P. R. WALSH.
Wagon-Axle.

No. 205,591. Patented July 2, 1878.

Fig. 1.

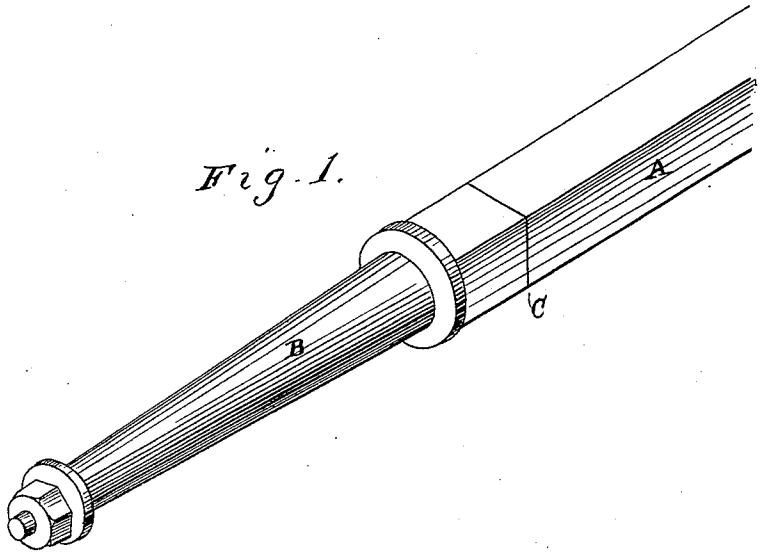
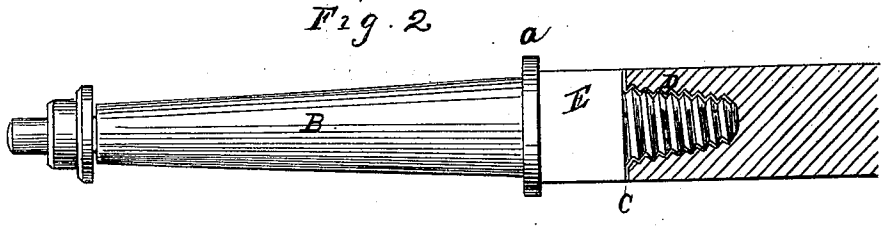


Fig. 2



Witnesses
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UNITED STATES PATENT OFFICE.

PATRICK R. WALSH, OF VALLEJO, CALIFORNIA.

IMPROVEMENT IN WAGON-AXLES.

Specification forming part of Letters Patent No. **205,591**, dated July 2, 1878; application filed October 4, 1877.

To all whom it may concern:

Be it known that I, PATRICK R. WALSH, of Vallejo, county of Solano, and State of California, have invented an Improvement in Wagon-Axles; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings.

My invention relates to that class of wagon or carriages axles constructed in such a manner that the spindle ends can be taken off and replaced without disturbing the axle in its bed; and it consists in providing the removable spindle with an extension-piece, so that a clip can be put between the joint and the spindle proper, which gives additional strength, as hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a perspective view. Fig. 2 is a longitudinal section.

Let A represent a wagon or carriage axle, and B the spindle, or that portion outside the axle-bed on which the wheel turns. This spindle end is constructed with an extension-piece, E, so that it can be taken off from the main part of the axle at a point, C, inside the inner end of the spindle B a sufficient distance from the collar *a* to allow the introduction of a clip between the joint and the spindle. This joint or connection is made by a projecting screw, D, on the inner end of the spindle, which fits into a thread cut in the end of the axle A. The screw D is made to taper from the end, as shown, so as to be of nearly uniform strength, and overcome the liability of breaking at the base of the screw.

The axle A is secured to the axle-bed by clips in the usual manner, and the joint C is made at a sufficient distance from the shoulder at the inner end of the spindle to allow a clip to be used to secure this portion, and thus prevent any separation of the joint, and to secure it firmly to the axle-bed.

An axle formed in one piece, if broken, necessitates its entire removal from the axle-bed and carriage, in order to be repaired, causing an expenditure of time and labor, and injuring the appearance of the carriage, paint and varnish necessarily being marred and scratched in the operation; but by my invention, in case of a break, which almost universally occurs at the inner end of the spindle, the axle is taken apart at the joint C, a new spindle end, B, fitted to the axle without removing it from the axle-bed or the carriage in any way, thus overcoming the difficulties and objection of repairing a broken axle constructed of one piece in the ordinary manner.

Axles constructed in this manner may be kept in stock of standard sizes, and when one is broken it will only be necessary to replace the broken part at a small expense.

I am aware that removable spindles attached by screws have heretofore been used, and hence I do not claim such arrangement broadly; but,

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

The removable spindle B, provided with an extension-piece, E, and screw D, in combination with the axle A, provided with a female screw, as set forth.

In witness whereof I have hereunto set my hand and seal.

PATRICK R. WALSH. [L. S.]

Witnesses:

FRANK A. BROOKS,

WILL L. TAYLOR.