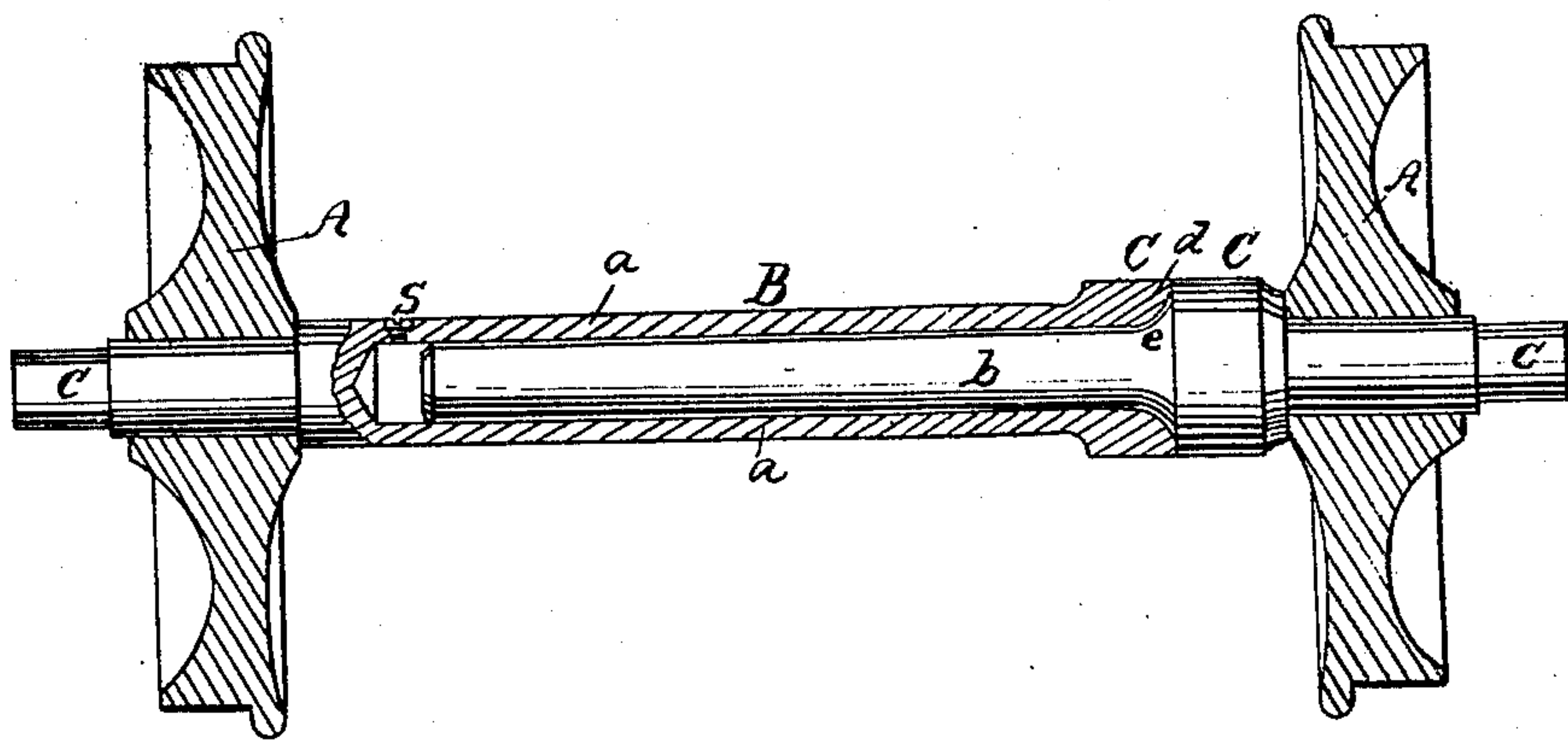


A. E. ELMER.
RAILWAY CAR AXLE.

No. 61,180.

Patented Jan. 15, 1867.



Witnesses

Samuel N. Piper
Geo. H. Andrews

Inventor

Albert E. Elmer

by his attorney

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United States Patent Office.

ALBERT E. ELMER, OF GREENFIELD, MASSACHUSETTS.

Letters Patent No. 61,180, dated January 15, 1867.

IMPROVED RAILWAY CAR AXLE.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL PERSONS TO WHOM THESE PRESENTS SHALL COME:

Be it known that I, ALBERT E. ELMER, of Greenfield, in the county of Franklin, and State of Massachusetts, have invented an Improved Double Axle for Railway Carriages; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawing, which is a vertical and longitudinal section of such axle and its pair of wheels.

In such drawing, A A represent the wheels and B the axle. The said axle is made in two parts, *a b*, one being a solid cylinder and the other tubular for the reception of such cylinder. Each part has one journal, *c*, extended from it and projecting from its wheel. Furthermore, each part, *a b*, is constructed with an abutting head, C, which is arranged upon it in manner as represented in the drawing. These heads rest against each other, one of their surfaces or shoulders in contact being formed convex and the other concave, as shown at *d* and *e*. These heads and their convex and concave shoulders, as described, are for strengthening the axle and for centralizing its parts, *a b*, while they may be in use. This axle will permit the outside wheel, while the wheels may be running on a curve of the railway track, to travel faster than the other so as to accommodate itself to the longer rail of the curve. In this way the liability of twisting and breaking the axle incident to the single axle is overcome, and less power will be required to drive the carriage on the rails. The double axle is advantageous in other respects, and particularly in saving much of the wear of the rails and wheels to which they are subjected when the single axle is employed. If desirable, to strengthen the axle, there may be a flange at or extending along the bottom of the tubular part of the axle. By making one of the shoulders convex and the other concave, as described and represented, the concavity and convexity thereof by co-operation serve to centralize the parts of the axle, particularly after their rubbing surfaces may have become worn, so as to increase the diameter of the bore of the tubular part, and also that of the cylindrical part. A small screw, *s*, may be screwed upon the tubular part of the axle. On removal of the screw oil may be poured into the screw-hole so as to lubricate the internal surfaces of the axle.

I am aware that before my invention axles have been made in two parts, so that one wheel may revolve independently of the other, therefore I do not claim such.

What I claim, is—

My improved railway carriage axle, made as described, viz, with the concave and convex shoulders *d e*, arranged and combined with the tubular and cylindrical parts *a b*, and with respect to the wheels, substantially as described.

ALBERT E. ELMER.

Witnesses:

CHAS. L. FISK, Jr.,

SAM. H. REED.