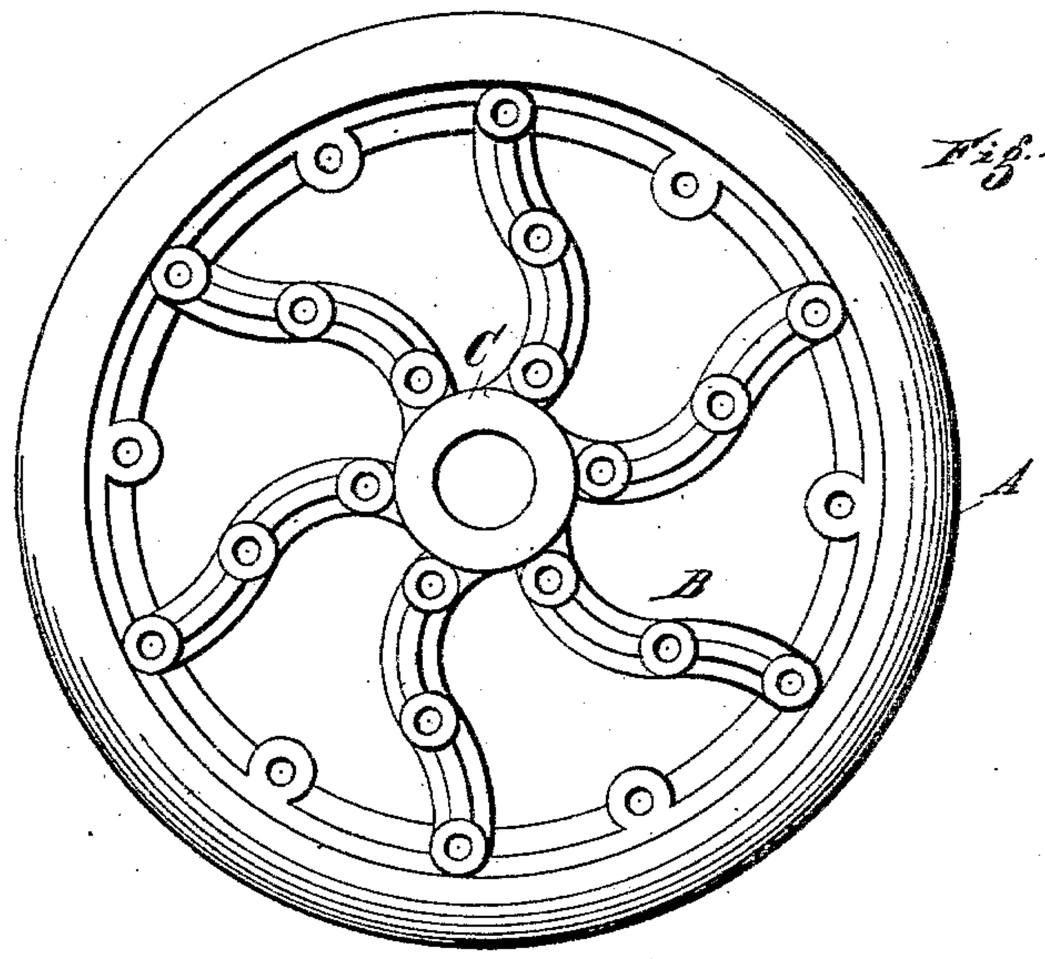


Fig. 2.

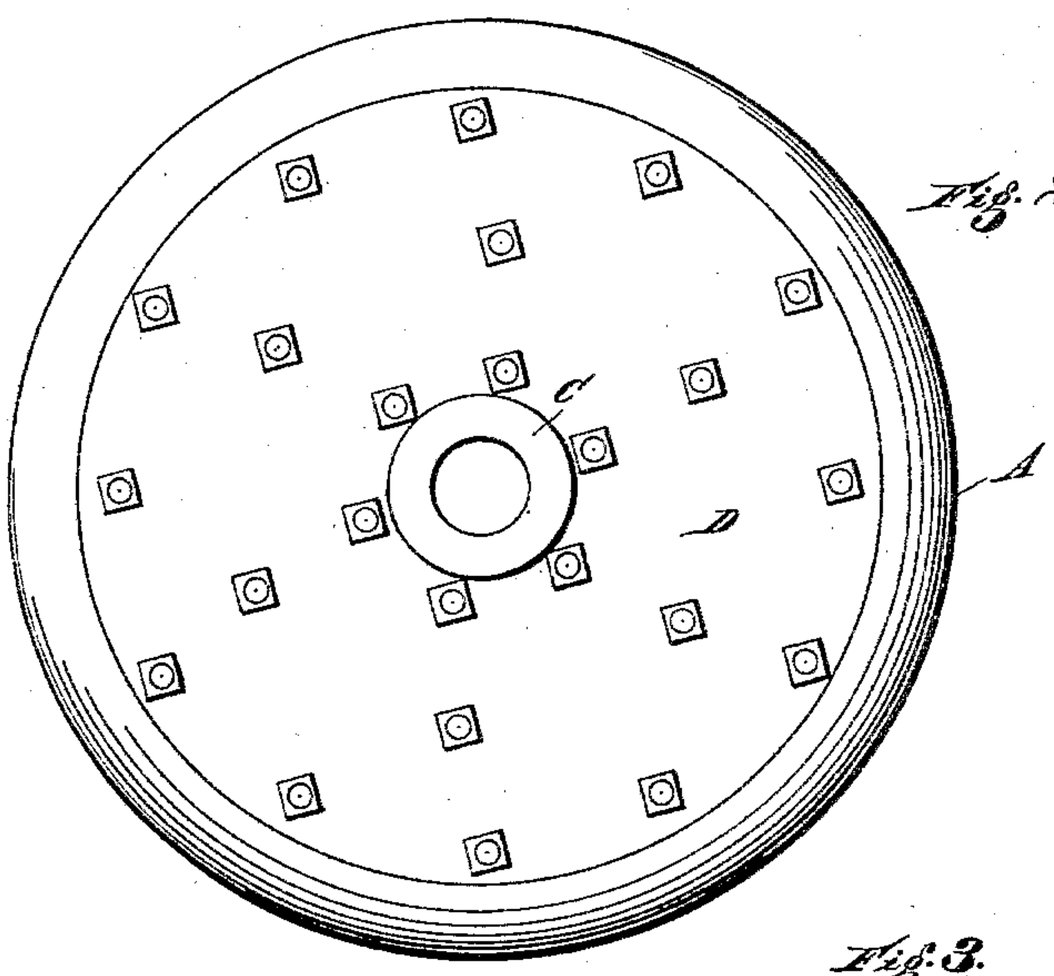
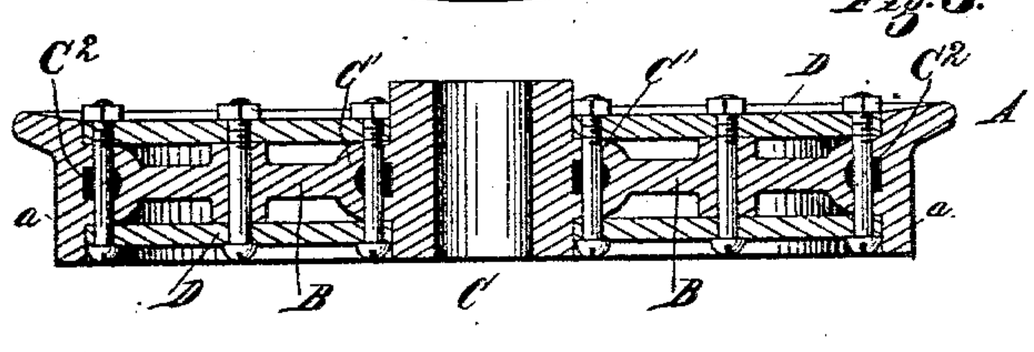


Fig. 3.



WITNESSES

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CAR-WHEEL.

SPECIFICATION forming part of Letters Patent No. 300,321, dated June 10, 1884.

Application filed April 2, 1884. (No model.)

To all whom it may concern:

Be it known that I, GEORGE P. KING, of St. Thomas, county of Elgin, Province of Ontario, Canada, have invented a new and useful Improvement in Car-Wheels; and I do declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form a part of this specification.

My invention consists of the combination of devices and appliances hereinafter specified, and more particularly pointed out in the claims.

In the drawings, Figure 1 is a plan view of a car-wheel with one of the face plates removed. Fig. 2 is a plan view of the wheel complete. Fig. 3 is a cross-section.

This invention is designed as an improvement upon cast-iron car wheels in which the tread is chilled. It is well known that railway-car wheels, whether for driving-wheels or truck-wheels, wear quite rapidly upon the tread, and this is especially true when the tread is made of wrought-iron or steel or of ordinary cast-iron. If the wheel is cast of very hard cast-iron, it is correspondingly brittle, and experience has shown that the most durable tread is one made of chilled cast-iron or iron cast upon a chill. Chilled cast-iron, however, is so brittle as to render the use of such wheels somewhat precarious.

It is the object of this invention to construct a cast wheel with a chilled tread, and to combine with it one or more plates of wrought-metal having the inner face or faces seated directly against the side face or faces of the web which joins the hub to the chilled tread, said plate or plates being held against the web at many points thereon by bolts and nuts, so that should the wheel crack or break it cannot fall to pieces nor precipitate an accident, while at the same time the presence of the wrought-metal plates greatly lessens the liability of the wheel breaking.

In carrying out my invention, A represents the rim of the cast-iron car-wheel, the tread *a* of which is chilled.

B represents the web composed, as here shown, of spokes or arms; C, the hub; and C′ a channel, which is usually formed adjacent to the hub, and which may or may not be employed.

D represents wrought-metal plates, which are securely fastened at many points, as shown, to the cast-iron wheel, and constitute the web of the wheel. These webs D may be flat or they may be slightly bulging, so as to afford more elasticity; or they may be riveted to the wheel; or the fastening may be in the form of bolts and nuts; and when bolts and nuts are employed I prefer to rivet-head the bolts upon the nuts after the latter have been run down to place. The bolts or rivets, as will be seen, pass through the casting of the wheel, in which case suitable orifices are drilled or otherwise formed for the purpose, so that should the rim of the wheel become broken from any reason it is almost impossible for a piece of such size to become detached as to endanger the car.

I would have it understood that I do not limit myself to any particular form of cast-iron between the hub and the rim of the wheel. It may be cast in spokes either straight or curved; or it may be cast in the form of a solid or nearly solid web, or in any shape which may suit the ideas of the constructor. I prefer, however, usually to construct the wheel substantially as shown, so as to allow of slight elasticity to compensate for expansion and contraction of the metal, and also to neutralize any sudden strain which might otherwise shatter the wheel. I would also have it understood that the wheel is equally practicable for a large driving-wheel as for small truck-wheels, and contemplate its use in wheels of any size. I prefer always to employ two webs of wrought metal—one upon each side of the wheel—thereby throwing the strain of the rivets or bolts upon the plates instead of upon the casting; but my invention contemplates the employment of either one or two plates; and while I prefer to make the wrought-metal webs continuous and unbroken, yet, if desired, for the purpose of lightening the wheel, or for any other purpose, the plates might be made

with openings through them in places where the removal of the metal would not materially reduce the effective strength and efficiency of the plates. I may also leave an annular channel, C^2, adjacent to the rim, to give the strength of an arch at this point.

I am aware that a hollow car-wheel has been constructed with a plane web, a laterally-projecting hub, and a flanged treading-surface having on its inner surface an annular shouldered seat, on which is secured a ring or cap-plate, the object being to provide a wheel possessing less weight than wheels as ordinarily constructed; but such construction differs from mine in that in my invention the tread is chilled and the wrought-iron plates have their inner faces bearing directly against the web between the tread and the hub, and, further, the inner faces of the wrought-iron plates are held against the web at many points, so that if the web should be fractured the wrought-iron plates would prevent the web from falling to pieces.

What I claim is—

1. A wheel formed of cast-iron with a chilled tread and a web connecting the tread and hub, in combination with wrought-metal plates having their inner faces bearing against the faces of the web, and securely fastened thereto at many points between the hub and the rim, substantially as and for the purposes described.

2. The combination, with a cast wheel provided with a chilled tread and a web joining the tread and hub, of wrought-metal plates having their inner faces resting against the web and securely riveted or bolted thereto at many points between the hub and the rim, substantially as described.

3. A car-wheel of cast-iron with a chilled tread provided with wrought-iron plates extending from the hub to the rim, and arched channel C^2 adjacent to the rim, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

GEORGE P. KING.

Witnesses:
JNO. MCLEAN,
J. A. MACLEAN.