J. LANE.

Vehicle Wheel-Hub.

No. 204,903. Patented June 18, 1878.

Fig. 1.

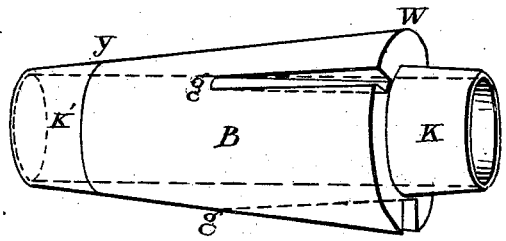


Fig. 2.

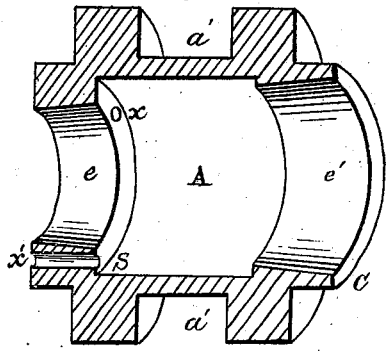
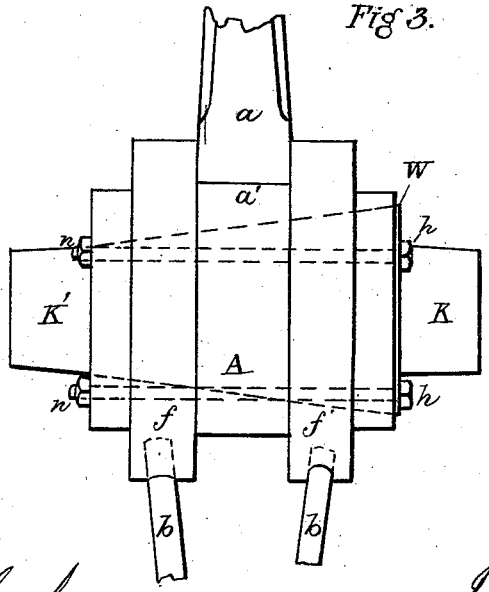


Fig 3.



Witnesses.

Inventor.

John Lane

UNITED STATES PATENT OFFICE.

JOHN LANE, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN VEHICLE-WHEEL HUBS.

Specification forming part of Letters Patent No. **204,903**, dated June 18, 1878; application filed January 11, 1878.

To all whom it may concern:

Be it known that I, JOHN LANE, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Vehicle-Wheel Hubs, and axle-boxes connected therewith, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 gives a view of my improved axle-box B, having extensions K K′ and grooves *g g*. Fig. 2 gives a sectional view of the hub A, on a line through the center of the hub, from end to end, showing the inside construction of the same. Fig. 3 gives a view of the hub A, with my improved axle-box B attached, showing how the axle-box is secured in its position with the end extensions K K′ projecting beyond the ends of the hub.

My invention relates to that class of cheap vehicle-wheels having a cast-iron hub and a removable axle-box, known as "agricultural wheels," and used on sulky-plows, and other implements in which sand and grit are liable to get into the box on the axle, and between the axle-box and hub, cutting the axle-box out quickly, and requiring a new axle-box to replace the worn-out one.

My invention consists in a new and improved axle-box of peculiar construction, and a wheel-hub of such construction as to have the axle-box united and combined therewith, as hereinafter fully shown and explained.

Referring to the drawings, B is the axle-box, having ends K K′ extending out beyond the ends of the hub, and enlarged at W, forming a shoulder, against which the heads of bolts *h h* rest. It is provided with grooves *g g*, extending from the shoulder at W some distance toward the other end of the axle-box, as shown in the drawing. The axle-box B is considerably larger at the shoulder W than at Y, corresponding in diameter to the different diameters of the bore of the hub at the two ends, as shown. The grooves *g g* receive the body of the bolts *h h*, by which the axle-box B is secured to the hub A.

The inside of the axle-box B may be of any ordinary construction for fitting and revolving on either tapering or plain bar axles, and may be enlarged in the center or cut away between the bearing-seats at W and Y, either on the outside or inside.

A is the hub, made of cast-iron, of any ordinary construction in its outside dimensions, and may be provided with either wooden or iron spokes, as desired. Fig. 3 shows how wooden spokes *a* are set and placed in the mortises *a′*, between the supports *f f′*, and also how iron spokes *b b* are set and placed zigzag by setting each alternate spoke at opposite ends of the hub, bracing each other from the supports *f f′*.

The hub A has its bore larger at one end than at the other, tapering from end to end, and of such construction as to provide seats *e e′* therein, fitting the axle-box B. I prefer to enlarge the bore in the center of the hub between the seats *e e′*, forming a recess, *s*, making the hub lighter, and to insure the seating of the axle-box at both ends of the hub. *x x′* are holes in the rim of the hub, through which the bolts *h h* extend when securing the axle-box to the hub.

The axle-box B being placed in position on the hub A, the bolts *h h* are inserted in the grooves *g g*, and extend through the holes *x x′*. The heads of the bolts rest against the shoulder W, and nuts *n n* are seated outside against the end of the hub, firmly securing the axle-box B on the hub A. Should the parts wear loose, they can be again tightened up by screwing down the nuts *n n* on the bolts *h h*, drawing the axle-box farther into the hub. Should the axle-box wear out on the axle, by simply removing the bolts *h h* the axle-box can be removed and replaced by a new one.

The extensions K K′ may be covered with broad sand-caps on the collars, and washers may be placed on the axle to keep the sand and grit from getting between the axle and axle-box without interfering with the free revolution of the box on the axle.

I am aware that it is not new to use a conical or tapering axle-box in a hub; also, that bolts have been used to secure a box to a hub. Such I do not claim.

What I do claim as my invention is—

1. The hub A, having a central conical perforation and seats, *e e′*, and having combined therewith an axle-box, B, having grooves *g g*

and shoulder W between the extensions K K′, and united to the hub with bolts *h h*, as shown and described.

2. The hub A, having a central conical perforation and seats, *e e′*, as shown, and having the recess *s* formed between the seats *e e′*, and having the holes *x x′* in the rim of the hub, as shown, all arranged as and for the purpose set forth.

3. The axle-box B, with extensions K K′, open grooves *g g* on the outside, and shoulder W, the extension K projecting outward beyond the shoulder W, as shown, all arranged as and for the purpose set forth.

JOHN LANE.

Witnesses:
G. H. HULL,
HARRY SCHILLER.