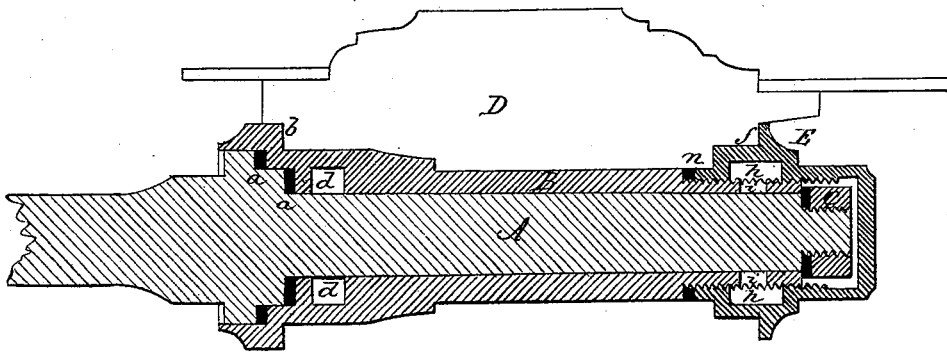


E. WELLS.
Carriage Axle.

No. 112,757.

Patented March 14, 1871.



Witnesses.

J. M. Shumway
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Edward Wells
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UNITED STATES PATENT OFFICE.

EDWARD WELLS, OF NEW HAVEN, CONNECTICUT.

IMPROVEMENT IN CARRIAGE-AXLES.

Specification forming part of Letters Patent No. 112,757, dated March 14, 1871.

To all whom it may concern:

Be it known that I, EDWARD WELLS, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Carriage-Axles; and I do hereby declare the following, when taken in connection with the accompanying drawing and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawing constitutes part of this specification, and represents a longitudinal central section.

This invention relates to an improvement in carriage-axles, especially that class termed "patent axles"—that is, axles in which the cap or covering-nut in front is secured to the inner end of the box by bolts passing through the hub.

The object of my invention is to dispense with these bolts, as also to afford a convenient means of lubrication; and it consists in constructing the axle-box with an annular chamber at the inner end, combined with a covering-nut at the front, which is also provided with an annular chamber, and from which chamber openings through the box communicate directly to the axle-spindle.

A is the spindle of the axle, of common construction; B, the box fitted to the axle in the usual manner, and secured thereon by a nut, C, which, turned onto the axle, bears against the end of the box. At the inner end one or more shoulders are formed for a packing, as at *a*, and in the box near the same end an internal annular groove, *d*, is made, forming a chamber around the axle. The box is fitted into the hub D from the rear, the box taking the bearing on the shoulder *b*. On the front end of the box a cap, E, is fitted, screwing onto the box, and provided with a shoulder, *f*, which bears against the hub at the forward end, thus securely holding the box in the hub. The cap E is constructed with an annular

groove, *h*, upon its inside, forming a chamber around the box, and from this chamber several openings, *i*, communicate directly to the axle-spindle. The cap and box are threaded to such an extent that the cap takes hold of the box both forward and in the rear of the said openings *i* and chamber *h*, as in the drawing, the cap covering the nut C and forming a finish upon the outer end. A packing, *n*, may be placed between the inner end of the cap and the shoulder on the box, to prevent the possible escape of the lubricating material into the hub.

To lubricate the axle it is only necessary to remove the cap E and fill the chamber *a* and replace the nut. As the wheel revolves, the lubricating material, passing through the openings *i*, works its way onto the axle-spindle to the chamber *d*. This chamber *d* may be filled, if desirable, by removing the nut C when the cap E is removed, but generally the lubricating material introduced into the cap E, as described, will be sufficient.

By these improvements the construction of the wheel is very much simplified and the facilities for lubricating much increased, as a quantity of material may be retained in the chamber for consumption on the axle.

I claim as my invention—

1. The combination of the cap E, provided with the chamber *h*, with the box B, axle-spindle A, and nut C, when the said box is provided with openings from the chamber to the axle, and the said cap threaded to take hold of the box both in front and rear of said chamber *h*, substantially as set forth.

2. In combination with the foregoing, the arrangement of the internal annular chamber, *d*, in the box at its rear end, as specified.

EDWARD WELLS.

Witnesses:

A. J. TIBBITS,
JOHN H. SHUMWAY.