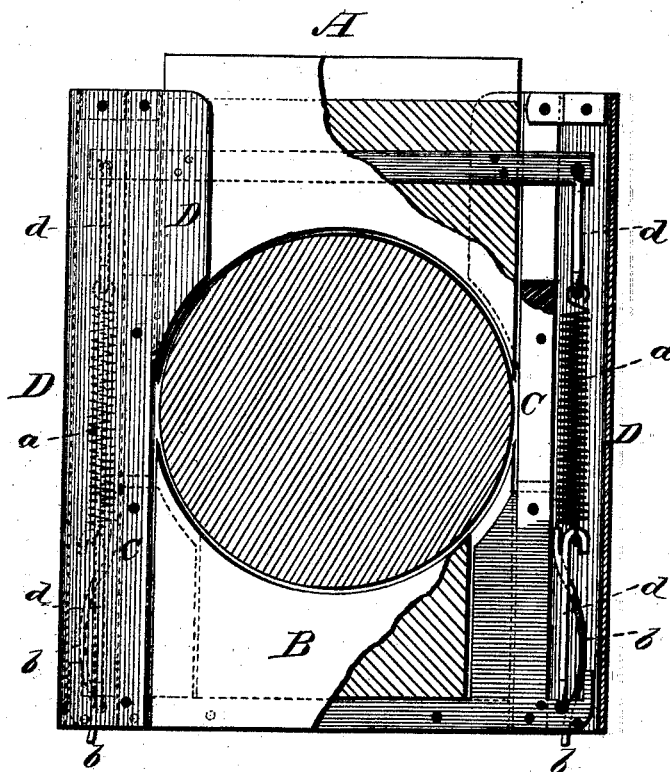


W. H. FITZGERALD.

CAR-AXLE WASHER.

No. 180,566.

Patented Aug. 1, 1876.



Witnesses:

*F. C. Dieterich*

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Per: *C. H. Watson & Co* Attorneys.

# UNITED STATES PATENT OFFICE.

WALTER H. FITZ GERALD, OF BROOKLYN, NEW YORK.

## IMPROVEMENT IN CAR-AXLE WASHERS.

Specification forming part of Letters Patent No. 180,566, dated August 1, 1876; application filed January 14, 1876.

*To all whom it may concern:*

Be it known that I, WALTER H. FITZ GERALD, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Washers for Car-Axles; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to an automatically-compensating washer for car-axles, which admits of being placed in suitable position in the axle-box to prevent the admission of dust and grit, and retard the escape of the oils, thus enabling the axle to have its proper supply of lubricant, thereby diminishing the chances of the journal becoming heated, consequently granting much longer wear to the axle, and causing the invention to be a much needed and economical device for railroads.

My improvement consists in constructing washers for car-axles of suitable material, with spring or yielding pressure, and of two or more parts to conform to the axle, and to compensate for all wear of the washer, as well as for any swelling or shrinkage of the material employed in its construction, as will be hereinafter more fully described, and pointed out by the claim.

In constructing the washer of material of the nature of vulcanized fiber it may be either made in two sections, A and B, of the same material, or the side pieces C C may be of different nature from the center ones; but said side pieces may be permanently affixed, so as to appear in all particulars the same as though the washer were constructed of but two parts.

The main object of using different material for the side pieces would be to lessen the cost of construction, as such material is much more expensive than wood. Consequently, a washer may be made with its bearing-surface of a composition superior to wood, and yet be as durable as though the entire structure was of one material.

In constructing the washer of wood or of any material of a corresponding nature I make the center-pieces the same in width as the diameter of the circle to be employed, and attach the side pieces C by pressure, which

may be of spring or other substance, thus, with the aid of the vertical pressure employed, which is also yielding, making a washer which will automatically compensate for any effect the oils or atmosphere may have upon the nature of the material used in its construction, as also for all wear it may receive from the axle, and keeping its true circle until entirely worn through.

In constructing the washer to allow of its bearing-surfaces being of anti-friction composition, the diameter of its circle may be made larger than the diameter of the axle, and the space occupied with suitable anti-friction bearings.

I also employ a suitable covering, D, for the sides C of the washer, to protect the springs, and to prevent their action from being impeded or inoperative from the gums produced by the lubricants used, and the dust and grit settling on the axle-boxes, caused by the momentum of the cars. This covering D may extend a suitable distance over the center-pieces A B, and serve as guides for both center-pieces; or, if not extended to form said guides, metal or other guides may be attached.

In the drawing I have shown the springs *a*, which form the yielding pressure for the center-pieces, as well as the springs *b*, which form the yielding side pressure, all inclosed within the coverings D D, and connected to metal bars *d*, passing through, or attached to, the various pieces; but I do not confine myself to any particular construction or arrangement of the parts, as the same may be varied almost indefinitely without departing from the spirit of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination of the divided washer with the springs *a*, the cross-piece connecting them, and the independent protecting metal case, provided with guides for said springs, substantially as and for the purpose specified.

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

WALTER H. FITZ GERALD.

Witnesses:

CHRISTIAN L. HINES,  
WILLIAM J. KNAPP.