(No Model.)

J. R. WILLIAMS.

CAR WHEEL LATHE.

No. 334,832. Patented Jan. 26, 1886.

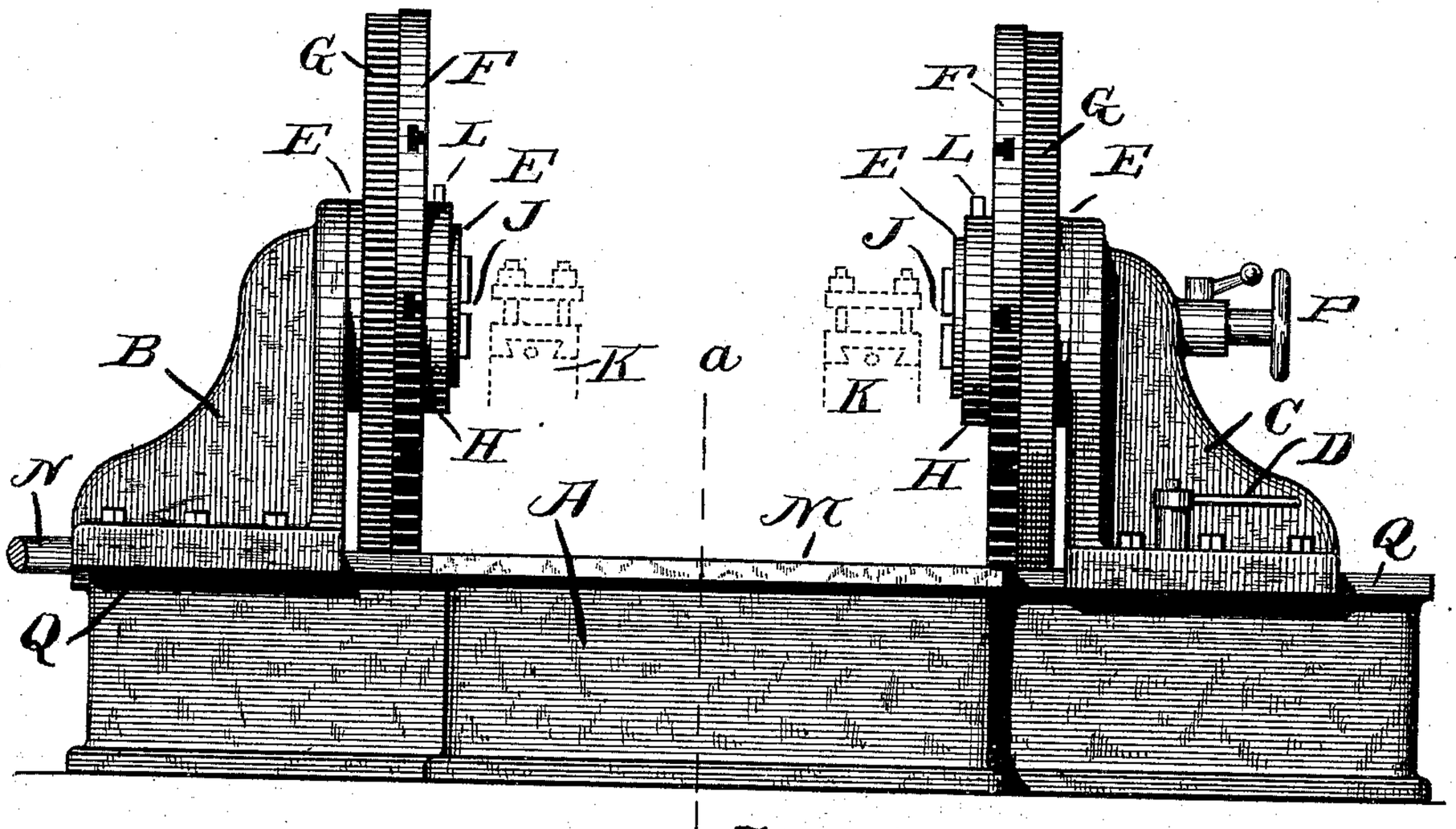

Fig. 1

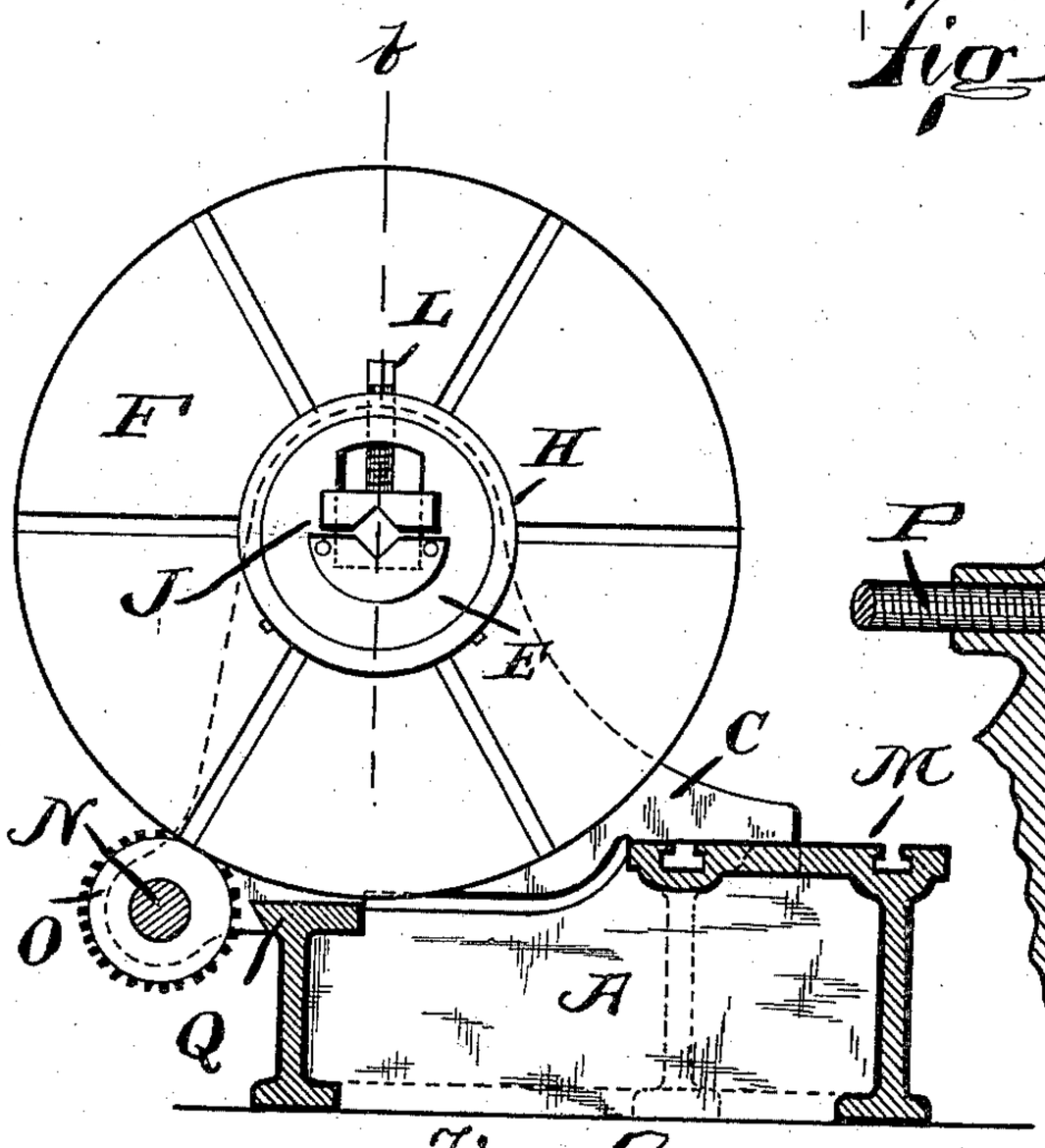

Fig. 2

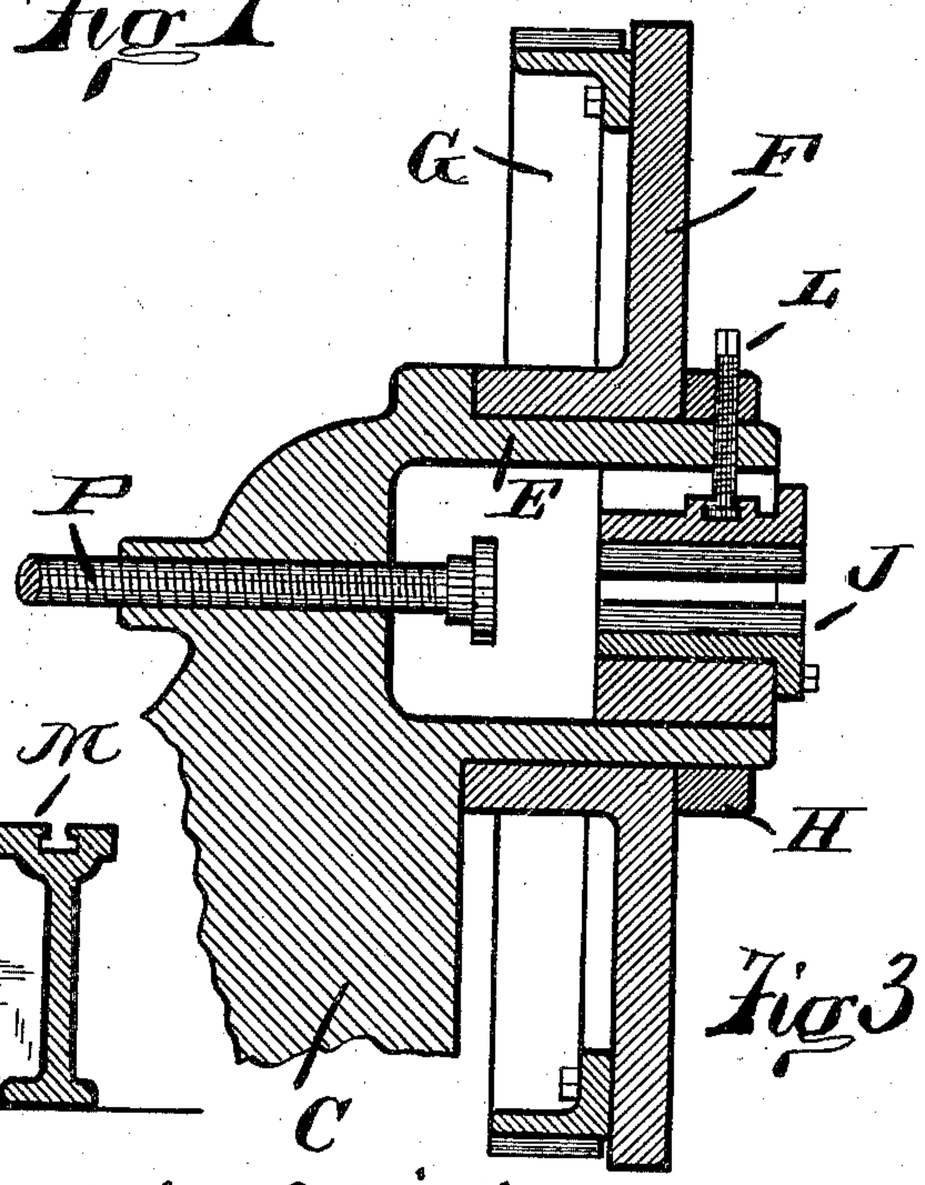

Fig. 3

Witnesses:
C. W. Mathes.
W. A. Seward

John R. Williams Inventor
by James W. See
Attorney

UNITED STATES PATENT OFFICE.

JOHN RICHARDSON WILLIAMS, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE NILES TOOL WORKS, OF HAMILTON, OHIO.

CAR-WHEEL LATHE.

SPECIFICATION forming part of Letters Patent No. 334,832, dated January 26, 1886.

Application filed July 9, 1884. Serial No. 137,175. (No model.)

To all whom it may concern:

Be it known that I, JOHN R. WILLIAMS, of Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Lathes, of which the following is a specification.

This invention pertains to metal-turning lathes; and it relates particularly to lathes designed for turning articles of large diameter fixed upon shafts or axles of comparatively small diameter—such, for instance, as car-wheels fixed upon their axles.

In turning car-wheels fixed upon their axles in ordinary lathes the delicate lathe-centers fail to afford sufficient stability to the work, and the grip of the lathe-dog upon the axle is not sufficient for driving the heavy cuts necessary in economical work. If the axles be carried upon their own journals in any ordinary manner while being turned, the objection to the light grip of the lathe-dog still holds good.

In my improved lathe the axle is carried in bearings, and the work is to be driven by drivers engaging the large work, as the car-wheel secured to the axle.

My improvement will be readily understood from the following description, taken in connection with the accompanying drawings, in which—

Figure 1 is an elevation of a lathe illustrative of my invention; Fig. 2, a vertical section of the same upon the line *a*, and Fig. 3 a diametrical section of the face-plate on the line *b*.

In the drawings, A represents a lathe-bed; B, a head-stock secured to one end thereof, either permanently or adjustably, in order to suit varying lengths of work; C, a similar head-stock fitted to slide upon the other end of the bed; D, a lever for shifting the head-stock C along the bed by means of rack-and-pinion mechanism, as is commonly employed in connection with shifting head-stocks for driving-wheel lathes; E, rigid journal-bosses projecting inwardly from the face of each head-stock; F, face-plates fitted to revolve upon said journal-bosses; G, gears secured to the rear of the face-plates; H, collars upon the journal-bosses E, serving to keep the face-plates in place upon them; J, journal-boxes secured concentrically within the journal-bosses E and adapted to furnish journal-bearings for car-axles or the like; K, the position of the tool-rests; L, screws for opening and closing the journal-boxes J; M, a central portion of the lathe-bed, raised somewhat in order to shorten the tool-rests, as is common practice in the construction of driving-wheel lathes; N, the usual driving-shaft through which motion is communicated to the two face-plates; O, a driving-pinion on the shaft N, engaging the gear of one of the face-plates, there being a pinion for each face-plate; P, a tail-screw in one of the head-stocks, to serve as an end bearing for the axle, and Q the comparatively narrow ends of the bed, on which the head-stocks are fitted. Motion is to be given to the driving-shaft N by any of the systems of cones and gears usually employed in connection with driving-wheel lathes. The tool-rests are also of the ordinary construction, and rests for carrying abrading-wheels may be fitted to the lathe, either to take the place of the cutting-tool rests or to act in conjunction with them. The journal-boxes J may be of any character adapted to properly receive the axle or shaft on which work to be turned is carried, and they should be provided with means for readily opening and closing them, so as to permit a ready insertion and removal of work. In the journal-box illustrated the upper portion is raised and lowered by means of the screw L.

In the operation of this lathe the journal-boxes J are opened, the head-stock C moved to the right, the car-axle, if such it be, with its wheels attached, placed in axial position, with one journal of the car-axle resting in the journal-box of the left-hand head-stock, the right-hand head-stock moved to the left until the right-hand journal of the axle is inclosed by the journal-box of that head-stock, the journal-boxes closed sufficiently to secure steadiness, the tail-screw set up to secure end-steadiness of the axle, drivers of the ordinary kind fitted in the face-plate brought into engagement with the ribs or other projections on the car-wheel, and the machine set in motion. Equalizing-drivers may be employed, if desired. In the case of car-wheels, the usual shoulders at the journals of the axles can be utilized as end

bearings in one direction, while the tail-screw serves as the end bearing in the other direction; or, if desired, a tail-screw may be fitted at each head-stock. The double-headed structure illustrated is calculated for simultaneous turning upon both car-wheels on the axle, the driving-power being applied to each of the car-wheels. For classes of work analogous to a single car-wheel upon an axle, only one of the head-stocks need be supplied with driving-power, and if the non-driving head-stock be furnished with an ordinary lathe-center it will be sufficient. For car-axles of that class in which the journals lie inside the wheels, the journal-bearings J are not adapted. In such case the work is to be carried in ordinary pedestal-boxes secured to the lathe-bed between the face-plates, the drivers of the face-plates engaging the ribs of the car-wheel or other projection or engaging features in the same manner as if the axles were supported in the journal-bearings J.

I claim as my invention—

1. In a lathe, a head-stock provided with a journal-boss, a driving-plate fitted to revolve upon said journal-boss, and journal-box fitted to said journal-boss and adapted to receive and furnish a bearing for the axle on which work is being turned or ground, combined substantially as set forth.

2. In a lathe, a lathe-bed, a head-stock provided with a journal-boss and secured to the lathe-bed, a second similarly-provided head-stock secured to the lathe-bed and fitted to be adjusted longitudinally thereon, driving-plates fitted to revolve upon the journal-bosses of the head-stocks, and journal-boxes secured to said journal-bosses and adapted to receive and furnish bearings for the opposite ends of an axle on which large work is being turned or ground, combined substantially as set forth.

3. In a lathe, a lathe-bed, a head-stock, a second head-stock fitted to slide upon said bed, a driving-plate journaled to one of said head-stocks and provided with a central cavity adapted to receive the projecting end of a shaft or axle, and an axle-support disposed within said cavity, all combined substantially as set forth, for the purpose of enabling the driving-plate to be adjusted near to a wheel fixed near one end of an axle.

4. In a lathe, the combination of a head-stock, a driving-plate journaled to the head-stock and provided with a central cavity adapted to receive the projecting end of the axle or shaft, an axle-support disposed within said cavity, and an axially-arranged screw, as P, substantially as set forth.

5. In a lathe, the combination of a hollow spindle provided with a driving or face plate, a follower, and a device for centering the axle of a car-wheel in the lathe.

JOHN RICHARDSON WILLIAMS.

Witnesses:

W. P. DOUGLAS,

S. A. WOOD.