

C. E. CANDEE.
Car-Wheel.

No. 200,254.

Patented Feb. 12, 1878.

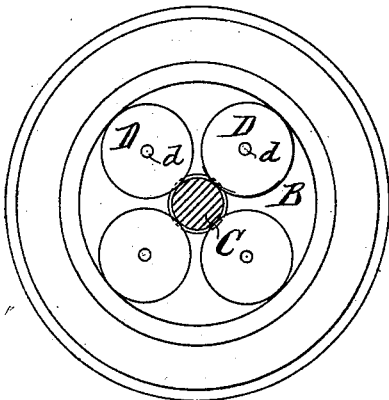
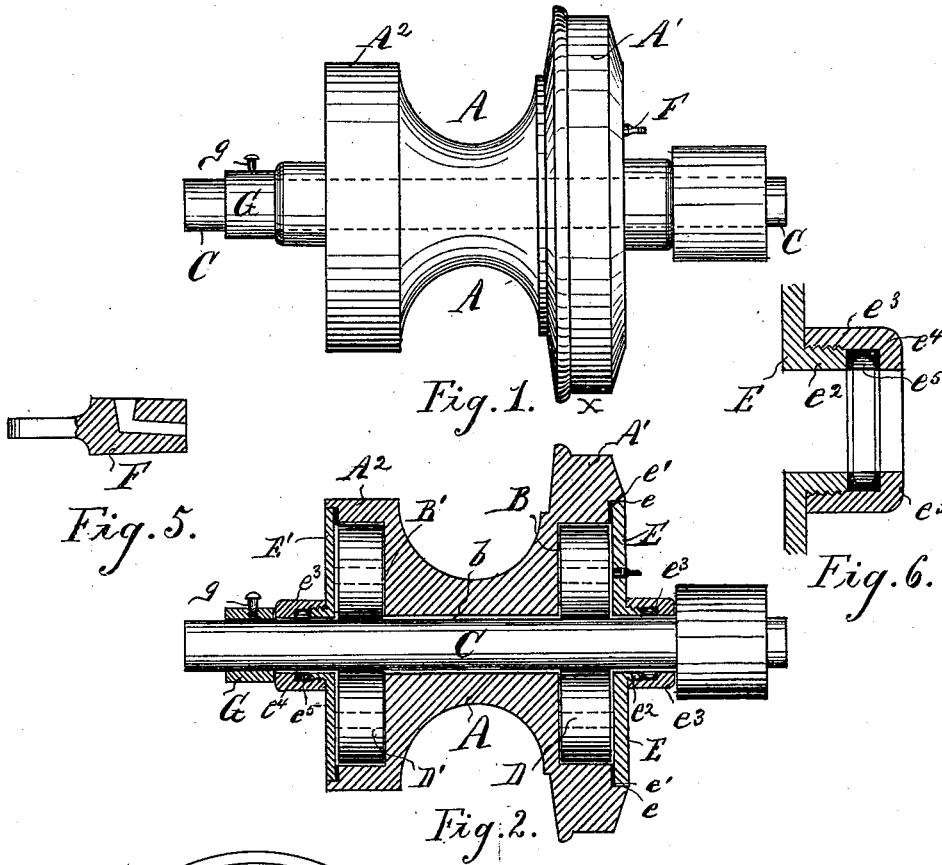


Fig. 3.

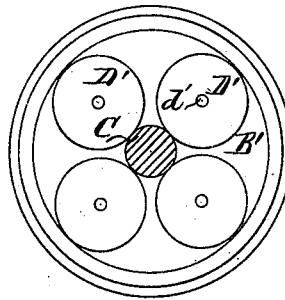


Fig. 4.

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CHARLES E. CANDEE, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN CAR-WHEELS.

Specification forming part of Letters Patent No. 200,254, dated February 12, 1878; application filed June 15, 1877.

To all whom it may concern:

Be it known that I, CHARLES E. CANDEE, of St. Louis, in the county of St. Louis and State of Missouri, have invented Improvements in Car-Wheels and manner of supporting same on axles, of which the following is a specification:

The nature of my invention consists in the improved construction of parts and their combination, as will hereinafter be pointed out in the claims.

Of the drawings, Figure 1 is a front elevation of my improved car-wheel and its parts. Fig. 2 is a sectional elevation of Fig. 1. Fig. 3 is a side elevation of the car-wheel supported on its axle, the cap being removed from its side to show the interior construction. Fig. 4 is also a side elevation of the sub-wheel having its cap removed to show the interior construction. Fig. 5 is a section of the plug for introducing the lubricant. Fig. 6 shows a section of the parts to form an air-tight joint surrounding the journal.

My car wheel or wheels do not form part and parcel of the car-axle—an advantage, as will hereinafter appear.

A represents my car-wheel in its entirety, and as such it is cast or formed to have the following constructive features: A¹, the car-wheel proper, and A² the sub-wheel. (See Figs. 1 and 2.) The car-wheel A¹ has, further, the internal chamber B, (see Figs. 2, 3,) and likewise the sub-wheel A² has an internal chamber, B'. (See Figs. 2, 4.) These chambers B B' communicate with each other by the annular passage *b*. (See Fig. 2.) It is through the annular passage *b* that the journal of the car-axle C passes to support the wheels.

I utilize the body of the car-wheel (its internal chamber) to answer the purposes of the ordinary car-axle box. Hence the anti-friction wheels D (of which there can be the required number) are provided in the chamber B, and said wheels turn independently on their axis *d*, being so arranged that the periphery of the wheels shall engage the annular surface of said chamber B, and also the periphery of the journal of the car-axle. (See Fig. 3.) Thus the car-wheel proper, so provided with wheels D, turns entirely upon rolling friction. In a similar manner I provide within the chamber

B' anti-friction wheels D', to turn independently on their axis *d'*, and engaging the journal and annular face of their chamber, (see Fig. 4,) and thus said sub-wheel is also supported on rolling friction.

The wheel A¹ and its sub-wheel A² are cast together, or formed to be united. This construction is intended to counterpoise the car-wheel proper. The sub-wheel resists any tendency on the part of the car-wheel to wobble, and keeps said wheel in a vertical or plumb line of action.

E is the cover or cap wherewith to close the open side of the chamber B. The cap is fitted to engage the bearing-edge at *e*, formed in the wheel A¹, and a packing, *e*¹, is placed between the cap and its bearing-edge, to form the needed air-tight joint. By means of screw-bolts the cap E is secured to the wheel A¹.

The joint of the cap surrounding the axle is closed in the following manner: The cap E has, surrounding the axle, an annular projection, *e*². This is screw-threaded. A sleeve, *e*³, is provided to screw on the projection *e*² of the cap, and at the point where said sleeve *e*³ surrounds the axle the packings *e*⁴ and *e*⁵ are provided. (See Fig. 6.) The annular packing *e*⁴ (of rubber or suitable material) is made V-shaped internally, and in said V groove the packing of hemp is held, and it is this latter packing which directly closes the joint around the axle air-tight. The packing *e*⁵ is simply to retain and hold the hemp packing in place. In like manner the cap E' closes the chamber B', and in the joint of the sleeve surrounding the axle are also similar packings. By this manner of closing the joints no air, dust, or impurities can enter the lubricant-chamber.

The lubricant is introduced into the chamber B by means of the plug F, which is fitted in a corresponding opening made in the cap E. (See Figs. 2, 5.) This plug has a right-angled orifice, (see Fig. 5,) so that by withdrawing the plug the lubricant can be introduced through the orifice in the plug into the chamber, and by inserting the plug in the cap the orifice is closed.

The truck and weight of the car are sustained on the outer end of the car-axle. The inner part of the axle I provide with a movable collar, G, which can be adjusted along the axle

to secure the car-wheel parts A¹ A² in position, and also to secure said car-wheels in positions required to adapt them for narrow or broad gage purposes. The collar G is secured to the axle by its set-screw *g*. (See Fig. 2.)

I claim—

1. The car-wheel A¹ proper, the sub-wheel A², the body of each being provided with anti-friction wheels D D', arranged as shown and described, the caps E E' and the journal of a car-axle, all said parts being combined to operate in the manner and for the purpose set forth.

2. The improved car-wheel, consisting of the car-wheel A¹ proper, having the lubricant-chamber B, the sub-wheel A², having the lubricant-chamber B', the caps E E', sleeves *e*³, the packing *e*⁴ *e*⁵, all said parts being combined with relation to the journal of a car-axle, so as

to form the annular passage communicating from the chamber B to B', as and for the purpose set forth.

3. The car-wheel A¹, its chamber B, wheels D, the sub-wheel A², its chamber B', wheels D', the caps E E', stuffing-boxes *e*³, the annular passage from chamber B to B', said parts being combined with the journal of a car-axle, and forming the improved car-wheel A, to operate in the manner and for the purpose set forth.

In testimony of said invention I have hereunto set my hand.

CHARLES E. CANDEE.

Witnesses:

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