No. 774,289. PATENTED NOV. 8, 1904.

M. E. THOMAS.

VEHICLE AXLE.

APPLICATION FILED AUG. 16, 1904.

NO MODEL.

Fig. 1.

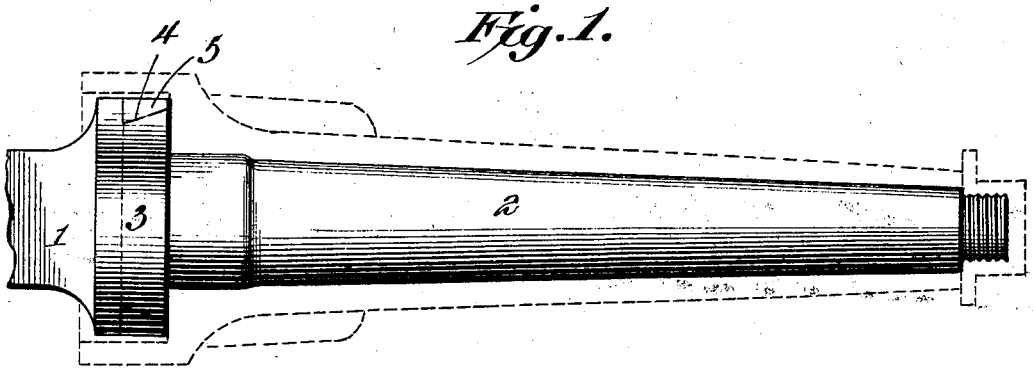


Fig. 2.

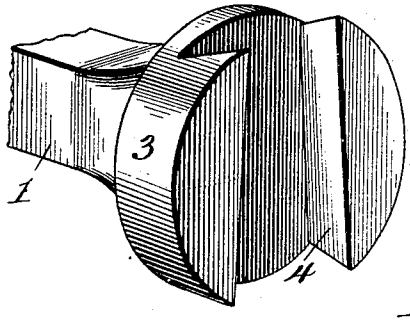


Fig. 3.

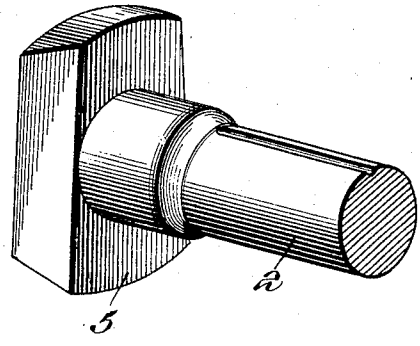
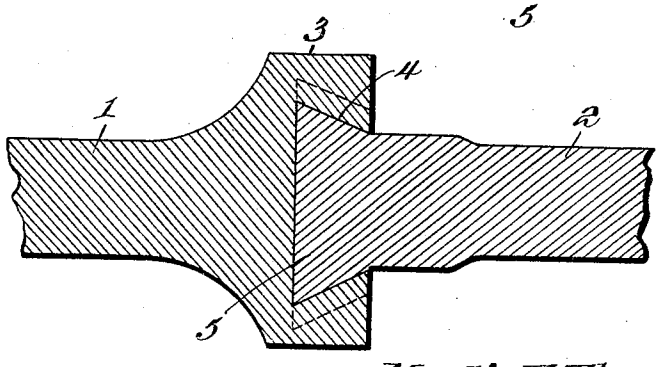


Fig. 4.



Witnesses
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No. 774,289. Patented November 8, 1904.

UNITED STATES PATENT OFFICE.

MARTIN E. THOMAS, OF ELDON, IOWA, ASSIGNOR OF ONE-HALF TO H. P. CARTER, OF MEMPHIS, TENNESSEE.

VEHICLE-AXLE.

SPECIFICATION forming part of Letters Patent No. 774,289, dated November 8, 1904.

Application filed August 16, 1904. Serial No. 220,940. (No model.)

To all whom it may concern:

Be it known that I, MARTIN E. THOMAS, a citizen of the United States, residing at Eldon, in the county of Wapello and State of Iowa, have invented a new and useful Vehicle-Axle, of which the following is a specification.

The invention relates to improvements in vehicle-axles.

The object of the present invention is to improve the construction of axles for carriages, wagons, and analogous vehicles and to provide a simple, inexpensive, and efficient construction of great strength and durability adapted when the spindle becomes worn to enable the same to be readily removed and renewed without the assistance of a skilled workman and without removing the axle from the vehicle.

A further object of the invention is to provide an axle of this character in which the spindle will be positively retained in its connection with the body portion of the axle when the vehicle-wheel is in place and which when the vehicle is removed may be readily detached without removing any fastening devices.

With these and other objects in view the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion, size, and minor details of construction within the scope of the claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a side elevation of one end of an axle provided with a detachable spindle constructed in accordance with this invention. Fig. 2 is a detail perspective view of one end of the body portion, showing the dovetailed recess of the collar. Fig. 3 is a detail perspective view of the inner end of the spindle, illustrating the construction of the dovetailed section or member. Fig. 4 is a longitudinal sectional view illustrating the manner of interlocking the spindle and the body portion of the axle.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates the body portion of a vehicle-axle provided with a detachable spindle 2, adapted when it becomes worn to be removed and replaced by a new spindle. The body portion of the axle is provided at the inner end of the spindle 2 with an annular shoulder or collar 3 of the usual configuration, and this collar has a vertically-disposed dovetailed recess 4, which tapers toward the top and which is adapted to receive a section or member 5. The section or member 5, which is formed integral with the spindle, fits within and entirely fills the recess of the collar to complete the latter. The dovetailed recess 4 tapers toward the top, and it also tapers outwardly, the side walls of the recess being converged outwardly or set at an angle, as shown in Fig. 4. The section or member 5 tapers upwardly, and its side faces or edges are beveled and arranged at an angle to fit those of the recess 4. The upper and lower edges of the section or member are curved and are arranged flush with and form continuations of the outer face of the collar.

The weight supported by the axle will hold the same firmly in engagement with the spindle when the latter is supported by a vehicle-wheel, and when the vehicle-wheel is in position the collar is received within the axle-box in the ordinary manner, as illustrated in Fig. 1 of the drawings, whereby the wheel itself will hold the spindle in its interlocked relation with the axle and prevent the parts from being separated. When the vehicle-wheel is removed, the spindle may be readily detached from the body portion of the axle, and a new spindle may be substituted for a worn one by an unskilled person and without detaching the body portion of the axle from the vehicle.

Although a conventional axle-box is illustrated in dotted lines in Fig. 1 of the drawings, yet it will be readily understood that the axle is adapted to receive any desired form of

vehicle-wheel, and the shape of the collar may be changed to conform to the configuration of the axle-box. The upper face of the spindle is grooved to receive a lubricant, and its outer end is threaded for the reception of an axle-nut.

It will be seen that the spindle is detachably interlocked with the body portion of the axle at the collar, which is located beyond the point of attachment of the body portion of the axle to the vehicle, and that the spindle may be readily removed without detaching the axle from the vehicle. Also it will be clear that the wheel itself will maintain the spindle and the body portion of the axle in their interlocked relation and that after the wheel is removed the spindle may be detached from the body portion of the axle without removing the bolts or other fastening devices.

Instead of arranging the dovetailed recess vertically it may be disposed in any other position and the recess and the section may be reversed, as either part may be provided with a dovetailed recess or the dovetailed section.

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

1. An axle provided with a removable spindle detachably connected with the body portion of the axle beyond the point of attachment of the same to a vehicle, and retained in its connected relation with the body portion of the axle by a wheel, substantially as described.

2. An axle provided with a removable spindle detachably interlocked with the body portion of the axle and retained in such interlocked relation by a wheel, substantially as described.

3. An axle having a detachable spindle, one of the parts being provided with a recess, and the other having a section or member fitting in the recess, said recess and section or member being located at the collar of the axle, whereby the parts will be retained in their interlocked relation by a wheel, when the same is placed on the spindle, substantially as described.

4. A device of the class described, comprising an axle-body having a collar provided with a dovetailed recess, and a detachable spindle having a dovetailed section or member fitting in the recess and completing the collar, said collar being arranged to be received within a wheel, whereby the parts will be retained in their interlocked relation, substantially as described.

5. A device of the class described, comprising an axle-body provided with a collar having a tapering dovetailed recess, and a spindle provided with a tapering dovetailed section or member fitting in the recess and completing the collar, the latter being arranged to be received within the wheel, whereby the parts will be retained in their interlocked relation, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

MARTIN E. THOMAS.

Witnesses:
R. E. BEARD,
JESSE J. KIRBY.