(No Model.)

H. HAFKER.

FIFTH WHEEL.

No. 351,508. Patented Oct. 26, 1886.

Fig. 1.

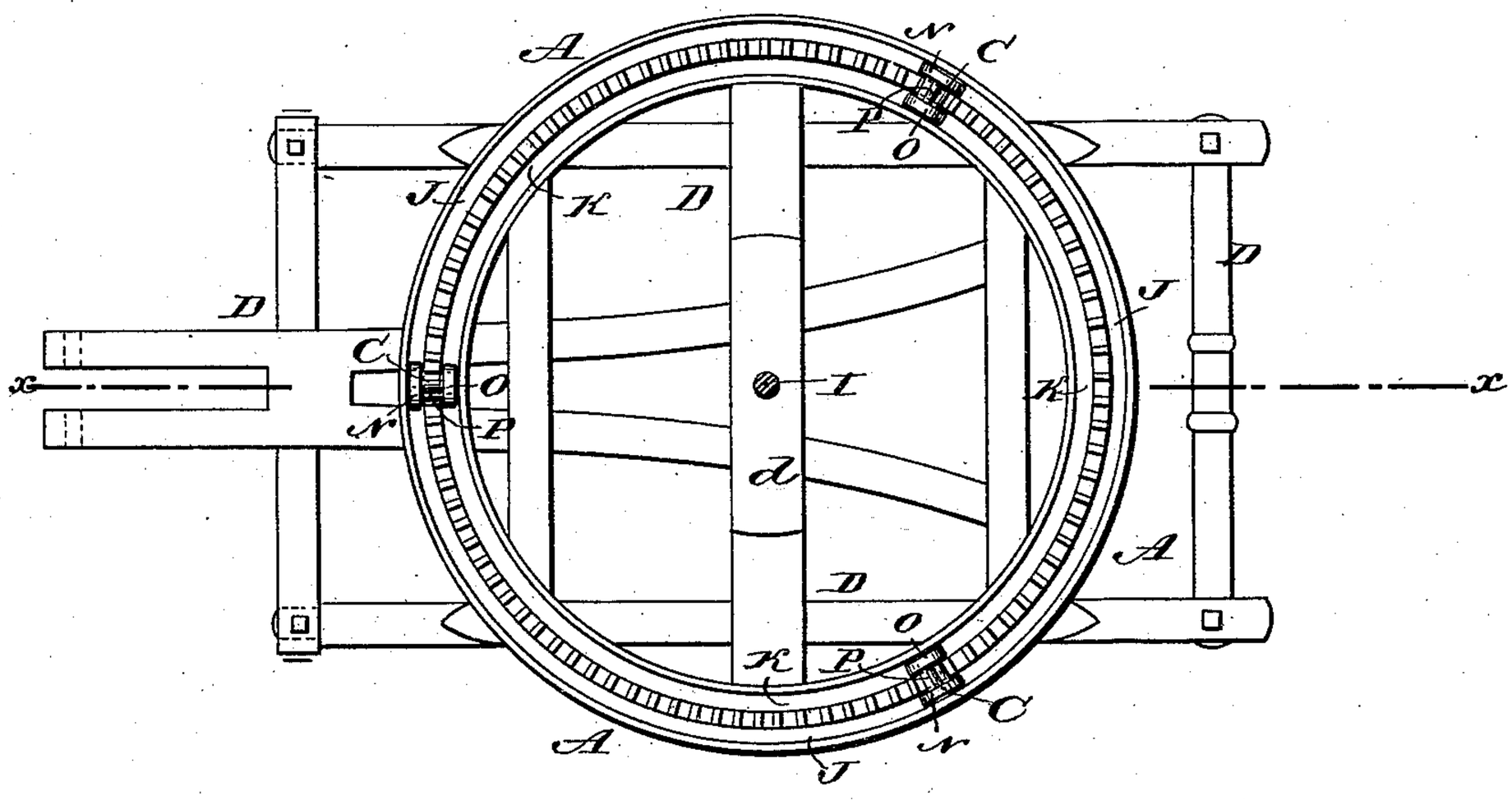


Fig. 2.

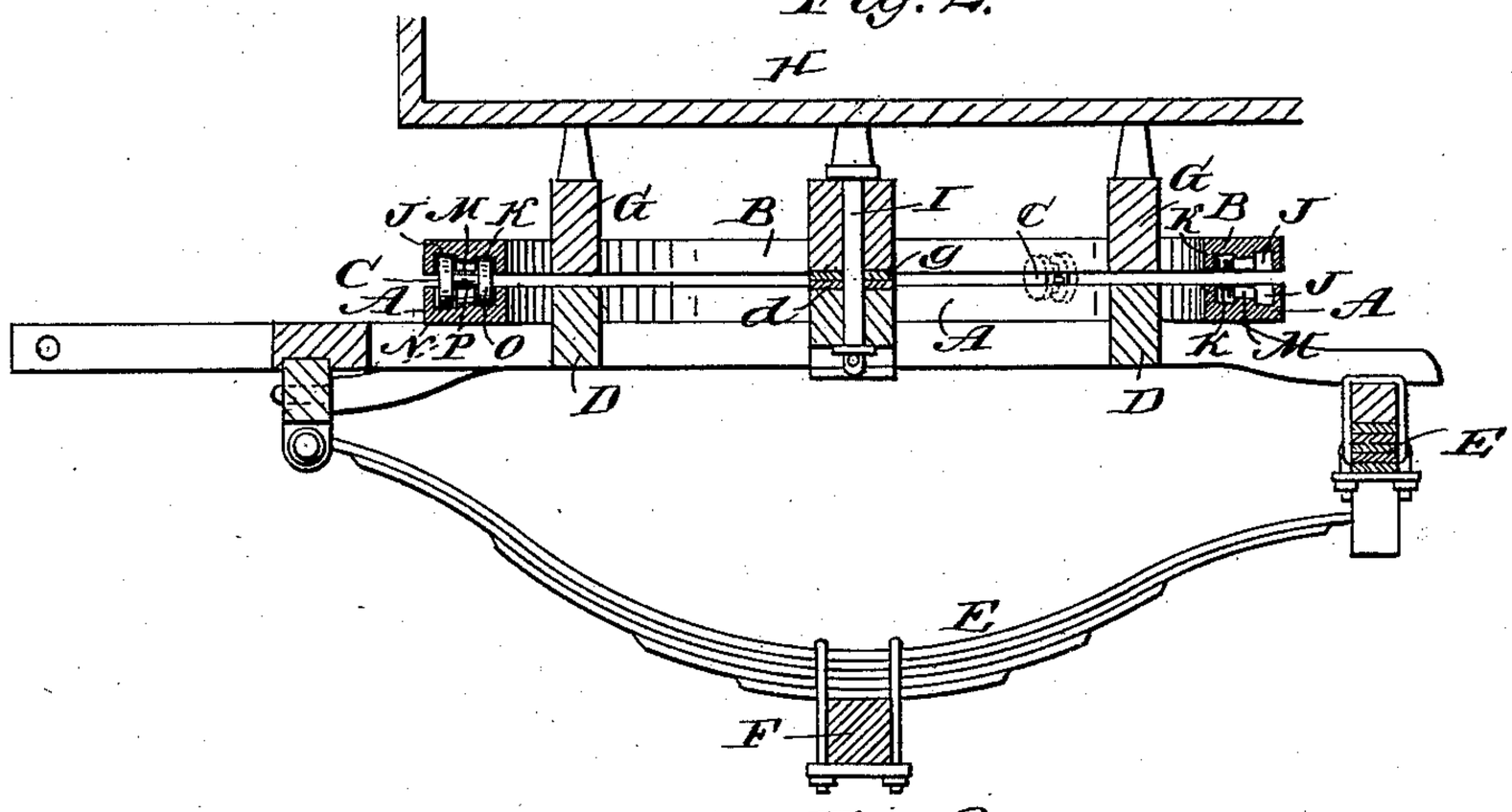
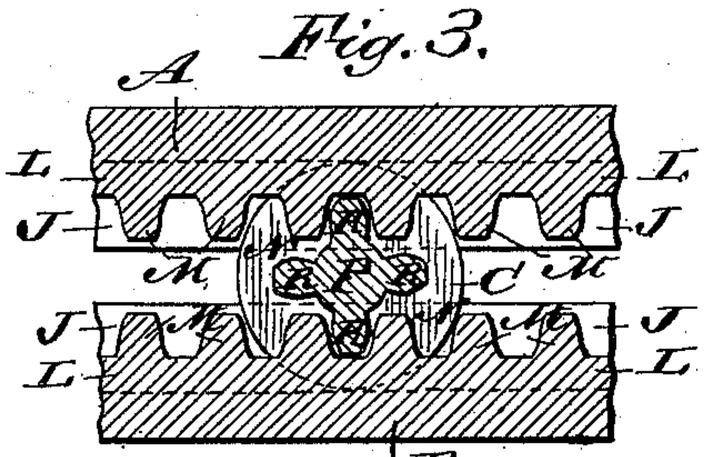


Fig. 3.



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HENRY HAFKER, OF NEW YORK, N. Y.

FIFTH-WHEEL.

SPECIFICATION forming part of Letters Patent No. 351,508, dated October 26, 1886.

Application filed August 27, 1886. Serial No. 211,983. (No model.)

To all whom it may concern:

Be it known that I, HENRY HAFKER, of the city, county, and State of New York, have invented a new and Improved Fifth-Wheel for Vehicles, of which the following is a full, clear, and exact description.

My invention relates to fifth-wheels for vehicles, and has for its object to provide a fifth-wheel having few, simple, and inexpensive parts, which, when connected to the forward running-gear of a vehicle, will give effective support to the body of the vehicle and allow the vehicle to be turned to either side with very little friction.

The invention consists in certain novel features of construction and combination of parts of the fifth-wheel and its arrangement with the running-gear of the vehicle, all as hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of part of the running-gear of a vehicle with my improved fifth-wheel applied, the upper half or part of the wheel being removed. Fig. 2 is a vertical sectional elevation taken on the line *x x*, Fig. 1, and shows also parts of the vehicle-body and platform-springs; and Fig. 3 is a vertical sectional view of part of the fifth-wheel next one of the geared anti-friction rollers of the wheel, and taken centrally across the roller.

The fifth-wheel comprises a lower annular or ring plate, A, and an upper annular or ring plate, B, supported on the lower plate, A, by rollers C. The annular plate A is secured by bolting or otherwise to the lower front part, D, of the forward running-gear, which is supported on platform or other suitable springs, E, which in turn are clipped to the front axle, F, of the vehicle, and the upper annular plate, B, is secured to the upper part, G, of the forward running-gear, and on which the body H of the vehicle is supported. A king-bolt, I, passes centrally through the parts D G of the running-gear, which, preferably, have metal wear-plates *d g* fixed to them, all as clearly shown in the drawings. These parts D E F G H I may have any usual or approved construction.

The opposing faces of the ring-plates A B of the fifth-wheel are formed alike, with two concentric grooves, J K, which are smoothly finished, especially at their bases, and are separated a little distance by a rib, L, on which are formed teeth M. The grooves J K and toothed ribs L M of both plates A B stand precisely opposite each other. The rollers C, which are placed between the wheel-plates A B, are each formed with an outer disk portion, N, which enters the grooves J J of the opposite plates A B, and with an inner disk portion, O, which enters the opposite grooves, K K, of the plates, and these parts N O of each roller C are connected by a smaller central portion or shank, P, formed at its periphery with teeth R, which engage the opposite teeth, M M, of the fifth-wheel plates A B, as clearly shown in Figs. 2 and 3 of the drawings. As many of these rollers C may be used as may be thought necessary. I show three of them, arranged equidistant around the fifth-wheel. (See Fig. 1.)

With a fifth-wheel thus made and applied to the running-gear of a vehicle, it is obvious that the upper part of the wheel and running-gear will have substantial support on the end disks, N O, of the rollers C, which will move in the opposite grooves J K of the fifth-wheel with very little friction, and as the toothed shanks R of the rollers engage the opposite teeth, M M, of the wheel-plates the rollers will be caused to travel around in the grooves of the plates as the opposite plates move around one on the other; hence the rollers will always be kept the same distance apart around the wheel to give efficient support of the upper part of the running-gear on its lower part, and the fit of the roller-disks in the grooves J K prevents lateral play of the wheel-plates A B on each other; hence the entire fifth-wheel is very strong and substantial, and while being adapted, when heavily made, for use on trucks intended to carry heavy loads, the wheel may also be made so as not to appear combersome on lighter vehicles. Furthermore, the fifth-wheel is not expensive, and may be quickly and easily secured to the running-gear of a vehicle.

It is not essential to the effective working of the fifth-wheel that the opposite ring-plates

have two grooves—one at each side of the toothed rib or rack L M—as rollers C, having but one disk, N or O, with a toothed shank, P R, engaging the rack L M, may be used with upper and lower ring-plates having but one opposing pair of grooves, J J or K K, to receive the roller-disks; but the construction shown and above described is preferred in practice.

I am aware that a fifth-wheel has had the upper surface of its lower curved iron formed with a plain central raised rib having inclined sides, the upper iron having a grooved under face, which groove had a rib corresponding with that of the lower iron, and was provided with teeth at opposite sides of the rib. Two toothed disks joined by a plain axle portion engage the said teeth while the axle portion rides between the two curved ribs. As the lower iron has no groove and the sides of its rib are inclined, any sudden forward jar would tend to force the toothed disks upward and over said rib, while in my construction this is rendered impossible by reason of the two plain disks which run in grooves formed in both irons, the teeth being in all instances between the disks and the outer walls of the grooves, respectively.

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

The combination, in a fifth-wheel, with the upper and lower ring-plates formed with grooves in their adjacent faces, and opposite toothed ribs or racks within said grooves, of two disks running in said grooves and connected by the toothed shanks which engage the said racks, substantially as set forth.

HENRY HAFKER.

Witnesses:
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