

C. W. RICHARDSON.
VEHICLE-AXLE.

No. 169,845.

Patented Nov. 9, 1875.

Fig. 1.

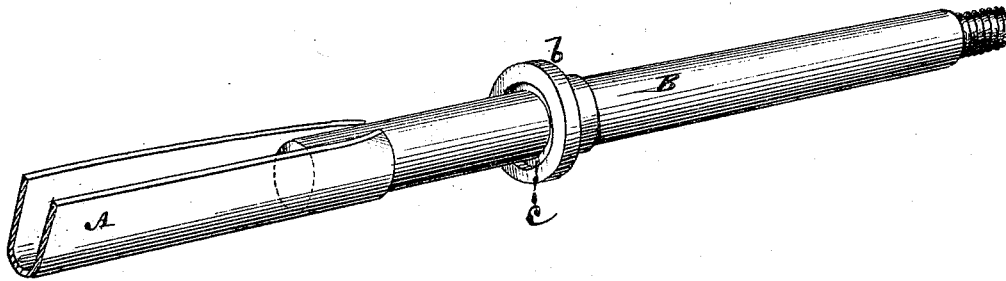
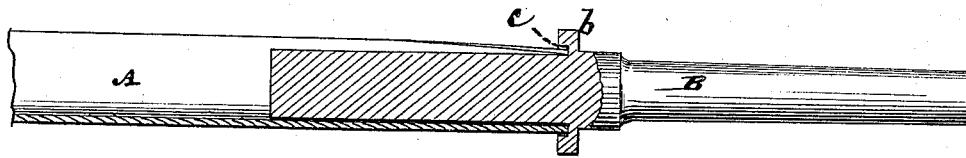


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

CLINTON W. RICHARDSON, OF FLUSHING, ASSIGNOR TO THE DAVIS METALLIC WHEEL-MANUFACTURING COMPANY, OF NEW YORK, N. Y.

IMPROVEMENT IN VEHICLE-AXLES.

Specification forming part of Letters Patent No. 169,845, dated November 9, 1875; application filed August 26, 1875.

To all whom it may concern:

Be it known that I, CLINTON W. RICHARDSON, of Flushing, in the county of Queens and State of New York, have invented a new and useful Improvement in Axle-Trees for Wagons and other wheel-vehicles; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms part of this specification.

This invention relates to axles for vehicles of different descriptions, in which the axle is composed of a metallic shell or tree-piece having a concave U-shaped cross-section journal-pieces fitted therein, and made of round bar steel with collars, and secured within the ends of the shell by brazing or welding, and, if desired, a wooden filling to the shell, substantially as described in Letters Patent No. 152,974, granted to R. W. Davis, A. W. Davis, and E. Eldridge, July 14, 1874.

The invention consists in a grooved construction of the collars on the journal-pieces with the ends of the metallic shell bent to enter said grooves, whereby said shell is more effectually retained in position and braced at its ends, and the axle-tree, which combines lightness with strength, is generally improved.

Figure 1 represents a view, in perspective, of the one end of the improved axle or axle-tree before fitting the grooved collar of the journal-piece over the end of the shell. Fig. 2 is a vertical longitudinal section of the same after the metallic shell or tree-piece has been entered within the grooved collar of the journal-piece.

A is the metallic tree-piece, and B one of the journal-pieces at the one end of the same. The tree-piece A consists of a shell of spring-steel of U shape in its transverse section, which form may be given it by putting it into a drop and swaging or striking it up into shape.

It may be made either straight or slightly arched in a longitudinal direction. Each journal-piece B may be of round steel with the journal turned and a collar, *b*, shrunk or forged on it, said collar forming a shoulder at the end of the tree-piece for the hub of the wheel to bear against. These journal-pieces B are fitted snugly into the U-shaped ends of the tree-piece, and are united therewith by welding or brazing, but, preferably, by brazing. Before uniting, however, the ends of the tree-piece and the journal-pieces, the ends of the metallic shell or tree-piece A are turned in, so as to continue their circular form beyond the half-circle, for the purpose of entering them within the grooves *c* in the inner face of the collars *b* on the journal-pieces, whereby the shell A is more effectually retained in position and braced at its ends, and the tree-piece and journal-pieces more firmly secured or combined; also, the axle generally improved. A wooden filling, shaped to fill the concavity of the tree-piece, and projecting slightly above it, may be combined, if desired, with the trough-shaped tree-piece and journal-pieces fitting therein, to preserve the U shape of the tree-piece, and to give it stiffness and strength in a lateral direction; but in many cases the bent shape of the metallic shell or tree-piece will give sufficient stiffness without the wooden filling.

I claim—

The journal-pieces B, having the collars *b*, constructed with the grooves *c*, in combination with the tree-piece A, consisting of a metallic shell, U-shaped in cross-section, and having its ends bent around the shanks of the journals and fitted within the grooves *c* in the collars *b*, substantially as shown and described.

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Witnesses:

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