

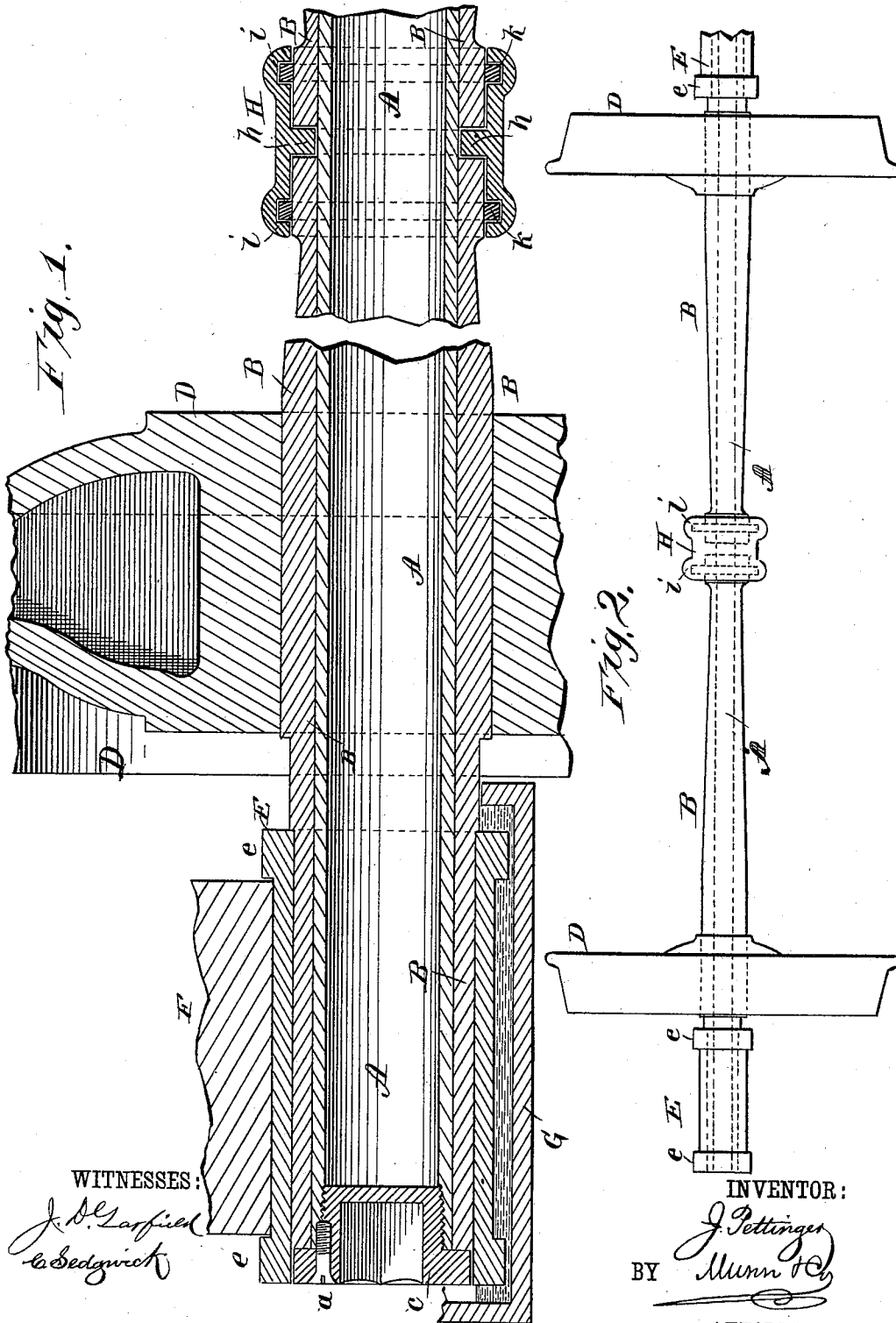
(No Model.)

J. PETTINGER.

CAR AXLE.

No. 366,872.

Patented July 19, 1887.



UNITED STATES PATENT OFFICE.

JOHN PETTINGER, OF SANTA BARBARA, CALIFORNIA.

CAR-AXLE.

SPECIFICATION forming part of Letters Patent No. 366,872, dated July 19, 1887.

Application filed November 16, 1886. Serial No. 219,020. (No model.)

To all whom it may concern:

Be it known that I, JOHN PETTINGER, of Santa Barbara, in the county of Santa Barbara and State of California, have invented a new and Improved Car-Axle, of which the following is a full, clear, and exact description.

This invention relates to that class of axles which permits of the independent turning of the wheels, and the object is to provide an axle which will combine lightness with durability and insure more perfect action of the same.

The invention consists in the construction and combination of parts, as hereinafter more fully set forth.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is a longitudinal sectional view of my improved axle, the view being from journal to center of axle with intermediate portion broken out. Fig. 2 is a view of the axle complete from wheel to wheel.

In the drawings, A represents a tubular spindle which forms a part of the axle. On this spindle A is fitted to turn freely, but not loosely, the sleeves B.

The ends of the spindle A are internally threaded to receive an externally-threaded nut, C, which holds the sleeves B to place on the spindle A. The nut C is locked on the spindle A by the set-screw *a*.

The wheels D are pressed on the sleeves B, and the sleeves taper from the wheels to the center of the axle.

The outer ends of the sleeves B are reduced, as shown, and a thimble, E, is shrunk thereon, said thimble being the journal of the axle. The thimble E is provided with annular flanges *e*, and the journal-bearing F, (partly shown,) abutting against the flanges *e*, prevents side play of the axle.

The journal-box is provided with an oil-chamber, G, at its bottom, and as the journal-thimble turns it passes through the oil in said chamber, thus giving a constant supply of oil to the journal and bearing for lubricating the same.

The cap H on the center of axle has an in-

ternal annular flange, *h*, which projects between the inner ends of the sleeves B. The cap H is also provided with annular grooves or recesses *i* for the reception of washers *k*, which may be made of rubber or any other suitable material. These washers serve to exclude the dust from the center of axle, where the sleeves B come against the flange *h* of the cap H. This cap H is fitted snugly on the sleeves B to cause it to turn with the axle, but in going around a curve it permits of the sleeve carrying the wheel on the outside of the curve turning faster than the sleeve carrying the wheel on the inside of the curve.

To assemble the parts of the axle, the cap H is first passed to the center of spindle A, then the sleeves B, having the wheels pressed and the thimbles E shrunk thereon, are forced on the spindle A, the inner ends of said sleeves passing into the cap H and against the flange *h* thereof. The nuts C and set-screws *a* are then driven home, completing an axle which is compact, light, and durable.

In use the wear is mainly on the journal-thimble E, and when this part becomes worn it can be replaced at a slight expense. The cap H may also be cheaply replaced if it becomes worn, although the wear on said cap is not very heavy.

The position of the oil-chamber insures a positive and constant lubrication to the journal-bearing.

The strain is distributed over the entire axle, and in taking a curve the wheel on the outside of the curve rides freely and easily, thus reducing the wear on the rails, wheels, and axle, also reducing the power necessary to draw the car.

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

1. The combination, with a tubular spindle, of sleeves turning freely thereon and carrying the wheels and journals, and a dust-cap having an inner flange projecting between the abutting ends of the sleeves, substantially as shown and described.

2. The combination, with the spindle A, having internally-threaded ends, of sleeves B, adapted to turn thereon, the journals E,

shrunk on the sleeves B, and the externally-threaded nut C, adapted to screw into the ends of spindle A and hold the sleeves B on said spindle, substantially as shown and described.

5 3. The combination, with the spindle A, of the sleeves B, the journal E, the cap H, having flange *h*, and annular grooves *i*, substantially as shown and described.

4. The combination, with the spindle A, of the sleeves B, the journals E, and the oil-chamber G, substantially as shown and described. 10

JOHN PETTINGER.

Witnesses:

FREDERICK HORMAN,
C. O. HASTINGS.