C. R. DONNER.

Axle Box.

No. 111,822. Patented Feb. 14, 1871.

Fig. 1

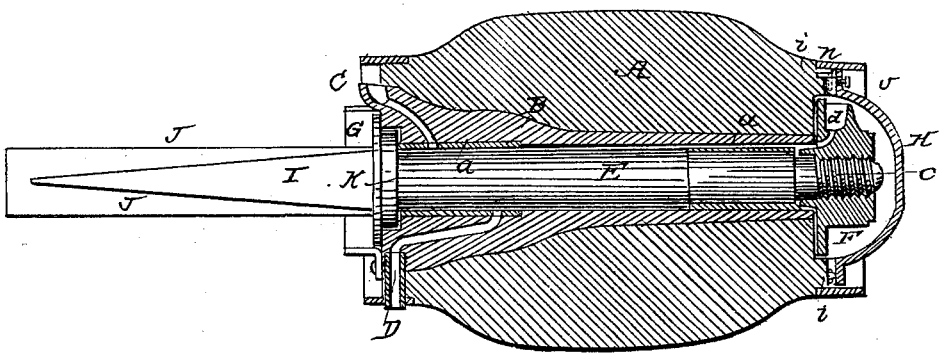


Fig. 2

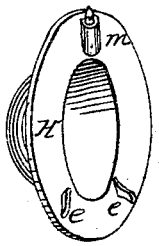


Fig. 3

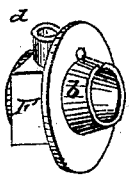
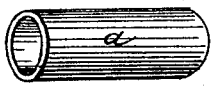


Fig. 4



Witnesses

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UNITED STATES PATENT OFFICE.

CARLOS R. DONNER, OF SONORA, CALIFORNIA.

IMPROVEMENT IN HUBS AND AXLES.

Specification forming part of Letters Patent No. **111,822**, dated February 14, 1871.

To all whom it may concern:

Be it known that I, CARLOS R. DONNER, of Sonora, county of Tuolumne, State of California, have invented an Improved Wagon-Axle; and I do hereby declare the following description and accompanying drawing are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvements without further invention or experiment.

The object of my invention is to provide an improvement in the axles and axle-boxes employed on wagons and carriages; and it consists, first, in an improved manner of uniting the steel spindle with the iron portion of the axle, and also in the formation of a sort of hub on the holding-nut, which hub can be shortened, so as to bring the nut closer, and thus compensate for any end wear of the box.

My invention further consists in the use of secondary steel boxes within the main axle-box, and a series of oil-cups is arranged on the hub and an outer nut, which open at various points within the box.

A cap and protecting-ring are secured at the outer and inner ends of the hub, respectively, to protect from dirt.

Referring to the accompanying drawing for a more complete explanation of my invention, Figure 1 is a longitudinal section of my axle-box, showing the axle. Fig. 2 is a perspective view of the cap.

A is a hub, containing an axle-box, B, within which the axle turns. This box is provided at its inner end with one oil-cup or opening, C, in small wagons, and with two, as at D, if the wagons be large, and passages from these cups open at various points within the box, so as to thoroughly lubricate the spindle E. Within the box B, near each end, are two steel supplementary boxes, *a a*, which the spindle E bears in as it turns, and these are also pierced with holes for lubricating. The nut F, which serves to retain the wheel in place on the spindle, has a sort of hub or spindle, *b*, which extends inward, and rests against the shoulder at the end of the spindle, as shown. The threads of the screw *c* are only cut in the outer part of the nut, the shoulder not being provided with any threads, so that when the parts wear and allow too much end motion the end of the shoulder *b* can be filed off, so that the nut will turn up closer, and thus compensate for the wear. An oil cup or hole, *d*, may also be provided on the nut with a passage, as shown.

The different oilers may be closed by corks or other suitable devices.

In order to protect the moving parts from dust or dirt, a band or cover, G, is fastened to the inner end of the wheel, and extends over the collar. At the outer end is a cap, H, which fits over the nut F, and is secured by means of two lugs, *e e*, at the lower side, which enter staples or loops *i*. At the upper side is a catch, *m*, which is operated by a spring and locks into a slot at *n*, after which it may be secured by a set-screw, *o*.

The spindle E may be made of steel, and is drawn out to a wedge shape, as shown at I, and has a double collar, as at K.

The iron portion of the axle J is made to clasp this wedge, and is welded so as to extend under the collar, thus making a strong joint, and it can be rapidly done with less labor to the blacksmith than in the ordinary method of welding.

By this construction of axle and box I am enabled to build wheels which will last a long time without running loose, and by means of the peculiar nut the end motion can be taken up when it becomes too great.

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

The box B, with its interior constructed as described, and having the supplemental steel boxes *a a*, in combination with the oil-cups C and D, the holding-nut F, with its projecting hub or shoulder *b*, and the cap H, with its lugs *e e*, all constructed and arranged substantially as and for the purpose set forth.

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

CARLOS R. DONNER. [L. S.]

Witnesses:

I. J. WAGNER,

CHARLES RICHBER.