

S. FORRESTER.

Carriage Axle.

No. 97,623.

Patented Dec. 7, 1869.

FIG. 1

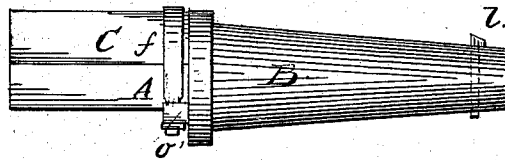


FIG. 2

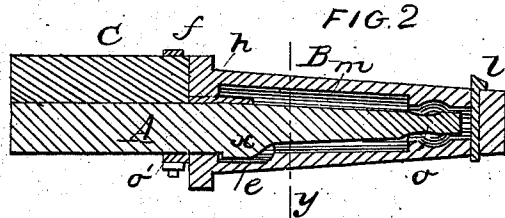
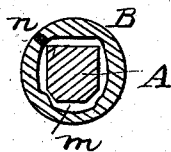


FIG. 3



WITNESSES

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SAMUEL FORRESTER, OF ALLEGHENY, PENNSYLVANIA.

Letters Patent No. 97,623, dated December 7, 1869.

## IMPROVEMENT IN CARRIAGE-AXLES.

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

To all whom it may concern:

Be it known that I, SAMUEL FORRESTER, of the city and county of Allegheny, and State of Pennsylvania, have invented a new and useful Improvement in Spindles for Axles of Carriages and Wagons; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in securing a cast-iron or steel spindle on the axle of a carriage or wagon, by forming the core of the spindle and the end of the axle in such a manner and form as to leave a space around the axle, which space is filled with a metal or alloy, after adjusting the spindle on the axle, the whole constructed as hereinafter described.

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

In the accompanying drawings, which form part of my specification—

Figure 1 is a side view of my improvement in spindle for axles of carriages, &c.

Figure 2 is a longitudinal section of the same.

Figure 3 is a transverse section of the same, when cut through at line *y* of fig. 2.

In the drawings—

A represents a section of an axle of a carriage, the outer end of which is made tapering in form, with an indentation at *o*, and a projecting shoulder at *x*.

The spindle B is provided with a "clip"-flange, *o'*,

which is used in connection with the clip *f*, for binding the wood C and the inner end of the spindle to the axle A.

The spindle B is cored out, so as to leave the space *m*, around the axle A, with a cavity, *e*, for the projecting shoulder X on the axle.

*l* represents the linchpin.

*n* represents an opening leading into the space *m*.

Having all things constructed, as hereinbefore described, the spindle B is adjusted on the axle A, and held, by means of the wedge *h* and clip *f*, in the desired position; the molten metal or alloy is then poured into the space *m* through the opening *n*, thereby securing the axle firmly and securely in the spindle.

By this mode of securing the spindle on the axle, the jarring and rattling of the spindle on the axle are avoided, and a perfect fit of the axle in the spindle is always secured, thereby obtaining greater strength of the several parts with relation to each other.

Having thus described the nature, construction, and operation of my improvement,

What I claim, as of my invention, is—

The projection *x*, when used in combination with cavity *e*, in the spindle B, wedge *h*, and the metal or alloy filling, as herein described, and for the purpose set forth.

SAMUEL FORRESTER.

Witnesses:

JAMES J. JOHNSTON,  
JOHN LOCKIE.