E. E. LINCOLN.
Axles for Vehicles.

No. 213,117. Patented Mar. 11, 1879.

Fig. 1.

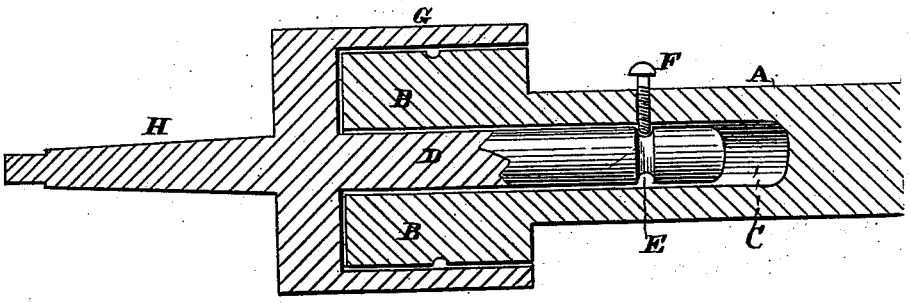
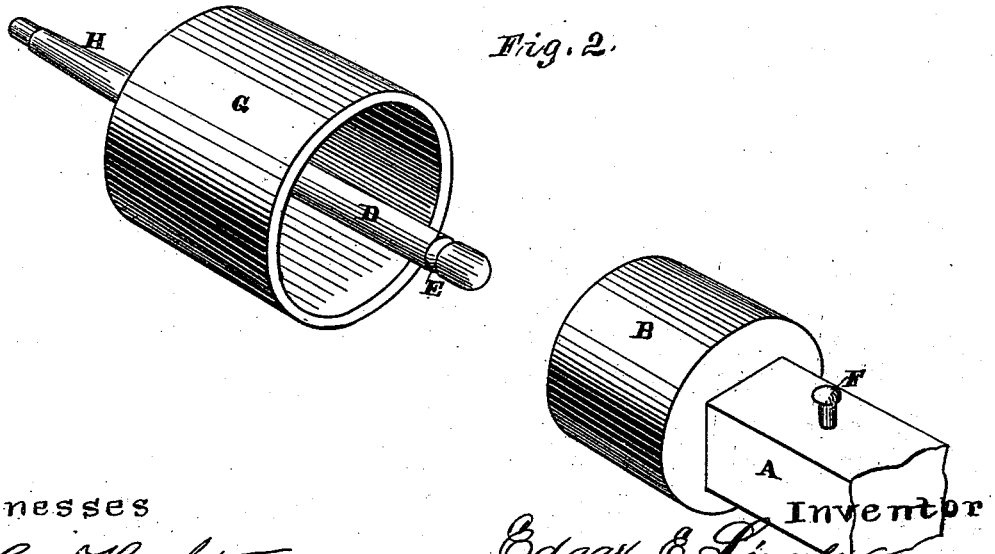


Fig. 2.



Witnesses
Geo. H. Strong.
Frank A. Brooke

Inventor
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UNITED STATES PATENT OFFICE.

EDGAR E. LINCOLN, OF SAN JOSÉ, CALIFORNIA.

IMPROVEMENT IN AXLES FOR VEHICLES.

Specification forming part of Letters Patent No. **213,117**, dated March 11, 1879; application filed August 13, 1878.

To all whom it may concern:

Be it known that I, EDGAR E. LINCOLN, of San José, county of Santa Clara, and State of California, have invented an Axle and Axle-Box; 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 a novel construction and method of uniting axles and axle-boxes, so that I am enabled to reduce the size of the journal to very small proportions. I render it perfectly dust-proof and easy to lubricate, and I am enabled to reduce the space which the box occupies within the hub, so that the mortises for the spoke-tenons may be extended to near the center, thereby greatly strengthening the important points, while my construction prevents any oil or lubricant from finding its way from the journal to the interior of the hub to loosen the spokes.

In order to more fully explain my invention, reference is made to the accompanying drawings, in which—

Figure 1 is a longitudinal section of the box, showing the manner in which it is fitted into a hub, and also the journal. Fig. 2 is a view of the axle and the socket.

A is the axle, which may be made in any of the ordinary forms. I have shown it as being made square, and it has an enlarged head, B, turned upon it. A hole, C, is bored centrally into the end of the axle, and the spindle or journal D is fitted to turn within this hole or box which is formed in the axle. In order to retain it in place a groove, E, is turned around the axle, and the point of a screw or pin, F, enters this groove, or in some similar manner prevents the spindle from being withdrawn.

A cylindrical box, G, formed upon the spindle D, is exactly fitted to the enlargement B, which it incloses when the spindle is in place within the axle, and it will be seen that the principal portion of the strain, caused by the side motion of the wheel, will be transferred directly from this box to the axle through the enlarged head B, and this will prevent breakages at that point where axles usually give out.

The spindle D may be made very small, serving as it does only as a guide, and to hold the box to its place upon the part B. The box G enters the hub but a short distance, having a sufficient space between it and the outer end of the hub to allow the mortises for the spokes to extend toward the center much farther than when the usual axle-box is employ, extending entirely through the hub, and this materially strengthens the spoke-tenons.

A slender extension, H, from the end of the box may pass to the outer end of the hub, and a nut upon its outer end holds the box in place and prevents its coming out.

By this construction I am enabled to make a strong solid connection between my wheel and axle. The point at which the strain falls most heavily is enlarged, and there is less liability to breakage, while the spindle itself is very slender, and will consequently run with less friction. As the box enters the hub but a short distance, it does not occupy the space needed for the spokes, and at the same time the wheel will be very steady in its movements.

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

The axle A, having the longitudinal hole C and enlarged solid head B, in combination with the spindle projecting into and secured so as to revolve within the axle, and having the cylindrical box G, inclosing said enlarged head B, and provided with the extension H, said box G being adapted to fit in the hub of a wheel, substantially as and for the purpose specified.

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

E. E. LINCOLN. [L. S.]

Witnesses:
FRANK A. BROOKS,
GEO. H. STRONG.