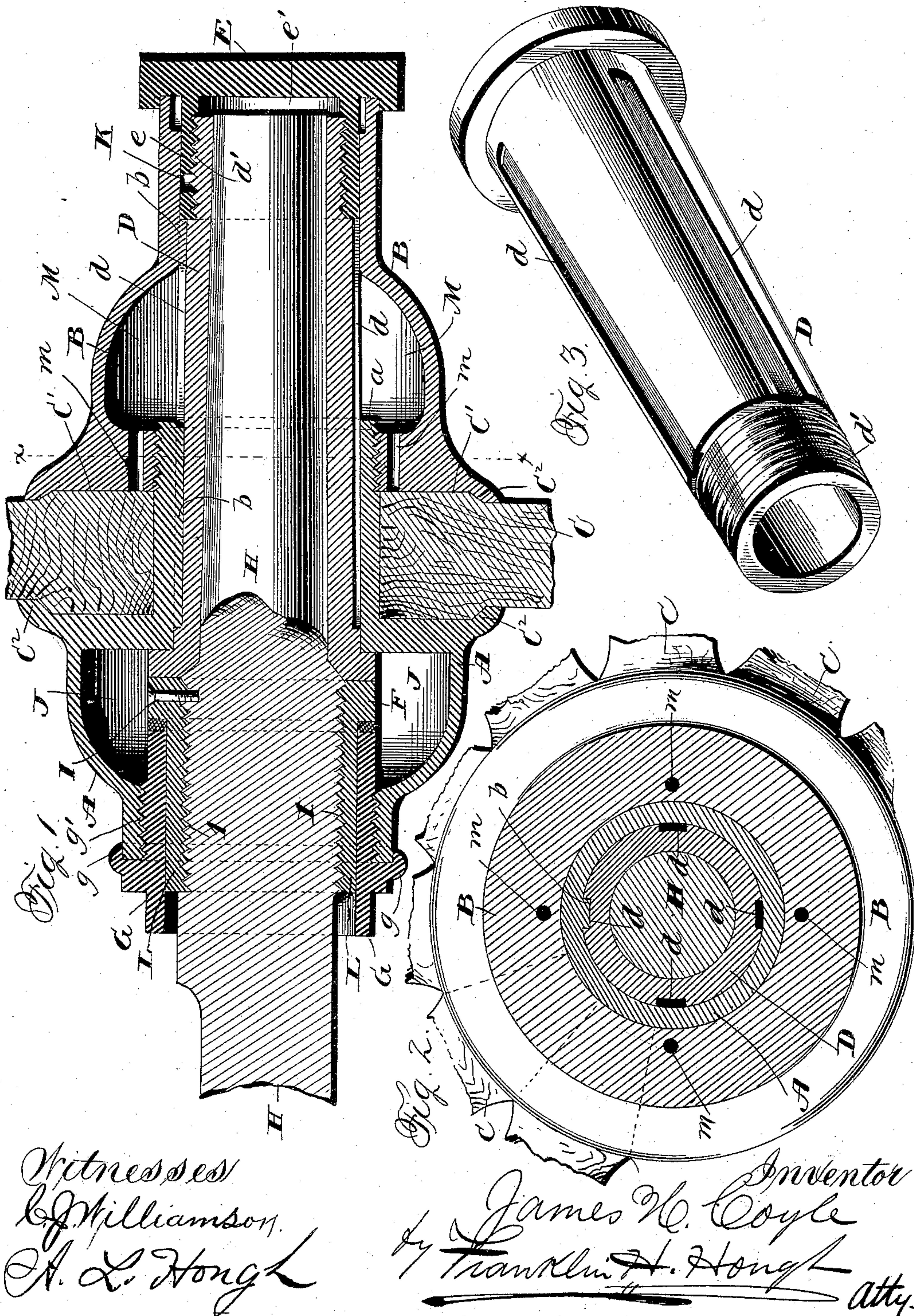


(No Model.)

J. H. COYLE.  
METALLIC HUB FOR VEHICLES.

No. 470.550.

Patented Mar. 8, 1892.





# UNITED STATES PATENT OFFICE.

JAMES H. COYLE, OF ALBANY, NEW YORK.

## METALLIC HUB FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 470,550, dated March 8, 1892.

Application filed July 22, 1891. Serial No. 400,334. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES H. COYLE, a citizen of the United States, residing at Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Metallic Hubs for Vehicles; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in sectional metallic vehicle-hubs; and it has for its object, among others, to generally improve upon the construction of this class of devices and to provide a substantial hub so constructed as to securely lock the spokes in place and prevent the possible displacement of the same without first removing the axle-box, the construction of which is such as to securely lock the hub-sections in their relative positions and effectually prevent them from being unscrewed or separated until after the axle-box has been removed.

The invention has for a further object to provide a metallic sectional hub in which provision is had for supplying oil to the bearings automatically as the same may be required and for supplying a limited quantity of oil to the dovetailed ends of the spokes, which are retained by the hub-sections, thereby keeping the same "alive" and preventing them from becoming dry and shrunken, as is frequently the case where no provision for supplying them with oil is had.

A further object of the invention is to provide a hub and its connections so constructed and arranged as to prevent the possibility of the hub being accidentally separated from the axle in the event of the cap at the end of the hub being detached.

To these ends and to such others as the invention may pertain the same consists in the novel combination, arrangement, and adaptation of parts, all as more fully hereinafter described, shown in the accompanying drawings, and then specifically defined in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, like letters of reference indicating the same parts throughout the several views, and in which drawings—

Figure 1 is a vertical longitudinal section of my metallic hub, showing the various parts embodying my invention. Fig. 2 is a cross-section on the line  $x x$  of Fig. 1. Fig. 3 is a perspective view of the axle-box, showing the grooves or slots which engage with the ribs on the inner surface of the hub.

Reference now being had to the details of the drawings by letter, A and B are the two main parts of the hub, which when screwed together by means of the screw-thread  $a$  serve to clamp and hold the dovetailed spokes C firmly in place. The annular groove C' between the hub-sections for the reception of the spokes has its outer edges contracted or turned inwardly, as shown at C<sup>2</sup>, thus serving to retain the enlarged ends of the spokes, which are fitted within said groove.

D is the axle-box, which is screw-threaded on the outer end, and also is provided with longitudinal slots  $d$ , which are adapted to engage with the ribs  $b b$ , which ribs are keyed to or cast integral with the hub-sections A and B to their inner surface, and when the parts are thus engaged the axle-box is prevented from turning in the hub, and also forms a lock which keeps the parts A and B from unscrewing and coming apart.

L is a thimble, which has a butting-ring F and is secured to the axle H by screw-threads  $l$  and held in place by the set-screw I, and thus becoming a part of the axle.

G is a thimble, which has an annular rim or bead  $g$  and is adapted to engage with the hub part A by means of the screw-threading  $g'$ , and thus holds the hub in place and prevents the same from coming off the axle H, as will be readily seen. The thimble G can be keyed and made fast from unscrewing, if desired, by putting in a set-screw.

E is a cap or oil-cup, which is provided with screw-threads  $e$  on its inner surface, which engage with screw-threads  $d'$  and serve to hold the axle-box in place and prevent any sand or any foreign matter from entering the hub.

K is a hole through which oil is poured into



the reservoir *e'* when the cap E is unscrewed far enough to expose the said hole K. When filled and the cap screwed in place, the oil will be forced through the space between the axle H and the axle-box D and deposited in the chamber J, provided for the annular rim of the axle-box and the butting-ring of the thimble L, and the axle will thus be automatically oiled at every part of its turning surface. It will also be observed that the spokes C are preserved, strengthened, and kept alive with the waste oil which passes through the holes *m* as it accumulates in the chamber N. The wheel can be taken off the axle, if desired, by unscrewing the thimble G out of the butt-end of the hub or part A. The parts A and B cannot be unscrewed or taken apart without first taking out the axle-box D, as will be seen, and while the axle-box remains in place it forms a lock and prevents the unscrewing of the hub-sections.

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

25 1. In a wheel-hub of the character described, the combination, with the hub-sections having screw-threaded connection and provided with internal ribs, as described, of the axle-box having an annular rim on the inner end and screw-threaded on the outer end to engage with the screw-threads on the inner surface of the oil-cup and having external grooves adapted to engage the ribs upon the hub-sections and prevent the unscrewing of the said

sections, substantially as and for the purpose described. 35

2. The combination, with the two hub-sections having screw-threaded connection and a recess between the sections for the reception of the spokes, of the axle-box adapted to engage the hub-sections and prevent the separation of the same, substantially as and for the purpose described. 40

3. The combination, with the two hub-sections having internal ribs and having between them an annular groove to receive the spokes, the edges of said groove being contracted, of the dovetailed spokes fitted within the recess and the axle-box having upon its outer face grooves adapted to engage the ribs upon the hub-sections, substantially as and for the purpose specified. 45 50

4. The combination, with the wheel-hub having oil-chambers N and J, of the axle, the oil-cap E, screw-threaded on inner surface to engage with screw-threads on axle-box, having filling-aperture K, and oil-passages, substantially as described, between said oil-chambers and between the oil-chamber N and the recess in the hub containing the spokes, substantially as and for the purpose described. 55 60

In testimony whereof I affix my signature in presence of two witnesses.

JAMES H. COYLE.

Witnesses:

GEORGE ADDINGTON,  
JOHN J. MCCALL.