

W. A. JOHNSON.
Fifth Wheels for Carriages.

No. 153,571.

Patented July 28, 1874.

Fig. 1.

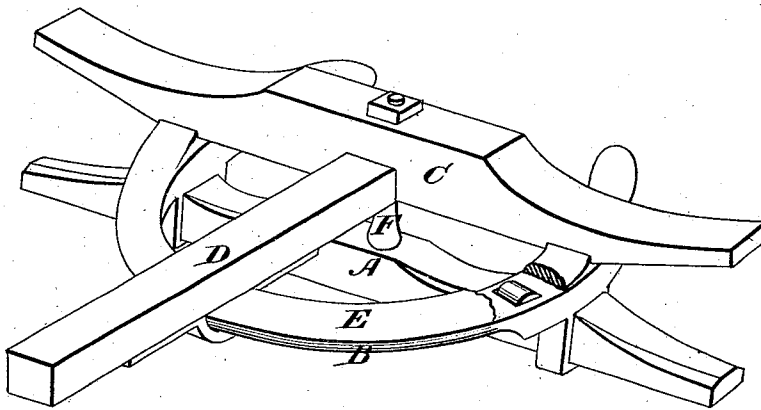
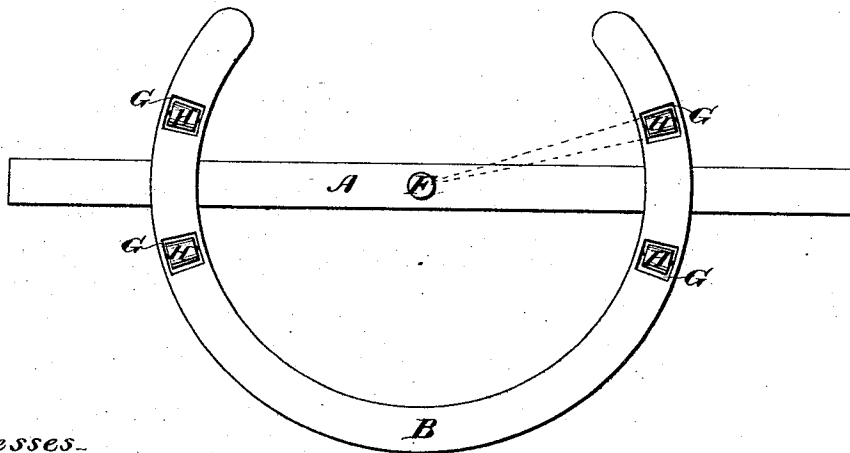


Fig. 2.



Witnesses—
C. F. Brown.
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Inventor
Wm. A. Johnson.
by his Attys.
Wm. A. Johnson.

UNITED STATES PATENT OFFICE.

WILLIAM A. JOHNSON, OF OXFORD, PENNSYLVANIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO H. V. FAIRLAMB, OF SAME PLACE.

IMPROVEMENT IN FIFTH-WHEELS FOR CARRIAGES.

Specification forming part of Letters Patent No. **153,571**, dated July 28, 1874; application filed April 30, 1874.

To all whom it may concern:

Be it known that I, WILLIAM A. JOHNSON, of Oxford, in the county of Chester and State of Pennsylvania, have invented a new and Improved Fifth-Wheel for Carriages and Wagons; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings forming part of this specification, in which—

Figure 1 is a perspective view of my improved fifth-wheel; and Fig. 2 is a top-plan view of the lower segment or circle, the upper portion being removed.

Similar letters of reference in the accompanying drawings denote the same parts.

My invention has for its object to improve the construction of fifth-wheels for carriages and wagons, whereby the same are rendered more efficient in their operation than those now in use. To this end the invention consists in providing the lower segment or circle with a series of conical rollers arranged in radial lines from the center of the wheel, so as to bear uniformly upon the working face of the upper segment or circle of the wheel.

In the employment of conical rollers arranged in the manner proposed I proceed upon the correct mechanical and scientific principle that where one part moves in the arc of a circle the rollers should be so constructed that a vertical plane coincident with the axis of the rollers, or tangential to either side of them, will be radial to the circle of rotation of the moving part. By this means every part of the moving surface that bears upon the rollers will pass across their faces in the direct line of their rotation, thus avoiding all scraping or wearing motion, causing the parts to run with less friction, and rendering them less liable to be cramped, displaced, or broken than if the rollers were simply made cylindrical in shape.

In the accompanying drawings, A is the axle of a carriage or wagon, and B is the lower segment of the fifth-wheel secured thereto. C is the bolster, D the tongue, and E the upper segment of the fifth-wheel, these latter

parts being pivoted to the axle by the king-bolt F, in the usual manner. Instead of making the fifth-wheel of segments or arcs, I sometimes form them in a complete circle, for use on express-wagons. G G are large openings cast or otherwise formed directly through the lower portion B of the fifth-wheel, and H are the conical rollers journaled within such openings, so as to occupy radial lines from the center of the wheel. The rollers project sufficiently above the face of the lower segment to bear against the working face of the upper segment, and, owing to their form and arrangement, move along the upper segment, when the axle or bolster is turned, in the direct line of their rotation.

By this construction and arrangement all scraping and cramping between the upper segment and rollers are prevented, and the friction of these parts reduced to the minimum.

Any proper number of the conical rollers may be employed, according to the size and weight of the fifth-wheel, as will be readily understood.

The openings G are extended entirely through the lower segment, and are sufficiently large to permit dust and dirt to pass through them to the ground, and thus prevent the clogging of the rollers.

Having thus described my invention, what I claim is—

1. A fifth-wheel for carriages and wagons, having its lower circle provided with conical rollers placed in radial lines from the center of the wheel, so as to move along the face of the upper segment in the direct line of their rotation, substantially as described, for the purpose specified.

2. The fifth-wheel consisting of the upper circle E, the lower circle B, and the conical rollers H, placed radially within enlarged vertical openings G in the lower circle, substantially as described, for the purpose specified.

WM. A. JOHNSON.

Witnesses:

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F. C. HUTCHISON.