

No. 747,983.

PATENTED DEC. 29, 1903.

G. S. KYLE.
CAR WHEEL.

APPLICATION FILED AUG. 4, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

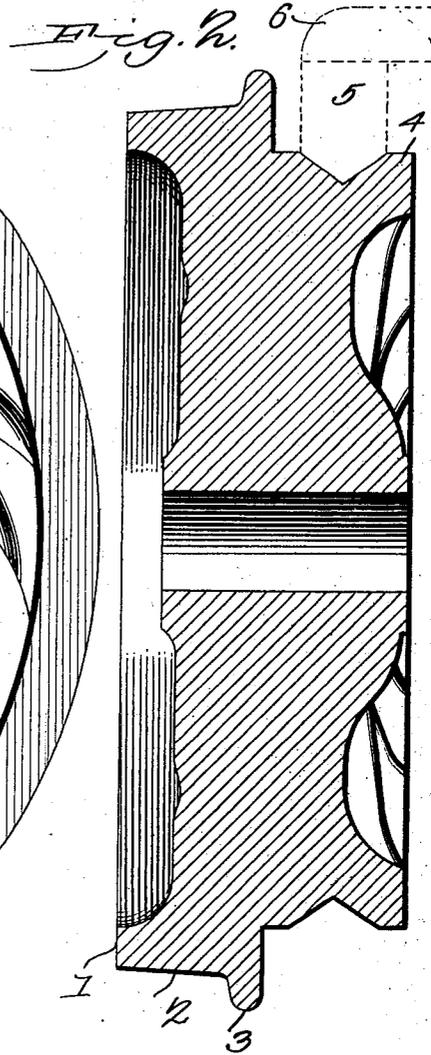
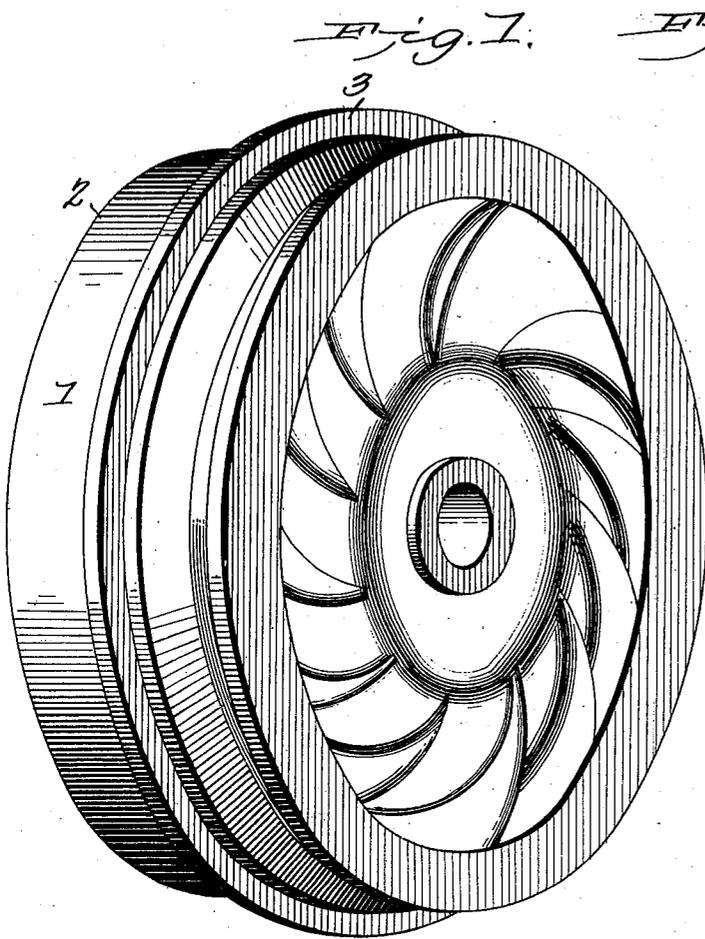


Fig. 7.

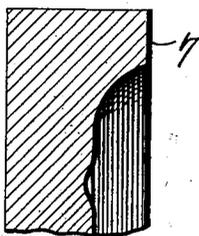


Fig. 8.

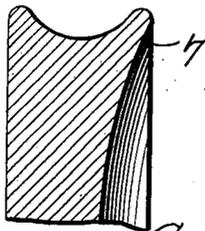
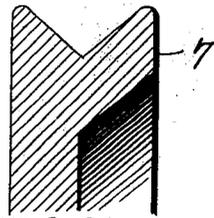


Fig. 9.



Witnesses

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NO MODEL.

2 SHEETS—SHEET 2.

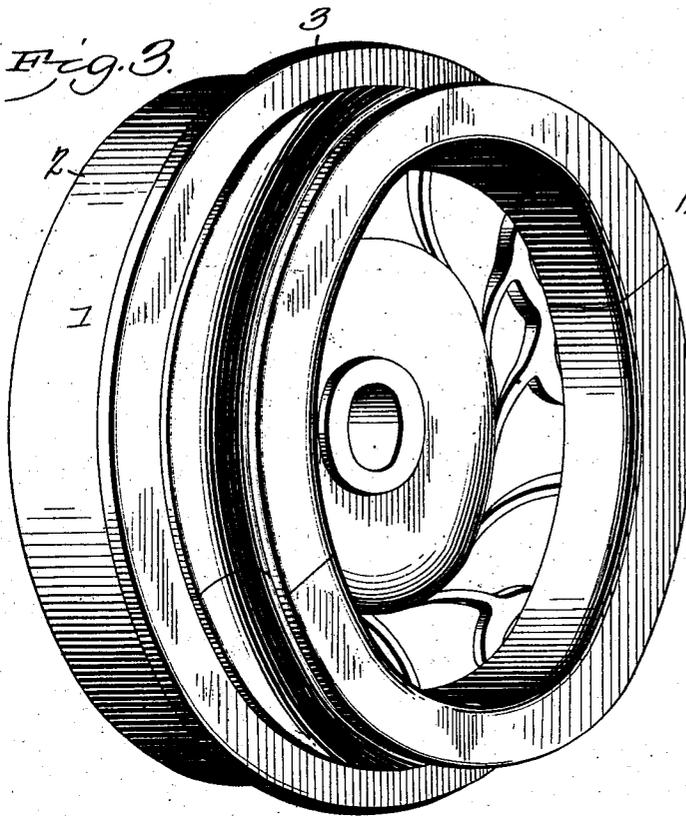


Fig. 5.

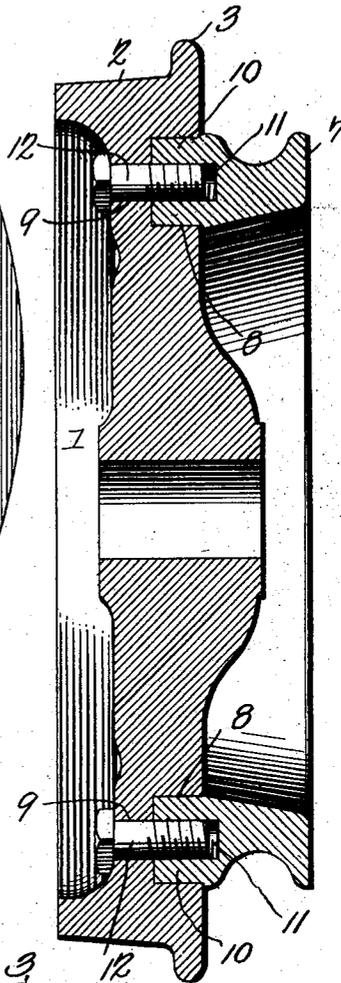


Fig. 4.

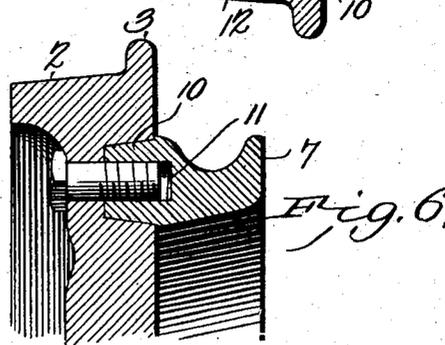
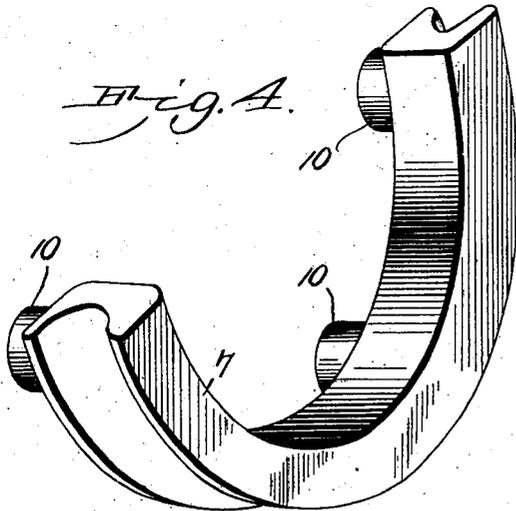


Fig. 6.

Witnesses
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UNITED STATES PATENT OFFICE.

GEORGE S. KYLE, OF CHAMBERSBURG, PENNSYLVANIA, ASSIGNOR OF
ONE-FOURTH TO NORMAN L. BONBRAKE, OF CHAMBERSBURG,
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CAR-WHEEL.

SPECIFICATION forming part of Letters Patent No. 747,983, dated December 29, 1903.

Application filed August 4, 1903. Serial No. 168,211. (No model.)

To all whom it may concern:

Be it known that I, GEORGE S. KYLE, a citizen of the United States, residing at Chambersburg, in the county of Franklin and State of Pennsylvania, have invented a new and useful Car-Wheel, of which the following is a specification.

At the present day the brake-shoes of cars in engaging the wheels act upon the tracking-surface of the latter, thus subjecting the same to a wearing grinding operation, which quickly destroys the transverse bevel which is imparted to said wheel-surface in order that the latter may properly track upon the rails in rounding curves. Further, owing to the brake-shoes engaging the tread of the wheel the friction-surface is necessarily limited to the transverse width of said tread-which in some instances, particularly in the case of street-cars, is comparatively narrow to prevent the wheels extending beyond the sides of the rails, thus presenting an extremely-limited frictional surface upon which the shoe may act. Another objectionable feature attendant upon the present arrangement resides in the fact that where the shoes act directly upon the wheel-tread the brake-beams overhang the tracks and in event of the brake-rigging becoming disconnected or broken the shoes and brake-beams fall upon the rails, causing serious accidents in many instances.

My invention relates to car-wheels, and has for its objects to provide a device of this character of simple construction by which the above-noted objections are entirely obviated.

To these ends the invention comprises the novel details of construction and combination of parts more fully hereinafter described.

In the accompanying drawings, Figure 1 is a perspective view of a car-wheel, illustrating one form of embodiment of my invention. Fig. 2 is a transverse section vertically through the same, illustrating conventionally a brake-shoe and a portion of its attendant mechanism. Fig. 3 is a perspective illustrating another form of the invention. Fig. 4 is a perspective detail of one of the removable flange-sections. Fig. 5 is a vertical transverse sec-

tion illustrating one of the attaching devices employed with the removable flange. Fig. 6 is a similar view illustrating a slight modification. Figs. 7, 8, and 9 are detail views illustrating different forms of braking-surfaces.

Referring to the drawings, and particularly to Figs. 1 and 2, 1 indicates a car-wheel, having the usual tread 2 and rail-engaging flange 3, formed peripherally of the wheel at the inner side of the tread. This wheel may be and is of the usual form and material, but is, in accordance with my invention, provided upon its inner face with a braking ring or flange 4, substantially equal in diameter to the diameter of the wheel-tread. The periphery of this flange, which is preferably formed integral with the wheel, projects inwardly from the latter in a horizontal plane to present a braking-surface, which, as shown in said figures, is preferably provided with an inwardly-extending groove of V shape in cross-section for the reception of the similarly-shaped active face of a brake-shoe 5, sustained by the usual brake-rigging 6. At this point it is to be noted that by providing the wheel with the supplemental brake ring or flange the tread of the wheel is entirely relieved of all wear from the brake-shoes and that the rigging sustaining the latter will if it becomes broken or disconnected fall within the wheel-tracks, thus obviating liability of accidents. It is also to be remarked that by providing the supplemental flange the latter may be grooved, as herein shown, thus providing a maximum frictional surface for a minimum width or flange, whereby the greater braking power is obtained.

In Figs. 3 to 5, inclusive, the brake-ring 7 instead of being formed integral with the wheel is detachably secured thereto. In this form of the device the wheel is provided with a series of horizontal sockets 8, formed at intervals in its inner face and with transverse perforations 9, disposed one centrally of each socket. The ring 7 is provided upon its inner face with a plurality of lugs 10, disposed to register with and enter the sockets 8, said lugs being each provided with a centrally-arranged internally-screw-threaded opening 11,

which registers with and forms a continuation of the perforations 9 when the parts are assembled as in Fig. 5. Extended through the perforations 9 and in threaded engagement with the openings 11 are bolts 12, which serve to prevent escape of the lugs from the sockets. It will be apparent that by this construction the ring 7 will be maintained in firm secure attachment with the wheel and will in the event of the latter becoming derailed be of sufficient rigidity to sustain the car should said ring engage the rail and that the lugs will under said conditions prevent bending or breaking of the attaching-bolts 9.

It is to be noted that the ring is preferably composed of a pair of semicircular sections, which may be applied without removing the wheel from its axle, and that the heads of the bolts 12 are disposed toward the outer face of the wheel, whereby they may be readily inserted or removed. It is also to be noted that the ring is provided in this instance with a peripheral groove of substantially semicircular form in cross-section, whereby an increased area of friction-surface is attained.

In Fig. 6 I have illustrated the engaging lugs as being slightly tapered or conical from their inner toward their outer ends and the inner walls of the sockets or openings which receive them as being correspondingly tapered, whereby the parts may be more readily and accurately assembled.

In practice I propose to form the outer peripheral face of the ring, which constitutes its braking-surface, either flat, concave, or V-shaped in cross-section, as illustrated in Figs. 7, 8, and 9, respectively, but prefer the two latter forms, as I thereby attain the greatest possible amount of friction-surface relative to the width of the flange or ring, as heretofore pointed out.

From the foregoing it will be seen that I produce a device of comparatively simple construction which will be strong and durable and one which is admirably adapted for the attainment of the ends in view, and I do not

limit myself to the precise details herein set forth, inasmuch as minor changes may be made therein without departing from the spirit of the invention.

Having thus described my invention, what I claim is—

1. The combination with a car-wheel, of a brake-ring associated therewith, the braking-surface of said ring being of lesser diameter between its transverse edges than at said edges, and a brake-shoe having its active face conforming to said braking-surface.

2. The combination with a car-wheel, of a removable brake-ring therefor, lugs formed on one of the parts and engaging sockets or perforations formed in the other, and attaching-bolts extending through the wheel and said lugs.

3. The combination with a car-wheel provided with sockets or perforations, of a removable brake-ring, lugs formed on said ring for engaging the sockets and provided with internally-threaded openings, and attaching-bolts extending through the wheel and in threaded engagement with the lugs.

4. The combination with a car-wheel, of a removable brake-ring therefor consisting of a plurality of sections, lugs formed on one of the parts and engaging sockets or perforations formed in the other, and attaching-bolts extending through the wheel and said lugs.

5. The combination with a car-wheel, of a removable brake-ring therefor, lugs formed on one of the parts and engaging sockets or perforations formed in the other, and attaching-bolts extending through the wheel and said lugs, the braking-surface of said ring being of lesser diameter between its transverse edges than at said edges.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

GEORGE S. KYLE.

Witnesses:

ROBT. S. SMILEY,
M. K. BURGNER.