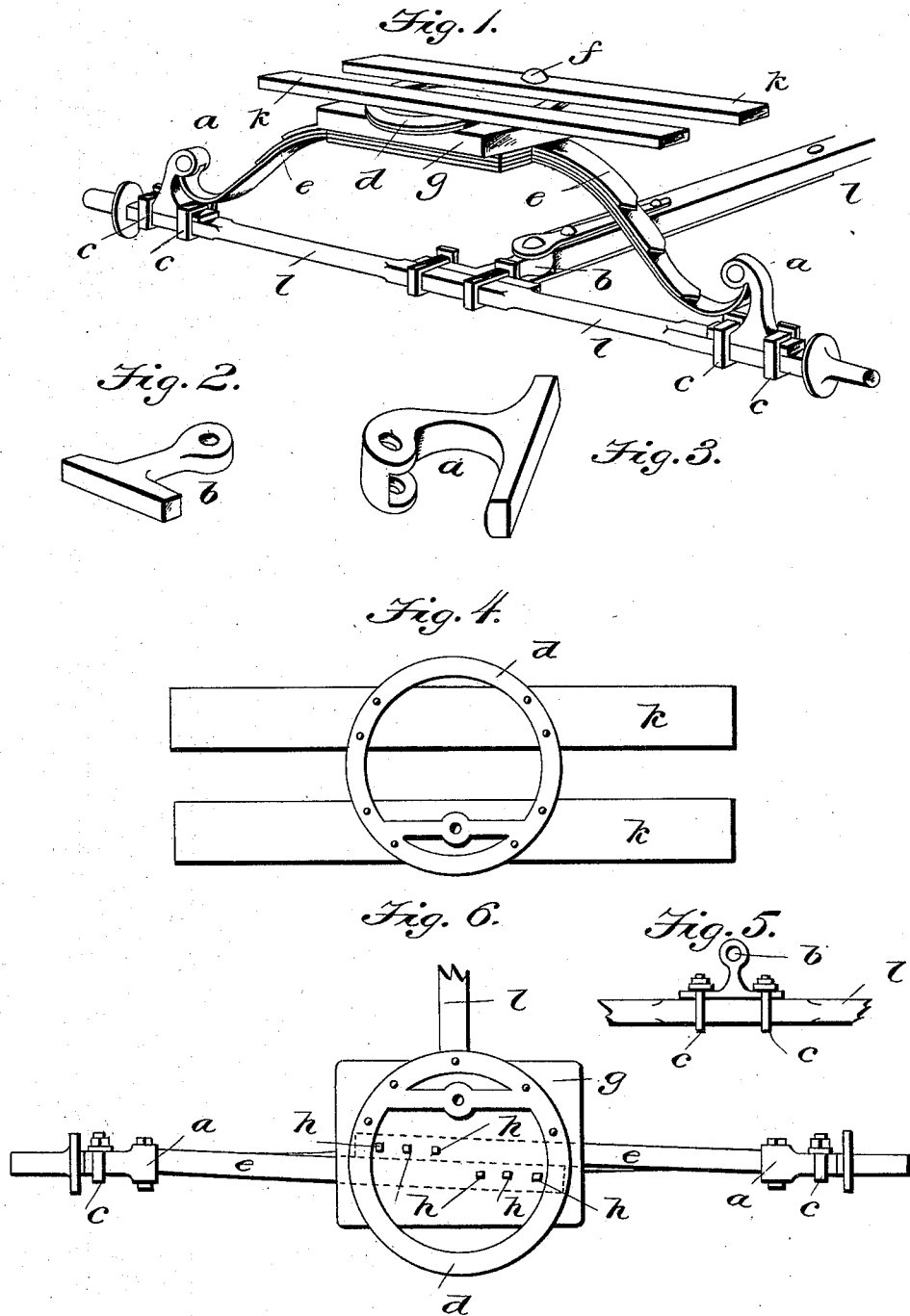


(No Model.)

D. W. CAMP.  
VEHICLE GEAR.

No. 412,726.

Patented Oct. 15, 1889.



Witnesses

*[Handwritten signatures of witnesses]*

Inventor

*Daniel W. Camp*  
By his Attorneys.  
*James Sheehy*

# UNITED STATES PATENT OFFICE.

DANIEL W. CAMP, OF LINCOLN, NEBRASKA.

## VEHICLE-GEAR.

SPECIFICATION forming part of Letters Patent No. 412,726, dated October 15, 1889.

Application filed January 19, 1889. Serial No. 296,945. (No model.)

To all whom it may concern:

Be it known that I, DANIEL W. CAMP, a citizen of the United States, residing at Lincoln, in the county of Lancaster and State of Nebraska, have invented certain new and useful Improvements in Vehicle-Gearing; 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 and figures of reference marked thereon, which form a part of this specification.

My improvements relate to vehicle-gearing. However, they relate more especially to my "eccentric fifth-wheel," my "axle-coupling," and my "spring-shackle."

My objects are—

First. By my eccentric fifth-wheel I lessen and equalize the wearing and cutting by friction of the one section of the wheel by the other—that is to say, in turning the vehicle the upper section will deviate to the right or left, equalizing the friction, and the turning is easier. The one section will not cut the other unevenly, as is the case in former styles of fifth-wheels, and by this fifth-wheel I partially obviate the side motion to the body of the vehicle.

Second. By my axle-coupling I obviate the necessity of a hole for the king-bolt through the center of the axle, thus virtually strengthening the axle and making it less liable to break, as in former styles, and the vehicle may be turned on much less space, or turned shorter.

Third. By the use of my spring-shackle I can use a longer spring. The shackle being placed directly against the shoulder of the axle, the weight of the load rests on the shoulder of the axle, is carried more on a level, and the liability of breaking the axle is lessened. The spring is directly over the axle, and the shackles are out of the way of the body, and I use a spring crossed in the center, which adds both strength to the axle and elasticity to the springs; and, further, the fifth-wheel is above the springs instead of below, and by the combination of the several parts of my invention I make a "low-down" vehicle that cannot be made by any other style.

I obtain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a front view of vehicle-gearing, showing my eccentric fifth-wheel, my axle-coupling, and my spring-shackle in proper position. *aa* is my spring-shackle. *b* is my axle-coupling. *CC* are clips used to hold the axle-coupling to the axle. *cccc* are clips used to hold the spring-shackle to the axle. *d* is the fifth-wheel. *ee* are springs—Timpkin pattern. *f* is the king-bolt in fifth-wheel. *g* is the head-block, resting on the spring, and on which the lower section of fifth-wheel is fastened. *i* is the "reach" or coupling. *kk* are the spring-bars, fastened to the upper section of the fifth-wheel, and on which the vehicle-body will rest. *ll* is the axle.

Fig. 2 is the axle-coupling. *b* is a perspective view of the axle-coupling.

Fig. 3 is the spring-shackle. *a* is a perspective view of the spring-shackle.

Fig. 4 is the spring-bars shown at *k* in Fig. 1, and the upper section of the fifth-wheel inverted. *kk* is the spring-bars. *dd* is the upper section of the fifth-wheel.

Fig. 5 is a view of a portion of the axle and the axle-coupling with the clips. *l* is a portion of the axle, as is shown at *l* in Fig. 1. *b* is the axle-coupling, as shown at *b* in Fig. 1. *CC* are the clips, as shown at *CC* in Fig. 1.

Fig. 6 is a top view of the vehicle-gearing, intended to show all that is shown in Fig. 1, except what is shown in Fig. 4. *aa* are the spring-shackles. *cc* are the outward clips used to fasten the spring-shackles to the axle, as is shown at *cc* in Fig. 1. *g* is the head-block mentioned at *g* in Fig. 1. *d* is the lower section of fifth-wheel. *ee* are the springs. *hhhhhh* are the bolts by which the head-block is fastened to the springs. *i* is the reach or coupling, as is shown at *i* in Fig. 1.

To enable others skilled in the art to make and use my invention, I will now proceed to describe it in reference to the drawings and the figures and letters of reference thereon.

In Fig. 1 of the drawings is shown my improvements in connection with the old.

*aa* is my spring-shackles, which are made of iron, and are to be securely fastened to the axle by iron clips *cccc*. My spring-shackle

is also shown at Fig. 3, *a*. The size and height of the shackles are to be varied, if necessary, to suit the manufacturer and the trade; but when it is desired to have a low-down vehicle they should be made so that the springs *e e* will nearly touch the axle.

The two sections of the fifth-wheel are shown at *d* in Fig. 1. The top section is also shown at *d* in Fig. 4, bottom side up, and the lower section is shown at *d* in Fig. 6. They are made of iron, size to correspond with the size of the vehicle, a perfect circle about ten to fifteen inches in diameter, though the size may be varied without changing the principle. About one-fourth of the distance from the rear outer edge of each section of the fifth-wheel is also a cross-bar of iron of the same dimensions as the circle portion, in the center of which is a hole for the king-bolt, (shown at *f* in Fig. 1.) The two sections should be made precisely similar—that is to say, when the top section is placed on the lower section the outer and inner edges should be even, and the holes for the king-bolt must correspond precisely. Then the lower section *d* at Fig. 6 is fastened by iron bolts to head-block *g*, as shown in Fig. 6, and also at *g* in Fig. 1. The head-block should be made of hard wood, about eight inches wide, about fourteen inches long, and one and a half inch thick. This, however, may be varied to correspond with the size of the fifth-wheel. The head-block is then fastened to the springs by iron bolts, as shown at *h h h h h h* in Fig. 6. The top section of the fifth-wheel *d* at Fig. 4 is then fastened by iron bolts to the spring-bars *k k*. It will be observed that the top section of the fifth-wheel, as in Fig. 4, is bottom side up. The head of the bolts in the two sections of the fifth-wheel having been sunk, so that the surface is perfectly smooth, the top section, Fig. 4, is turned over and placed on the lower section, Fig. 6, the iron king-bolt *f* at Fig. 1 is placed in position, and my fifth-wheel is complete.

The body of the vehicle of course is placed on spring-bars *k k*, Fig. 1, which should be made of hard wood.

My axle-coupling, as shown at *b*, Fig. 1, and also *b*, Fig. 2, is made of iron. The size must be, first, to correspond with size of axle *l l* in Figs. 1 and 5; second, the length of the axle-coupling must be such that the hole for the king-bolt which fastens it to the reach or coupling *i* in Fig. 1 must be directly under the king-bolt at *f* in Fig. 1. The axle-coupling *b* is then securely fastened to axle *l l* by means of iron clips *C C*, or forged to the axle, the reach or coupling *i*, which may be made of hard wood, corresponding in size with the axle-coupling *b*. A substantial iron bar should be placed on the top and bottom sides of the reach or coupling, and to wholly avoid all

rocking and shaking of the axle the lower bar should project under the axle-coupling about one or two inches. The axle-coupling is then fastened to the reach by a king-bolt, and it must be understood that in order to avoid all strains and friction of these parts the king-bolt in the axle-coupling must be directly under the king-bolt in the fifth-wheel, and to avoid all noise and rattling I place a rubber "bumper" between the end of the reach *i* and the axle-coupling *b*.

My eccentric fifth-wheel, my axle-coupling, and my spring-shackles may be used in buggies, carriages, wagons, or any other vehicle having springs, being adapted for either business or pleasure. The construction is so simple that no mechanic can fail to understand it. There is no unusual expense—in fact, the cost is trifling—and there is nothing in any part of the mechanism that is liable to get out of order. The spring-shackle is intended for the front axle, though it is applicable also to the rear as well; and by combination of principles in the several parts of my improvements it is peculiarly adapted to a low-down vehicle with easy movements, easily turned around, and many other conveniences not found in other styles of make.

And now, having fully described my invention, what I claim, and what I desire to secure by Letters Patent, is—

1. The combination, with the front axle, of the shackles secured thereon and against the shoulders thereof, the springs secured at one end to the shackles and at the opposite end to the head-block, the lower section of fifth-wheel arranged upon the upper side of the head-block, the spring-bars, the upper section of fifth-wheel secured to said bars, both sections of said wheel having concentrically-arranged apertures and connected by a bolt passing through said apertures, substantially as specified.

2. The combination, with the front axle, of the shackles secured thereon and against the shoulders thereof, the springs secured at one end to the shackles and at the opposite end to the head-block, the lower section of fifth-wheel arranged upon the upper side of the head-block, the spring-bars, the upper section of fifth-wheel secured to said bars, both sections of said wheel having concentrically-arranged apertures and connected by a bolt passing through said apertures, and the reach having its forward end secured to the front axle beneath the fifth-wheel and free from the latter, substantially as specified.

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

DANIEL W. CAMP.

Witnesses:

JOHN GRAHAM,  
MILO CHUSE.