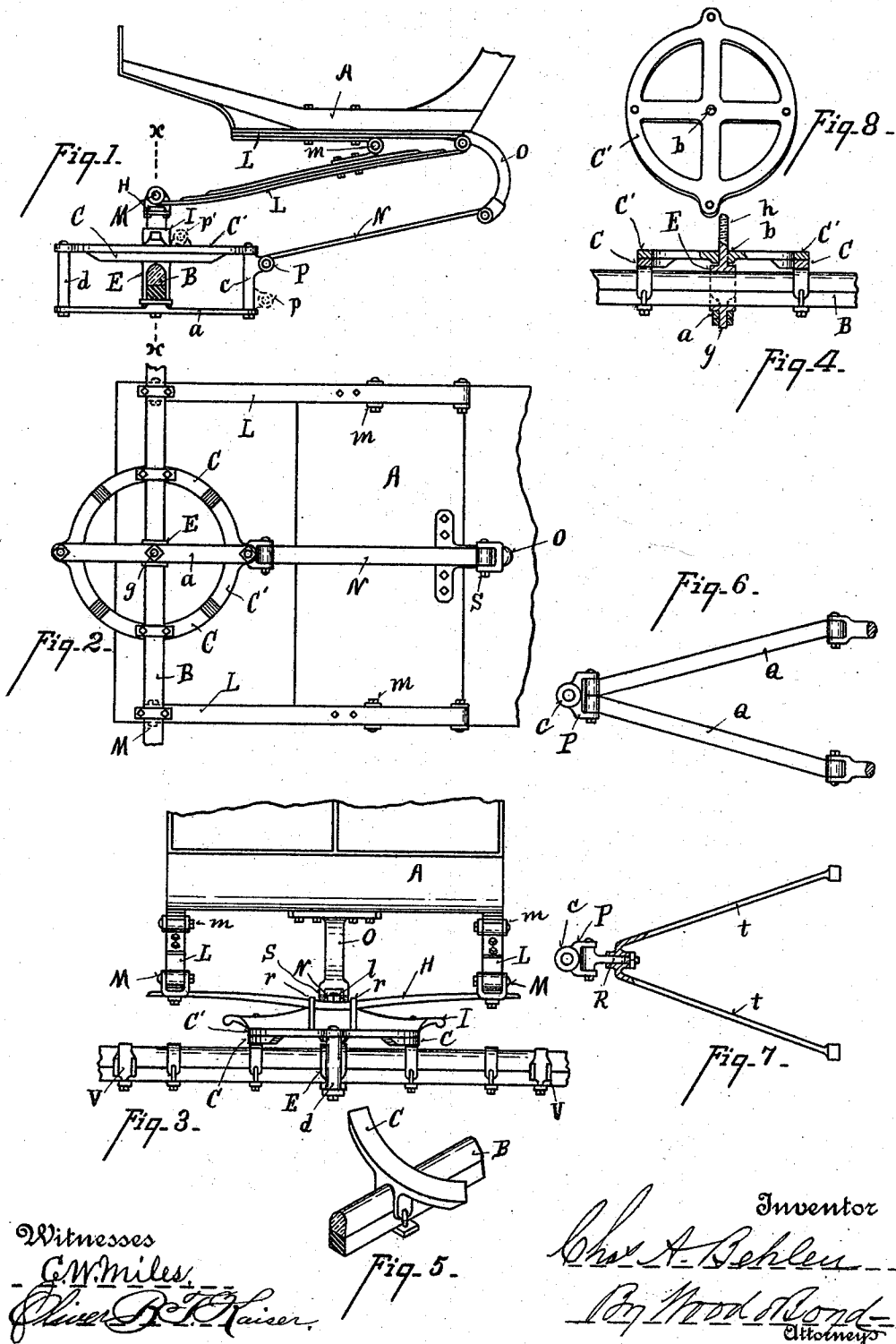


(No Model.)

C. A. BEHLEN.
CARRIAGE GEAR.

No. 573,384.

Patented Dec. 15, 1896.



Witnesses

C. W. Miles

Chas. B. Kaiser

Fig. 5.

Inventor

Chas. A. Behlen

By Wood Bond
Attorneys

UNITED STATES PATENT OFFICE.

CHARLES A. BEHLEN, OF CINCINNATI, OHIO.

CARRIAGE-GEAR.

SPECIFICATION forming part of Letters Patent No. 573,384, dated December 15, 1896.

Application filed November 15, 1895. Serial No. 569,081. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. BEHLEN, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Carriage-Gear, of which the following is a specification.

One of the objects of my invention is to provide a platform-gear for carriages which will allow of the thills being attached directly to the axle instead of being attached to the running-gear above the axle.

Another object of my invention is to employ the front springs for the draft members, dispensing with the ordinary perch or coupling connecting the bolster with the rear axle.

The features of my invention will be more fully set forth in the description of the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side elevation of the front spring-gear connected to the body and axle. Fig. 2 is a bottom plan view of Fig. 1. Fig. 3 is a front elevation of Fig. 1. Fig. 4 is a front elevation of the axle and fifth-wheel connections. Fig. 5 is a perspective view of one of the traveling fifth-wheel segments connected to the axle. Fig. 6 is a modification of the central coupling-spring. Fig. 7 is another modification of the central coupling. Fig. 8 is a perspective view of the fifth-wheel ring.

A represents the carriage-body. The one shown is of the cut-away form and is chosen for convenience of illustration.

B represents the axle.

C represents segments clipped to the axle, which are the rub-irons of the fifth-wheel.

C' represents the fifth-wheel ring, upon which the segments bear and travel. It is provided with spider-arms to form a center journal-support *b*. This ring is supported by a yoke-frame consisting of bar *a* and posts *c* *d*, the latter being preferably of pipe form and connected to the yoke-bar and ring by through-bolts.

E represents the central clip, which is provided with a pintle *g*, which journals in the yoke-bar *a* and serves as the lower journal of the fifth-wheel. The upper journal is formed of the bolt *h*, journaling in the ring C'. For convenience of attachment said bolt passes

through the bolster I and the bolster-bar II, and it is secured in position by a nut *l*.

L represents side springs, one arm of which is secured to the body A, and the forward end of the other arm is hinged to the shackle M. The side springs here shown have a central fulcrum-point *m*, and this is the preferred form of construction; but other forms of springs may be used in lieu thereof.

N represents a connecting-rod, which is preferably a flat torsional spring, as shown in Fig. 2. It is hinged at its rear end to the bracket O and is shown hinged at its front end to the ear P of the fifth-wheel support. As the side spring is hinged to a shackle connected to the bolster-bar, which is rigidly secured by clips *r* to the fifth-wheel and forms an extended fifth-wheel support, it is necessary that the moving arm of spring L be at all times in nearly parallel plane with the spring or rod N, so as to avoid any tendency to tip or twist the fifth-wheel support, and the fifth-wheel ring must be maintained at all times in a nearly horizontal plane, the parts L and N being designed to move in a parallel plane the same as the arms of a parallel rule. The length of these arms between their hinging-points must be the same. Thus the distance from the axis M to *m* of the spring is the same as the distance from the center P to *s* of the rod or spring N. Hence the parts L and N move in nearly parallel planes. It is not essential that the ear P be placed at any particular point. It might be connected to the ear shown in dotted lines *p* or *p'*; but if the lower ear is employed the bracket O would have to be correspondingly lengthened to preserve the plane of the member N. In case the ear *p'* was employed the bracket O would have to be brought forward and shortened, so that rod N would still be of the same length as before stated and parallel to the arm of the spring L.

I do not wish to limit myself to a flat or torsional spring for this purpose, as a forked rod (shown in Fig. 7) might be employed. In this case said rod must, however, journal upon a center bolt R, which will be journaled in ears P, secured to the rear post *c* of the fifth-wheel support. I have shown the said rod *t* of the forked form, but it might be a single-limbed rod, if desired. In Fig. 6 I

have shown a modification of the flat torsional rod, which consists of two parallel diverging torsional springs Q, hinged to ears P, which are secured to the post c.

5 V represents ears for attaching the thills directly to the axle. By connecting the body to the fifth-wheel support, through the medium of the side springs and the hinged member N, the fifth-wheel members are held in
10 parallel planes, and the draft may be applied to the axis instead of above the axle to the gearing, which is an important advantage.

I claim—

1. In a carriage-gear having an extended
15 fifth-wheel support, the combination of side springs L hinged to said support at their forward ends and at their rear ends attached to the carriage-body, and a connecting member hinged at its opposite ends respectively to the
20 fifth-wheel support and the carriage-body said connecting member being parallel with the side springs, and the length of said springs and connecting member between their points of attachment being equal, substantially as
25 described.

2. In a carriage-gear having an extended fifth-wheel support, the combination of side springs L secured to each side of the carriage-body and hinged to the extended support of the fifth-wheel, and a central, parallel connecting member hinged at its forward end to
30 the fifth-wheel support and at its rear end to a bracket depending from the carriage-body, the length of said springs and connecting member between their points of attachment
35 being equal, substantially as described.

3. In a carriage-gear the fifth-wheel ring secured to the bolster and to the yoke-bar a at the under side of the axle, fifth-wheel supports connecting said bar to the ring, in com-
40 bination with a connecting-rod N hinged to one of said fifth-wheel supports at one end, and at the other to a center supported upon the carriage-body, substantially as specified.

In testimony whereof I have hereunto set
45 my hand.

CHARLES A. BEHLEN.

Witnesses:

W. R. WOOD,
OLIVER B. T. KAISER.