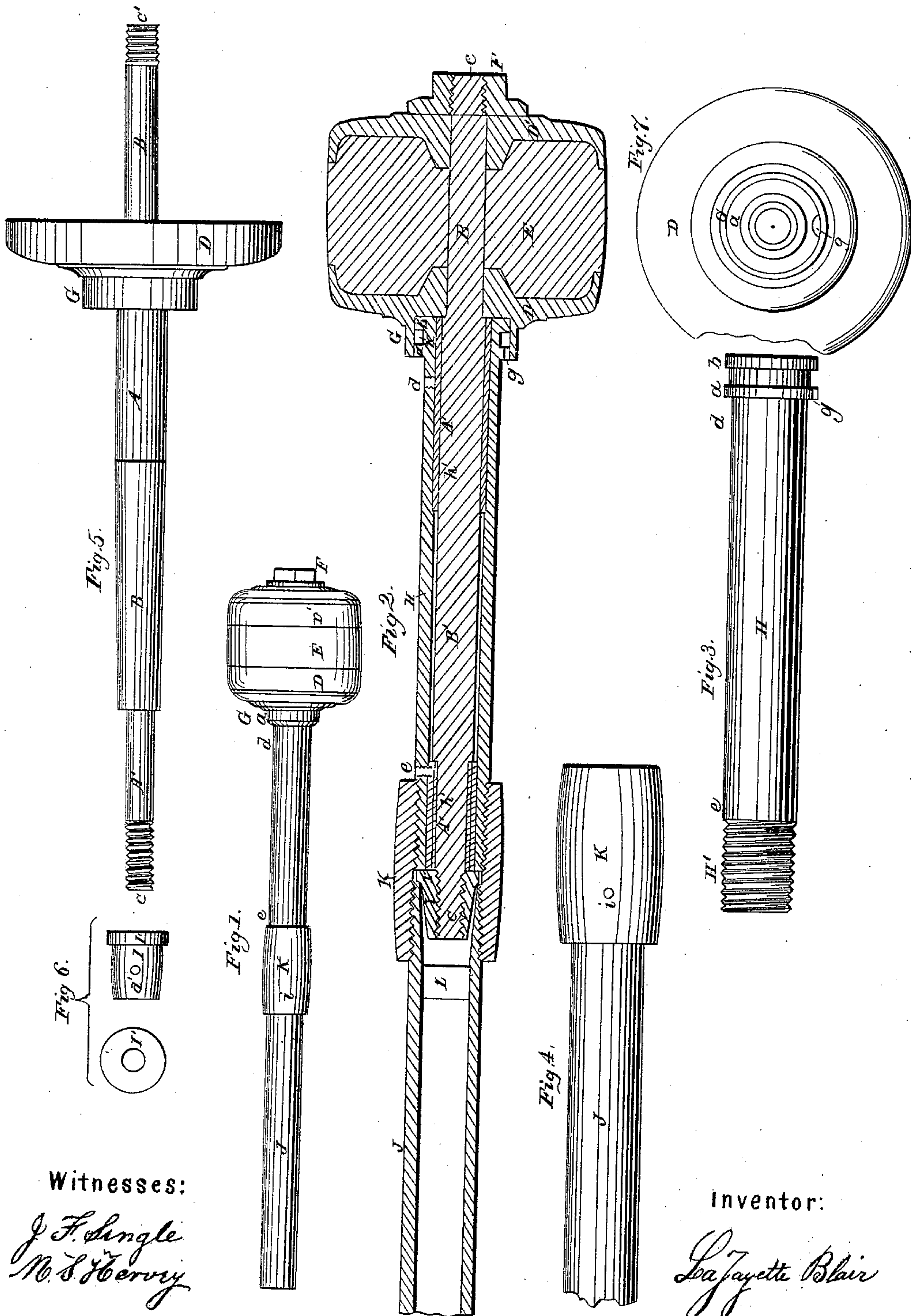


L. BLAIR.
Axle and Hub.

No. 68,596.

Patented Sept. 10, 1867.



Witnesses:

J. F. Single
M. S. Perry

Inventor:

Lafayette Blair

United States Patent Office.

LA FAYETTE BLAIR, OF PAINESVILLE, OHIO.

Letters Patent No. 68,596, dated September 10, 1867.

IMPROVED CARRIAGE-AXLE AND HUB.

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, LA FAYETTE BLAIR, of Painesville, in the county of Lake, and State of Ohio, have invented certain Improvements in Carriage-Axle and Hub; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is the exterior appearance of said carriage-axle and hub.

Figure 2, a longitudinal central section of the same, on an enlarged scale.

Figures 3 and 4 represent the two portions of the tubular axle.

Figure 5 shows the form and construction of the spindle, and on which a disk is secured.

Figure 6 is the flanged nut, which screws on the inner extremity of the said spindle, and

Figure 7, an elevation of the disk secured on the spindle, showing also the flanged extremity of the tubular axle, all of which will be fully explained.

The letters of reference marked on the several figures indicate similar parts.

This invention consists of an elongated spindle on which a disk is permanently fixed; said spindle being enclosed within a hollow tube provided with bearings, on which the spindle revolves, which tube connects with another hollow tube, so as to form the axle of the carriage; the object of this arrangement being to prevent the entrance of dirt, &c., to the bearings of the spindle, and to contain within the hollow of said tubes a sufficiency of oil, so as to allow the vehicle to be run for months with one application of oil; and further, to prevent the petroleum, now so commonly used for lubricating, from getting to and affecting the fibres of the wooden hub proposed to be used in this arrangement on the said spindle.

To enable others skilled in the art to fully understand and construct my invention I will proceed to describe it.

Fig. 5 is a steel or iron spindle, with cylindrical bearings A A'. The part B is of lesser diameter than A, and the portion B' is made gradually tapering, as seen. A' is also about the diameter of B. The extreme ends c c' have screw-threads cut on them. On the said spindle an iron disk or plate, D, is permanently secured, and so fitted that the join will be oil-tight. Next to said plate D is placed a wooden hub, E, fig. 2, against which is another plate, D', secured by a nut, F. The interior surface of said plates is constructed as shown in fig. 2, and the plate D is provided with an annular projecting rim, G, as shown. H, fig. 3, is a hollow tube provided with two annular flanges a b at one end, and a screw-thread, H', to fit a sleeve hereinafter mentioned, at the opposite ends. Screw-holes, e d, are also cut in the same tube, as seen. It will be noticed that the lower flange a has a notch, g, cut in it; this notch is more fully shown in fig. 7. Within said tube are secured anti-friction bearings h h', as seen in fig. 2. I, fig. 6, is a nut, provided with a broad annular flange, I', and a screw-hole, d'. Said nut is placed on the screw end c of the spindle before mentioned, and as will be further explained. J, fig. 4, is another hollow tube. A sleeve, K, before mentioned, having a screw-thread cut on its inside, is fitted on its end, as seen in fig. 2. Said sleeve has a screw-hole, i, as seen.

To put the above-described parts in a condition for use, the spindle, fig. 5, having the disk or plate D tightly secured thereto, is passed into the hollow tube H, and secured in place by the flanged nut I. This tube is then connected with the other hollow tube J by screwing it to the sleeve K. The spindle will now revolve freely in said tube H, on the bearings h h' placed within it. The wooden hub E, with the other parts forming the wheel, is passed on the spindle and secured by the other plate D'. By means of the nut F the said hub and plate D' are screwed up tight so that the wheel will revolve with the spindle. It will be observed that the hole g of the outer annular flange a is to be kept on the under side, this position being necessary to allow any water that might get in between the flange a and rim G to drain off, and thereby prevent its getting to the bearing h. The annular projecting rim G of plate D is intended to prevent mud or dirt from entering between it and the said flange a. If needed the annular space between the flanges a and b can be filled with packing. The object of the broad annular flange I' on the nut I is to obtain plenty of wearing surface between it and the contact end of the tube H, and the holes e d, of the said tube H, are for the purpose of receiving the lubricating oil. Said holes are to be uppermost when the axle is in position, and are to be closed with tight screw-plugs. The hollow space or chamber formed by the tapering portion of the spindle and the inner wall of the tube is designed

to hold a large supply of oil, so that the bearings of the spindle will be kept lubricated for months: The oil is supplied to the said chamber by unscrewing the plugs of the holes *e d*, and applying the spout of the oil-filler to either, the axle being propped so as to allow the wheel to be turned. The revolving spindle will then draw in the stream of oil from the can until the chamber is filled, when the plugs are to be replaced. It will be noticed that the oil cannot get to the wooden hub nor extend beyond the cork plug L of the tube J. Whenever it is necessary to remove the spindle from the hollow tube which encases it, a screw, which is retained in screw-hole *i* of the sleeve K, is screwed down until it penetrates hole *d'* of the nut I, which will hold it until the said tube H is unscrewed. The spindle can now be withdrawn from the tube. To insure the screw catching into the said nut I, match marks are scored on the rim G and flange *a*, in such manner as will indicate when both holes are in line. When the said tube H is to be put in place again it is screwed into the sleeve K, the spindle inserted and screwed into the nut I, (which, as before stated, is retained within it;) the screw of hole *i* is then turned back until the said nut is released, which will then turn with the spindle as before.

As the annular rim or band G has already been used, I do not, therefore, lay claim to such in itself considered, nor to its use in combination with a tube or tubes, as shown in the patent of E. Sampson, February 21, 1854, but confine myself strictly to its use as expressed in my claim herewith inserted.

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

1. I claim enclosing within a hollow tube, H, an elongated spindle, constructed as shown in fig. 5, and secured therein by the nut I, the said tube H being provided with bearings *h h'*, annular flanges *a b*, notch *g*, lubricating holes *e d*, and the said nut I, with the broad annular flange I', and screw-hole *d'*, all operating as and for the purposes set forth.

2. I claim the hollow tube J, provided with the sleeve K, screw-hole *i*, and plug L, in combination and operating in connection with the subject of my first claim, substantially as and for the purpose stated.

3. I claim the arrangement of the annular rim G of disk D, and annular flanges *a b* of tube H, whereby an annular recess *k* is enclosed for the purpose of allowing water or dirt to escape through the hole *g*, substantially as herein set forth.

LA FAYETTE BLAIR.

Witnesses:

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