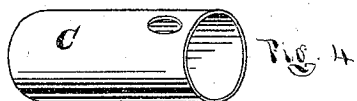
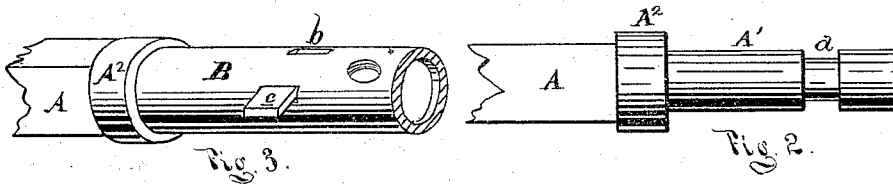
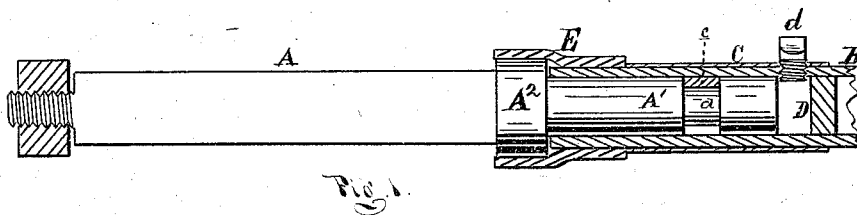


W. HUNTINGTON.
Axles for Vehicles.

No. 150,579.

Patented May 5, 1874.



ATTEST.

H. F. Eberts,
Chas. E. Huestis

INVENTOR.

Wm. Huntington,
per Attorney,
Wm. S. Sprague

UNITED STATES PATENT OFFICE.

WILLIAM HUNTINGTON, OF HOWELL, MICHIGAN.

IMPROVEMENT IN AXLES FOR VEHICLES.

Specification forming part of Letters Patent No. 150,579, dated May 5, 1874; application filed November 4, 1873.

To all whom it may concern:

Be it known that I, WILLIAM HUNTINGTON, of Howell, in the county of Livingston and State of Michigan, have invented an Improvement in Axles for Wheel-Vehicles, of which the following is a specification:

The nature of this invention relates to an improvement in that class of axles or arms for wheel-vehicles wherein the arm is firmly secured in the hub of the wheel, and its projecting end rotates in a tubular axle; and it consists, first, in the manner of securing the arm in the axle; secondly, in the arrangement of the oil-chamber in the axle; and, thirdly, in the general arrangement of the various parts, as more fully hereinafter set forth.

Figure 1 is a longitudinal section through an arm and one end of my improved axle. Fig. 2 is an elevation of the journal end of the arm. Fig. 3 is a perspective view of the same with the tubular axle sleeved on it, and keyed. Fig. 4 is a perspective view of the sleeve.

In the drawing, A represents a square steel arm, which is firmly secured in the hub, having an extension, A¹, at the inner end, turned down to form a journal, in which is turned an annular groove, *a*. B is a metal tube, which forms the axle, through which, at each end, a pair of slots, *b*, are cut in the line of a chord of the arc of a section of the tube, through which to pass a brass key, *c*, tangent to the bottom of the groove *a* of the arm, which it so secures in the tube that it cannot be withdrawn, while it is free to rotate therein. In lieu of the key, a set-screw may be used, but the former is preferable. To secure the key

in the slots a light sheet-metal tube, C, is sleeved over it, which, in turn, is secured by a set-screw, *d*, tapped through it into the arm, beyond the inner end of the arm, which screw forms a plug for the oil-chamber. D is a cork, driven into the axle-tube an inch or two beyond the inner end of the arm, the space between which and said cork forms a receptacle for oil, which only finds exit by flowing through the journal of the arm, thereby affording constant lubrication to it. To prevent a too rapid outflow of oil, and at the same time to prevent the entrance of dust, a collar, A², about three-quarters of an inch in width, is turned down at the shoulder of the arm to the diameter of the axle-tube, over which and said collar is fitted a sole-leather sleeve or sand-guard, E, which effectually accomplishes these ends.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with the tubular axle B, provided with the slots *b* of the arm A¹, provided with the groove *a*, and secured therein by the key *c*, substantially as described and shown.

2. In combination with the axle B, the sleeve C, secured to the axle by the screw *d*, and the keys *c*, the arm A¹, having oil-reservoir *a*, all constructed, arranged, and operating substantially as described.

WILLIAM HUNTINGTON.

Witnesses:

E. B. GREGORY,
H. T. BROWNING.