

**Car Axle.**

Patented Jan. 30, 1866.



J. W. Coombs  
a Letter

Geo Sewell

# UNITED STATES PATENT OFFICE.

GEORGE SEWELL, OF BROOKLYN, NEW YORK.

## IMPROVED MODE OF ATTACHING CAR-WHEELS TO AXLES.

Specification forming part of Letters Patent No. 52,328, dated January 30, 1866.

*To all whom it may concern:*

Be it known that I, GEORGE SEWELL, of the city of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Mode of Attaching Car-Wheels to their Axles; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a sectional view taken vertically through the center of the wheel and in line with the axle. Fig. 2 is a cross-sectional view taken in the line *xx* of Fig. 1.

It has been found desirable in railway practice that, with the exception of the driving-axle of the locomotive, each car-axle should have one of its wheels loose thereon, in order to facilitate the turning of short curves; but the efficiency of such an arrangement has always been impaired by the fact that, as heretofore constructed, it has been difficult to properly lubricate the journal. The oil has not been prevented from escaping therefrom, thus causing much needless expense for lubricating material; and, furthermore, dust and grit penetrating between the hub and axle have caused, by their abrading action, the rapid deterioration of the wearing-surfaces of the same.

This invention is designed to obviate these objections; and it consists in a novel arrangement of parts by which a car-wheel, loose upon its axle, has its journal automatically supplied with a proper quantity of oil, which is prevented from escaping from the same and being wasted, and by which dust or dirt is effectually excluded from the journal, my invention thus materially reducing the expense of using this class of car-wheels, and enabling them to be used with perfect success.

To enable those skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

The wheel C is loose upon the axle D, and is prevented from sliding longitudinally thereon by means of the collar *h*, welded or otherwise formed upon the axle and fitting into a suitable recess in the inner end of the hole A.

On the opposite side of this collar and placed upon the axle is an annular plate, *k*, which is secured to the hub by bolts *m*.

The collar *h*, being inclosed between the plate *k* and the inner end of the hub, prevents the wheel from sliding, as aforesaid, and, being entirely surrounded by the plate *k* and the end of the hub, is effectually protected against the intrusion of particles of dust or grit.

The hub A, on the inner side of the wheel, is provided with an annular oil-chamber, B, which communicates with the axle D by means of one or more holes or passages, *s*. At one side of these holes or passages *s* is a partition, *c*, placed in a line parallel with the axle. The object of this partition is to carry the oil in the chamber B around as the wheel C revolves, so that when the oil is brought over the axle a sufficient quantity thereof will flow down through the holes *s*, and thus supply it with oil at each revolution of the wheel.

The oil is poured into the chamber B through a hole, *n'*, which is closed by a screw, *w*.

In the outer end of the hub is a stuffing-box, in which is placed the packing-ring *i*, composed of india-rubber or other suitable substance, and compressed into close contact with the axle by the annular nut *n*. The inner end also of the hub is packed in like manner, the packing-ring *o* being situated in a stuffing-box in the plate *k* and compressed by the nut *r*.

The packing-rings will prevent the lubricating material from escaping from the journal, and also exclude the admission of dust and dirt, thus preventing their undue wear or abrasion.

It will be seen that the supply of oil in the chamber B will be carried around with the rotation of the wheel C by the partition *c*, and that whenever the holes *s* are brought above the axle the oil will flow downward through them to the said axle, being thus fed thereto at each revolution of the wheel, the oil being prevented from leaving the axle and all extraneous substances excluded from the same by the packing-rings *i* and *o*, as hereinbefore explained, while by the employment

of the collar *h* and annular plate *k* a convenient and effectual means of holding the loose wheel upon the axle is obtained.

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

The two stuffing-boxes, the collar *h*, and annular plate *k*, all arranged with reference

to each other and to the chambered hub substantially as set forth, for the purpose specified.

GEO. SEWELL.

Witnesses:

J. W. COOMBS,  
A. LE CLERC.