

G. M. PALMER.

Car Axle.

No. 34,070.

Patented Jan. 7, 1862.

Fig. 1.

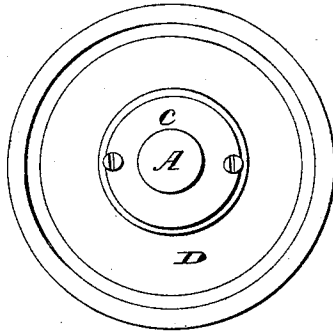
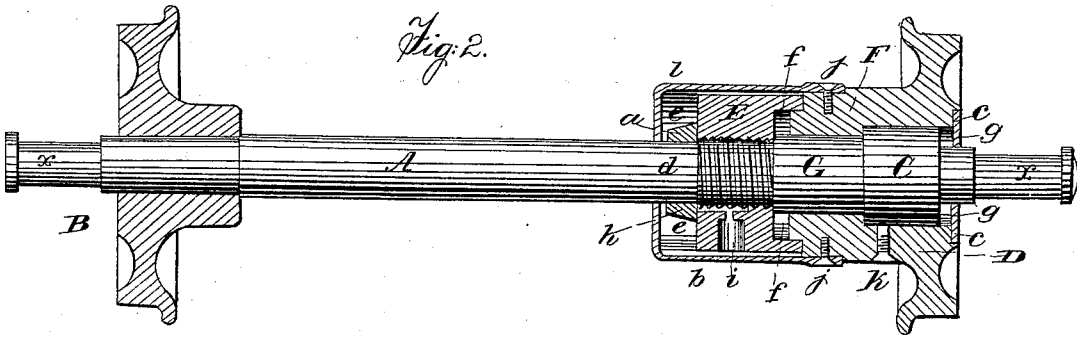


Fig. 2.



Witnesses.

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GILMAN M. PALMER, OF CLINTON, MASSACHUSETTS.

IMPROVEMENT IN MODE OF ATTACHING CAR-WHEELS TO AXLES.

Specification forming part of Letters Patent No. 34,070, dated January 7, 1862.

To all whom it may concern:

Be it known that I, GILMAN M. PALMER, of Clinton, in the county of Worcester and Commonwealth of Massachusetts, have invented certain new and useful improvements in the method of attaching car-wheels to axles so that each may have a motion independent of the other; and I do declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference thereon, making a part of this specification, in which—

Figure 1 is an elevation showing one of a pair of car-wheels attached to the axle in the manner hereinafter set forth, and Fig. 2 is a section extending longitudinally through the axle and wheels.

The nature of my invention consists in attaching and holding a car-wheel upon the axle so that it may move independently of the axle, and thus under certain circumstances it will revolve while the opposite wheel is stationary, or the opposite wheel, if fastened rigidly to the axle, may rotate with the axle, while the loose wheel is stationary.

Ordinarily both wheels are attached rigidly to the axle, and this arrangement is well adapted to a straight track; but in running a car upon curves, where one wheel is naturally required to pass over a greater distance in a given time than the other, there is considerable torsion upon the axle and strain upon the wheels and other parts of the car. It is the object of my invention to overcome this difficulty, and in order to enable others skilled in the art to use my invention, I proceed to describe the construction and operation of the same.

The ordinary axle A is used, with bearings *x x*, for the support of the car.

The wheel B is the common car-wheel attached firmly to the axle in the ordinary manner.

At a proper distance from the end of the axle the collar C is shrunk or forged upon the axle, and this collar holds or supports the wheel upon its outer or exposed side.

The wheel D is constructed with a circular recess upon its outer side, which admits the collar C and leaves a space between the collar C and the surface of the wheel sufficient to receive appropriate packing *g g*, which may

contain oil and also protect the axle from dust. A second recess of greater diameter and less depth is also formed around the one last mentioned. This latter recess is designed to receive a cap *c*, which holds the packing *g g* in place and protects the packing and bearings of the wheel and axle from dust. The cap *c* is secured to the wheel by means of screws or their equivalents.

The wheel D is held and supported on the opposite or inner side by a cylindrical collar E, which is made fast to the axle by means of the screw *d*, cut on the axle, and the wedge *h*. A set-screw may also be used to hold or to aid in holding the collar E.

A cylindrical hub F is projected from the wheel on its inner side. In the end of the cylindrical collar E is a recess, which answers to a shoulder upon the hub F of the wheel D. This recess is of sufficient depth to receive the shoulder and also to receive packing *f f* against the end of the hub. This packing may be of material adapted to absorb and hold a supply of oil for lubricating the bearings. The collar is perforated at *i* in such a manner that oil is conveyed to the axle. The removal of the screw *k* also furnishes an opportunity for conveying oil to the axle.

The cap *a* is designed to cover and protect the screw *d*, and it also contains a slot, which admits and holds the end of the wedge *h*.

Surrounding the axle, the collar E, and a portion of the hub F is a shield or cap *l*, which is attached to the hub F by screws *j j*, thus protecting the joints and axle from all foreign substances. Between this shield or cap *l* and the cap *a* and the axle is a space *e e* to receive packing and oil for protecting and lubricating the bearings. This shield or cap may be made of cloth, leather, metal, or other equivalent material, and it may be fastened to the collar E or to the hub F.

The axle at G is of sufficient size to allow the screw *d* to be cut toward the collar C if and whenever there should be such wear of the parts of the collar E and the hub F as to require it.

Both wheels of the pair may be attached to the axle in the manner above described, or one of them may be attached to the axle rigidly, as is shown in Fig. 2.

The wheel D might be held upon the axle

by a collar shrunk upon it on the inner side of the wheel either with or without the use of the collar E.

I am aware that various devices have been before invented for holding car-wheels loosely upon the axle; but I am not aware that any one has invented the mechanism above described and applied it to the purpose herein specified.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The use of the collar C or its equivalent, whether forged with the axle or shrunk upon it or attached to it by any other means, in combination with the wheel D and the hub F, or their equivalents, in the manner and for the purposes substantially as described.

2. The use of the cap *c* or its equivalent, in combination with the wheel D, the space *g*, and the collar C, or their equivalents, in the manner and for the purposes substantially as specified.

3. The collar E or its equivalent, in combination with the screw *d*, the space *f*, and the

hub F, or their equivalents, in the manner and for the purposes substantially as specified.

4. The cap *a* or its equivalent, in combination with the collar E, screw *d*, wedge *h*, and the shield *l*, or their equivalents, in the manner and for the purposes substantially as herein set forth.

5. The use of the screw *d* or its equivalent, in combination with the collar E and the wheel D, with its hub F, or their equivalents, in the manner and for the purposes substantially as specified.

6. The use of the wedge *h* or its equivalent, in combination with the screw *d* and the collar E, or their equivalents, in the manner and for the purposes substantially as specified.

7. The shield *l* or its equivalent, in combination with the space *e*, the collar E, and the hub F, or their equivalents, in the manner and for the purposes substantially as specified.

GILMAN M. PALMER.

Witnesses:

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