L. J. WORDEN.

Attaching Hubs to Axles.

No. 17,247. Patented May 5, 1857.

Fig. 1.

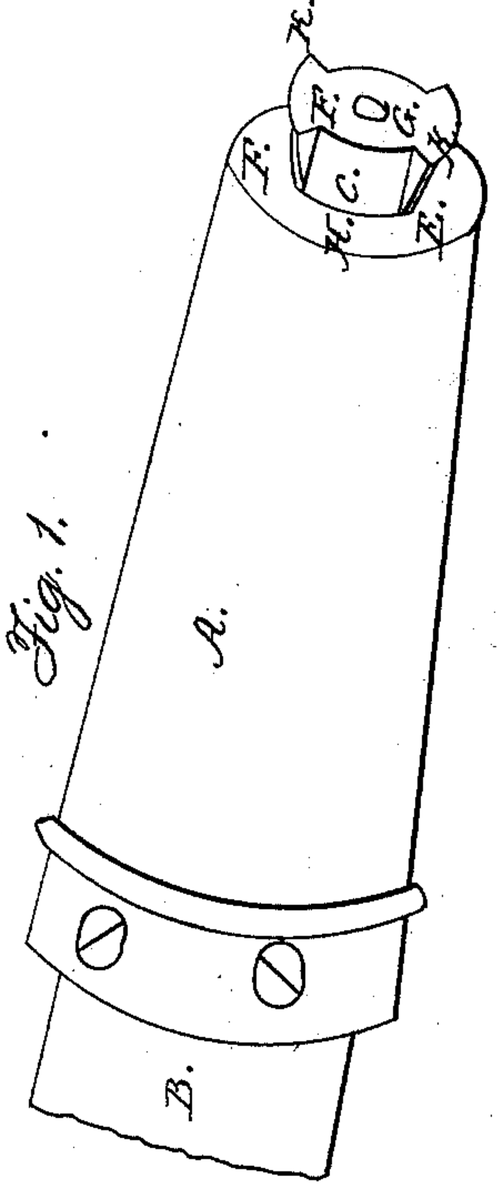


Fig. 2.

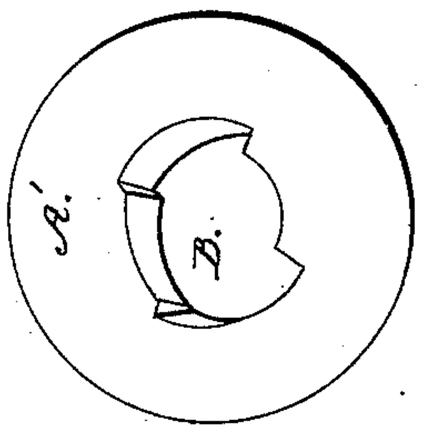


Fig. 3.

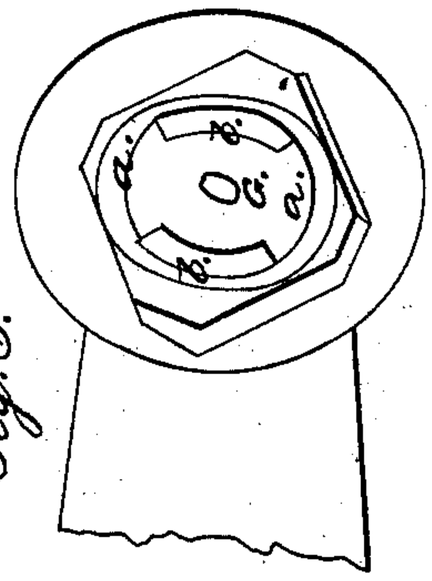


Fig. 4.

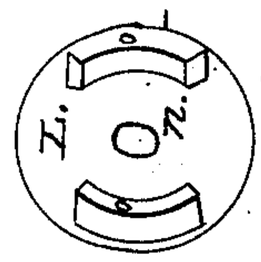


Fig. 5.

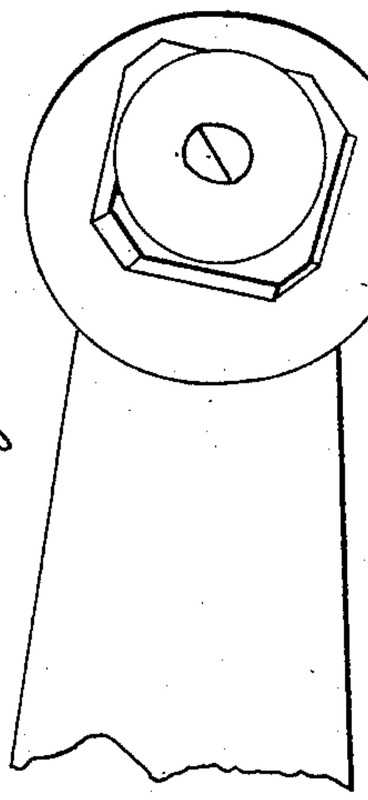
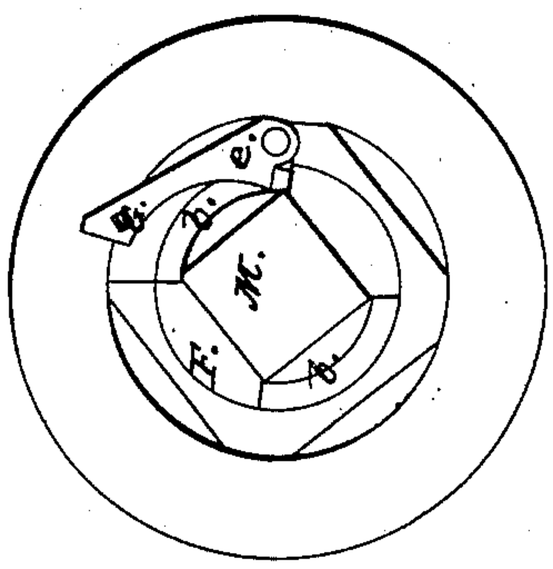


Fig. 6.



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George H Cougar

Inventor:
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UNITED STATES PATENT OFFICE.

LEONARD J. WORDEN, OF UTICA, NEW YORK.

MODE OF SECURING HUBS TO AXLES.

Specification of Letters Patent No. 17,247, dated May 5, 1857.

To all whom it may concern:

Be it known that I, LEONARD J. WORDEN, of Utica, in the county of Oneida and State of New York, have invented a new and useful Mode of Securing Carriage-Wheels upon Their Axles; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompany drawings and to the letters of reference marked thereon.

The object which I have in view in this invention is to provide a fastening at the front, or outer end of the skein in which the skein and nut may be cast of a simple form to fit each other, with as little fitting up as possible.

A, (Figure 1,) is the skein, or pipe box. It is hollow to receive the wooden axle B, and is constructed in the ordinary form, with the exception of the front end; this of the character here shown, is cast solid with the pipe box.

The neck C, is partly cylindrical, and partly conical. It is cylindrical at the side *c*, and the side opposite to this; and is conical at the sides E, E; these sides being nearly of a circular form. The front of this projecting neck presents the plane face F, and is tapped by the screwhole G.

H, is a plane square shoulder, encircling the neck, and against which the nut A′, (Fig. 2,) is to be screwed up to keep the wheel on. The face of the nut which is to set next to this shoulder is also an even plane, and the orifice B, in the center, corresponds with the front G, of the projecting neck, (Fig. 1). In order to tighten the nut by a slight turn after slipping it over the neck, the sides E, of the neck are not precisely circular, but a little eccentric, forming a cam on each side; by means of which—the interior of the nut being made of a corresponding shape—the nut is tightened by turning it about one fourth of a circle. The most prominent points of these cam surfaces on the axle, are at K, K. This compound character of the surfaces E, E, that is, being made tapering inward toward the shoulders H, and enlarging in the circle, in the direction K, as the nut is turned on, not only tightens the nut upon the cam surfaces of the neck, but also sets it up strong against the shoulder H; greatly increasing the friction and hold of the nut. These cam surfaces are of course to be made rights and lefts for the two sides of the carriage; the direction of the enlargement of the surfaces E, being reversed for the opposite ends of the axles.

The nut A′, (Fig. 2,) being screwed on as described, the outward presentation is as shown in Fig. 3. The thickness of the nut corresponding to the length of the neck of the skein, the front is an even plane, as seen in the figure. The nut and neck form a joint at *a;* and open cavities are left at the side *b*. To prevent the nut being turned back and loosened in backing the carriage—which might sometimes happen, and to finish the front in a symmetrical manner, the cap L, (Fig. 4) is screwed on in front; the screws passing through the orifice N, into the tap G, (Fig. 3) in the end of the axle.

The projections O, O, (Fig. 4) are cast upon the interior surface of the cap to fit the cavities *b*, *b*, (Fig. 3), and thus prevent the nut from turning back or unfastening. This cap being screwed on, the external appearance is then as shown in Fig. 5. Any desired external configuration may be cast upon the cap and upon the nut to ornament the article. Various other obstructions to the retrograde movement of the nut may be placed in one or both of the cavities *b*, (Fig. 3) without the use of the cap; as a wire, a screw, or a pin inserted through the projecting edge of the nut into the cavity. Fig. 6, exhibits an alternative mode of doing this without the cap, and is deemed a preferable mode of securing the nut from turning back in the case of lumber wagons, and vehicles of a coarse or common description.

M, is the head of a bolt passing through the front or the skein or pipe box, and into the wood of the axle, where it is turned into a nut, let into the axle in the manner of a common joint bolt. This is a common device for fastening the pipe box to the axle.

G, is a guard partly raised from its bed; it is hinged on a pin at the end *e*, and when let down into its place it locks the nut by closing into the breach on the side of the neck of the journal, and thus prevents the turning back of the nut. This guard is always on the upper side of the stationary journal, and consequently will always keep its place.

Having thus described my invention, its advantages over the front fastenings now in use will be apparent.

It will be seen that I dispense with the

usual cutting of a screw thread on the end of the journal, and in the nut, and provide a form in which both these parts may be cast sufficiently perfect so as to need little or no fitting up for use. Thus saving much labor and materially reducing the cost of the article. While at the same time a superior fastening is produced which is much more simple and convenient than those now in use.

What I claim as new, and desire to secure by Letters Patent is—

Making on the front end of the skein or bush (A), a neck (C) of peculiar form; that is to say, having two or more parts of its periphery of a cylindrical shape, while the remaining parts are both cam shaped and conical, when used in connection with a nut (A′) whose internal periphery corresponds with the external periphery of the neck (C), lock plate (L) or its equivalent the whole being arranged, constructed and operating in the manner and for the purposes substantially as set forth.

LEONARD J. WORDEN.

Witnesses:

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