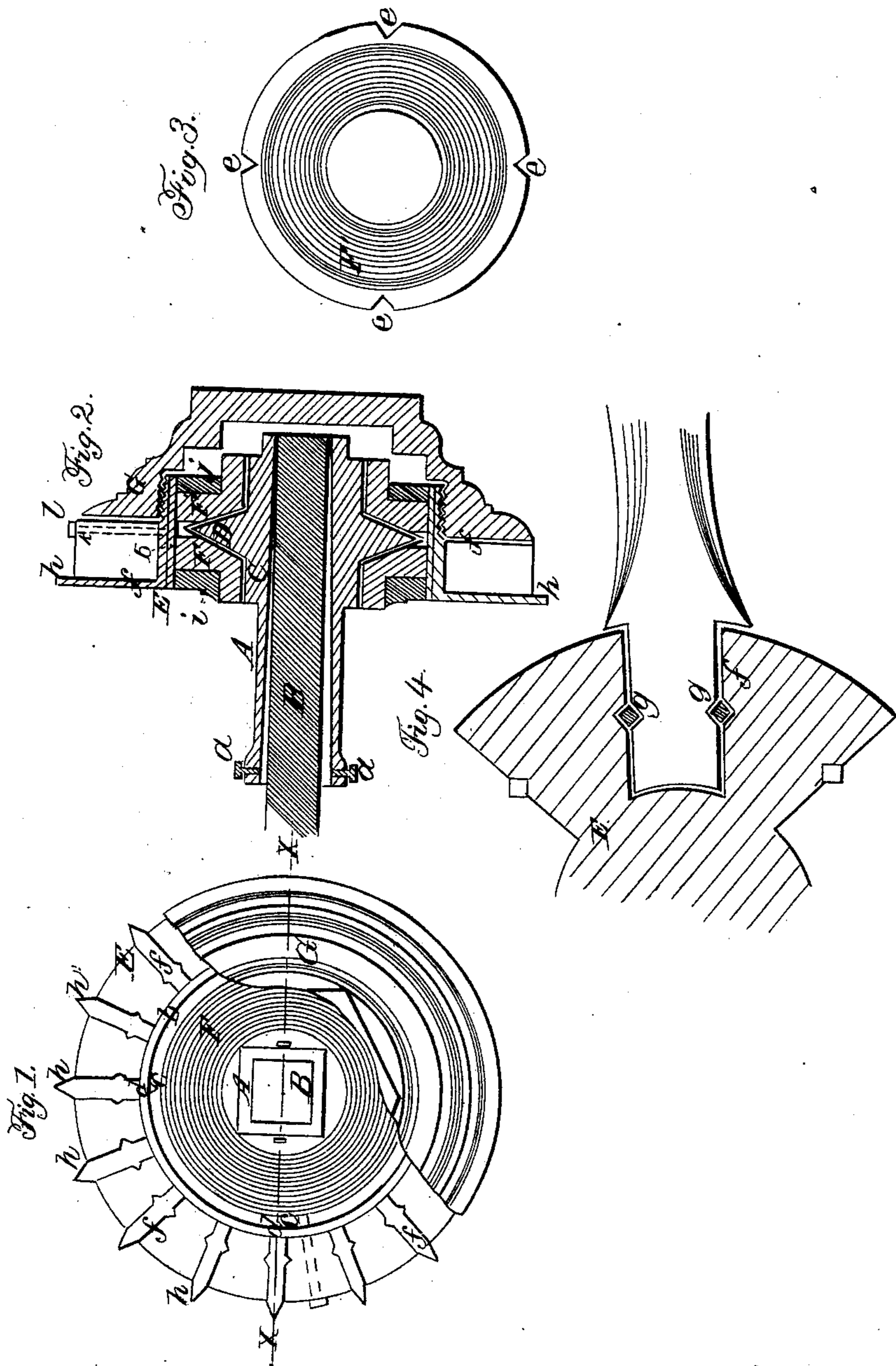


D. M. BUCKHART.

Hub.

No. 69,760.

Patented Oct. 15, 1867.



Witnesses:

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D. M. BUCKHOUT, OF MOUNT KISCO, NEW YORK.

Letters Patent No. 69,760, dated October 15, 1867.

IMPROVEMENT IN HUB AND AXLE 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, D. M. BUCKHOUT, of Mount Kisco, in the county of Westchester, and State of New York, have invented a new and improved Hub and Axle for Vehicles; and that the following description, taken in connection with the accompanying drawings, hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvements, by which my invention may be distinguished from all others of a similar class, together with such parts as I claim, and desire to have secured to me by Letters Patent.

This invention relates to a new and improved metallic hub and axle for vehicles, and it consists in a novel construction of the hub, whereby the spokes may be firmly secured in it, the hub allowed to turn on its axle with but little friction, and the wheel rendered capable of being adjusted at a greater or less distance apart, as may be desired, and other advantages obtained, as hereinafter set forth. In the accompanying sheet of drawings—

Figure 1 is an outer or face view of my invention, partly in section, and with some of the internal parts removed.

Figure 2, a section of the same, taken in the line *x x*, fig. 1.

Figure 3, a detached view of a part pertaining to the same.

Figure 4, an outer or face view of a portion of the hub, with the outer plate and nut removed, and showing one spoke inserted.

Similar letters of reference indicate like parts.

A represents the arm upon which the hub turns. This arm is of square form, and tubular, and is fitted upon the axle B, as shown clearly in fig. 2. The interior of the arm is of taper form, but the axle B, which is fitted within it, is of uniform thickness. The outer end of the interior of the arm corresponds in dimensions to the axle, and the latter consequently fits snugly in the outer end of the arm, the inner end of the latter being secured in position by set-screws *a*, as shown clearly in fig. 2, and by adjusting these screws the draught of the wheel may be regulated as desired. On the arm A there is a cylindrical collar, C, having a V-shaped flange, D, extending entirely around it. This collar and flange may be of steel; at least that would be the preferable material. This collar and flange are permanently secured on the arm. E represents the principal portion of the hub, which is of cast iron, having a circular chamber, *b*, at its centre, in which a box, F, is placed, to work in contact with one side of the flange D. This box F is prevented from turning in the chamber *b* by having grooves *c* in its periphery, to receive ribs *d* on the inner surface of the chamber *b*, as shown in fig. 1. Within this same chamber *b* there is also fitted another box, F', which works in contact with the other side of the flange D, and is prevented from turning within the chamber *b* by having grooves *e* in its periphery to receive the ribs *d* on the inner surface of the chamber *b*. The portion of the part E of the hub, at the exterior of the chamber *b*, has a series of radial mortises, *f*, to receive the tenons of the spokes, and these tenons are secured in the mortises, or prevented from drawing out of them, by keys *g*, as shown clearly in fig. 4, and the spokes are braced by projections *h*, which extend out beyond the ends of the mortises *f*. This part E of the hub, the chamber *b*, and the portion at its exterior, with the projections *h*, are all cast in one piece, a flange, *i*, at the rear of the chamber *b* serving as a bearing for the box F, both boxes F F' rotating on the collar C. The box F' is retained in the chamber *b*, and the spokes clamped firmly in position by a plate, G, which constitutes the other part of the hub, and is provided with an internal screw-thread to work on a screw cut on the periphery of the chamber *b*. This plate covers the tenons of the spokes, as shown in fig. 2. On the outer part of the box F' there is fitted a packing, *j*, and an oil-passage, *k*, is made in the part E, the orifice of said passage being closed by a plug, *l*.

From the above description it will be seen that the spokes are independent of each other, and a broken spoke can be removed, and replaced by a new one, by simply unscrewing the plate G, taking out the broken spoke, and slipping the new one in place. The hub will rotate with but little friction, owing to the rotation of the boxes F F' on the collar C and V-shaped flange D. The wheel is also made to run steady or without wobbling, and without the possibility of running off the arm. The draught of the wheel, by adjusting the set-screws *a*, may be regulated as desired without any difficulty whatever. The distance between the wheels can be increased or decreased at will by adjusting the arms A a greater or less distance on the axle, and securing the arms by the set-screws. The vehicle can thus be made to track in any portion of the country. The axle being square is stronger than a cylindrical one, and as no heating is required in setting the axle, the temper will not be

drawn, a contingency quite common in setting the common axles. The projections *h* prevent the spokes from dishing in the wrong direction.

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

The cast-metal hub provided with the circular chamber *b* and the mortises *f* to receive the tenons of the spokes, the projections *h* and the plate *G* to screw on the periphery of the chamber *b*, in combination with the boxes *F F'* fitted within the chamber *b*, and the collar *C*, and V-shaped flange *D*, on the arm *A*, all arranged substantially as shown and described.

I further claim the arm *A*, fitted on the axle *B*, and secured by set-screws *a*, substantially as shown and described.

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Witnesses:

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