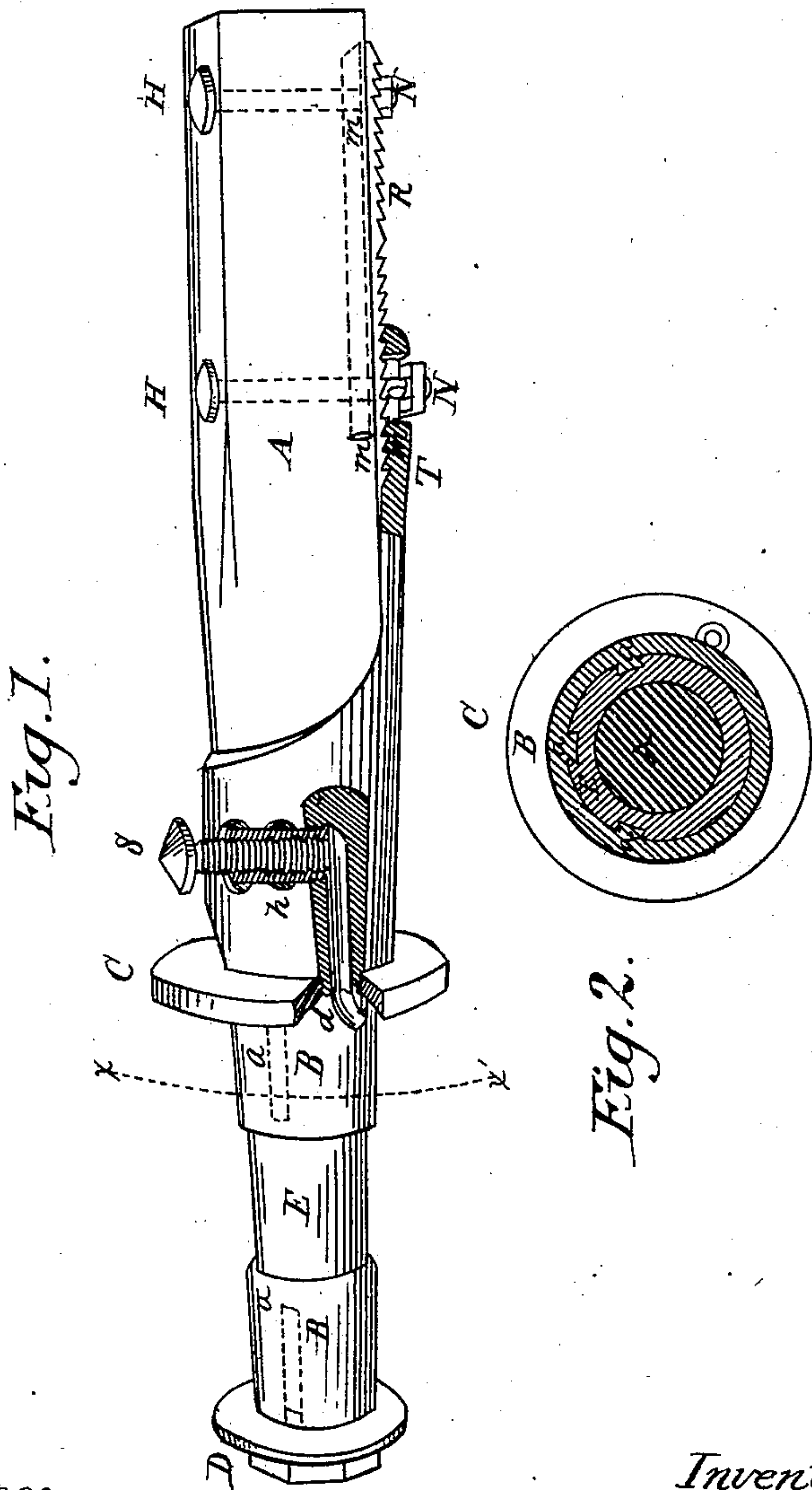


J. A. WILLIAMS.
AXLE FOR VEHICLE.

No. 75,099.

Patented Mar. 3, 1868.



Witnesses:
Theo Fische
J. A. Fraser

Inventor:
J. A. Williams
Per Munnell
Attys.

United States Patent Office.

J. A. WILLIAMS, OF ELIZABETH, ILLINOIS.

Letters Patent No. 75,099, dated March 3, 1868.

IMPROVEMENT IN AXLES FOR VEHICLES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, J. A. WILLIAMS, of Elizabeth, in the county of Jo Daviess, and State of Illinois, have invented a new and useful Improvement in Axles for Vehicles; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

Figure 1 is a perspective elevation of my improved axle, with removed sections of parts of the same.

Figure 2 is a cross-section of the same, through the line $x x'$.

Similar letters of reference indicate corresponding parts.

This invention relates to improvements in axles, and consists in the several devices perfecting the same, as will be hereinafter more fully explained.

A is the axle-tree, E the spindle fitting thereon, and having the usual nut and washer, D, and shoulder-flange C'. The spindle is formed with an extension, T, having serratures which catch into corresponding serratures, m' , on a ratchet-rack, R, set into the under side of the axle-tree, as shown in fig. 1. This rack is held firmly by through-bolts H' H and nuts N' N. This device serves to hold the spindle E on the axle-tree, for the bolt H' passes through a slot in the projection T, as shown, and its nut N clamps the serratures of the two parts closely, as shown. The rack R has its serratures arranged to hold in opposite directions, as shown in fig. 1, whereby it can be reversed when one set of serratures become worn.

The axle-bearings as heretofore made require that the wheel be removed to lubricate the bearing-surfaces. This disadvantage is obviated by my improved oil-cup, h , as shown in section in fig. 1. It consists of a hollow tube, furnished with an upright part, which has a hollow thread cut in it down to the bore of the tube, and the whole screwed into the shoulder-flange C', just at its juncture with the thimble-skein B, which latter is channelled out at d , as shown, to facilitate the ingress of the oil, and its introduction upon and around the bearing-surfaces. A screw, S, closes the cup, the oil in the latter being forced out upon the thimble-skein when the said screw is turned. By this device the wheel can be lubricated without its removal from the axle. The bearing-thimbles B are of brass or composition, and sustain the friction of the box of the hub.

I am aware that a patent has been granted for these brass thimbles, cast on to the spindle, for the purpose of sustaining the friction, and therefore do not claim them, but only an improvement on the same, which will now be described.

The thimbles B, encircling the spindle E, as shown at fig. 2, are held firmly attached in their place by dove-tailed tenons, which are formed when the thimble is cast in slots, made on the spindle E for that purpose. These slots are made longitudinally in the upper or lateral surfaces only of the spindle, thus leaving the under surface of the same unbroken, and therefore of undiminished strength.

In the patent before alluded to, which was granted for the thimbles cast on to the spindle, they were held on by means of circular grooves running around the latter, which greatly weakened the same and occasioned its early breaking. This is always found to be the place where the spindle gives way. This defect in this invention has rendered it almost worthless. My improvement in attaching the thimbles obviates this disadvantage, and permits the thimble to be secured to the spindle without deteriorating the durable quality of the latter. These improvements are all of small cost, and relatively conducive to the perfect and durable operation of an axle-tree for vehicles.

I claim as new, and desire to secure by Letters Patent—

1. The serrated extension T of the spindle E of an axle, in combination with a serrated rack, R, for holding the said spindle firmly in its place, substantially as and for the purpose shown and described.
2. The longitudinal slots, substantially as described and for the purpose specified.
3. The reversible character of the rack R, substantially as described and for the purpose specified.

Witnesses:

J. P. TARPLY,
H. BARRETT.

J. A. WILLIAMS.