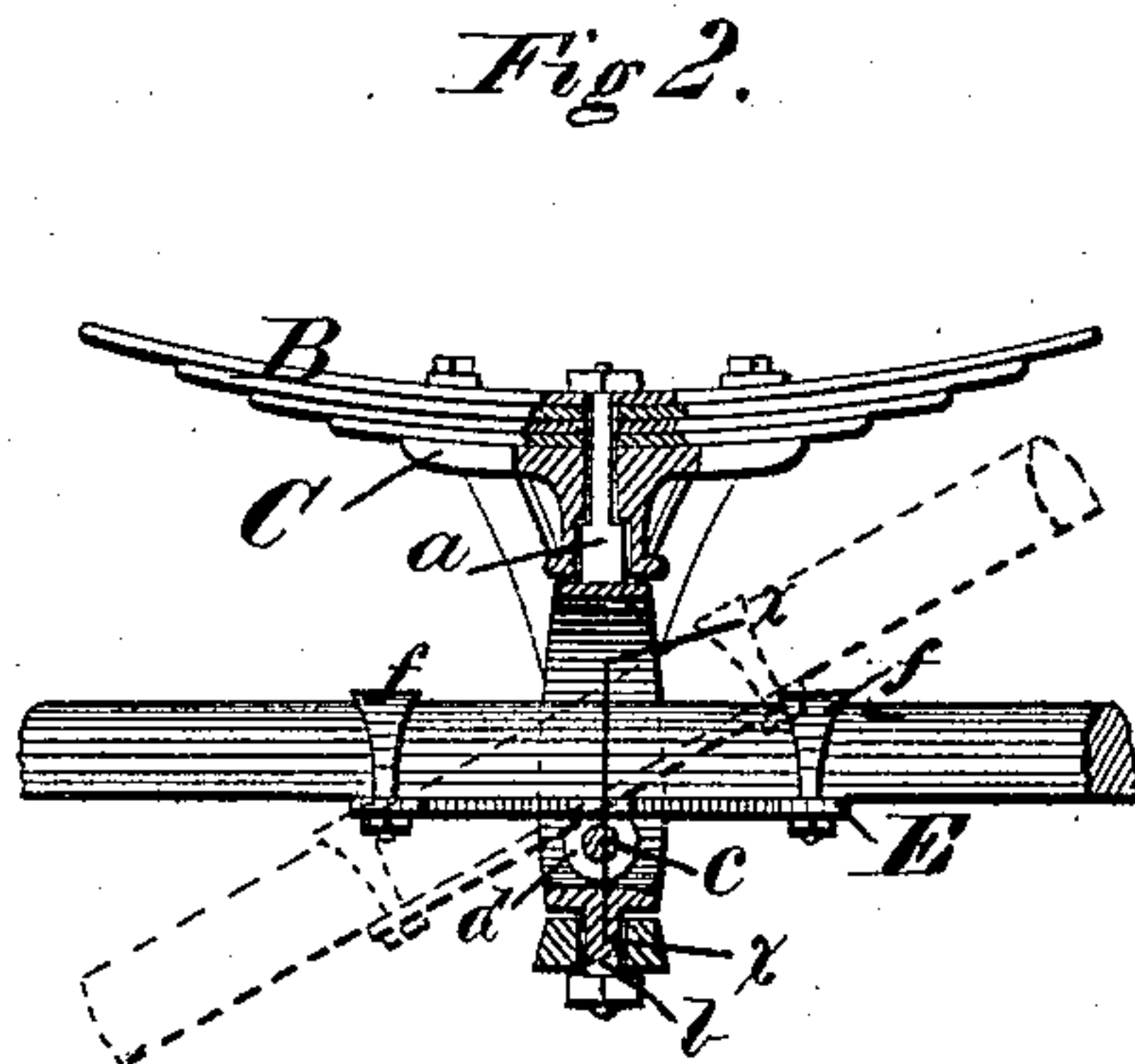
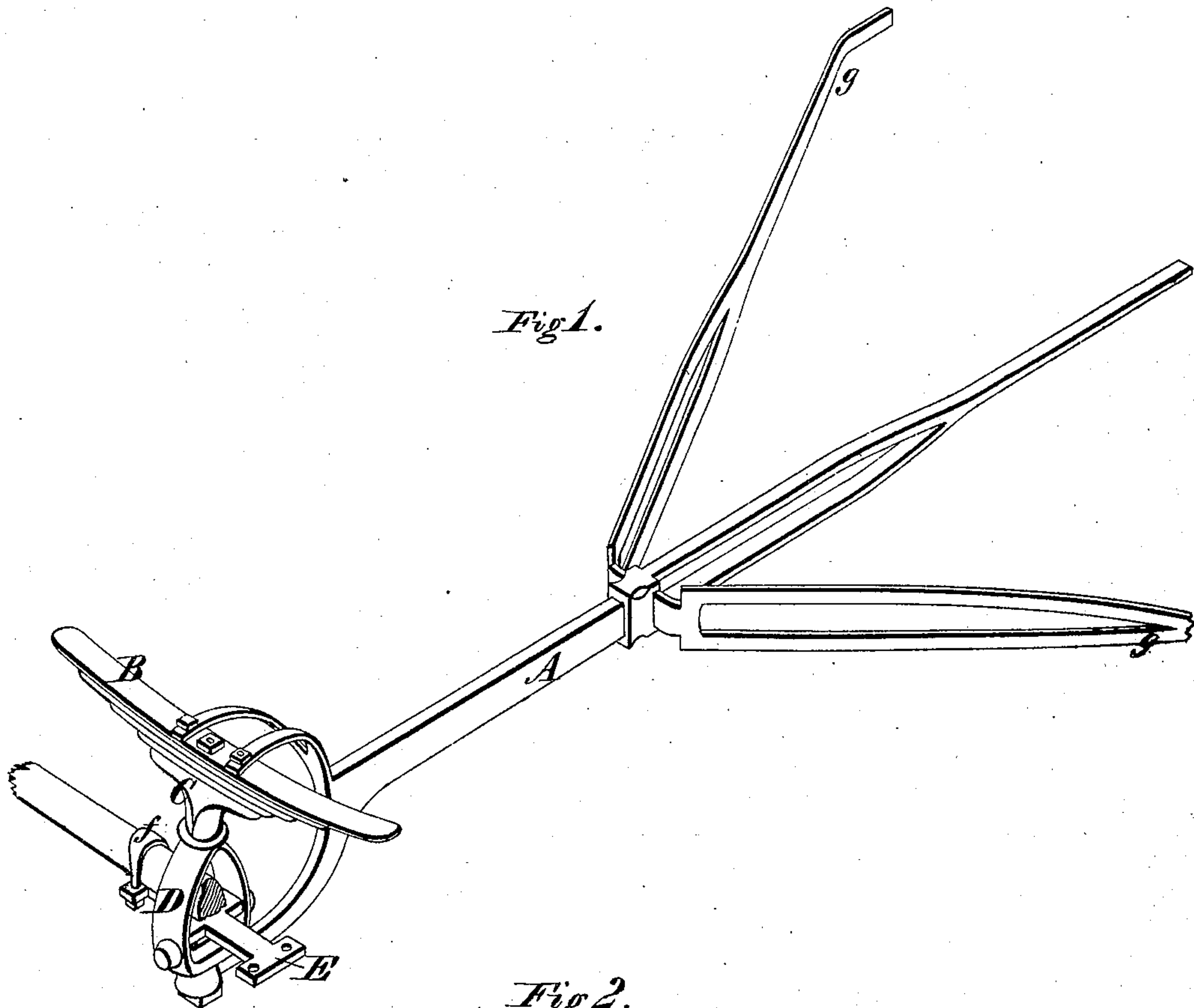


J. L. WARE.

Carriage Running-Gears.

No. 136,570.

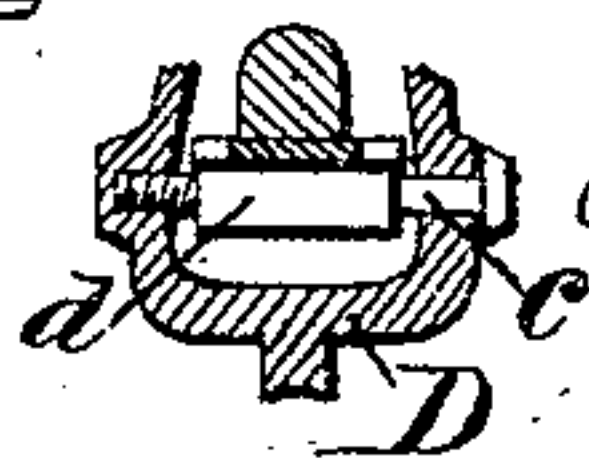
Patented March 4, 1873.



Witnesses.

Harry King.
W. H. Dodge.

Fig 3.



Inventor.

Joseph L. Ware
by Dodge & Son,
Atty

UNITED STATES PATENT OFFICE.

JOSEPH L. WARE, OF MANTORVILLE, MINNESOTA, ASSIGNOR TO SILAS E. WARE, OF WAUPUN, WISCONSIN.

IMPROVEMENT IN CARRIAGE RUNNING-GEARS.

Specification forming part of Letters Patent No. 136,570, dated March 4, 1873.

To all whom it may concern:

Be it known that I, JOSEPH L. WARE, of Mantorville, in the county of Dodge and State of Minnesota, have invented certain Improvements in Carriages, of which the following is a specification, reference being had to the accompanying drawing.

My invention consists in an improvement in gearing for vehicles whereby less friction is produced in that part heretofore known as the "fifth-wheel," and whereby the front axle is given a free vertical movement at its ends, thus obviating all strains on the gearing, as hereinafter more fully described.

Figure 1 represents a perspective view of my invention; Fig. 2, a front-end view of same with portion broken away, showing the manner of pivoting the swivel; and Fig. 3, a section of swivel and axle cut through the line *x x* of Fig. 2, showing manner of pivoting front axle.

In constructing my invention I form the front end of the reach *A* with three braces or prongs, two above and one below, which clamp or secure in their respective places the spring *B*, the spring-head *C*, and the swivel *D*, as shown in Fig. 1. The swivel *D* I make in any suitable form, the one preferred being an oval ring with a journal or trunnion, *a*, at its apex, which trunnion I continue on up through the spring-head and spring, securing it in place by means of a nut. To the lower edge or base of this swivel I also append a trunnion, *b*, which passes through a hole in the front end of the lower prong, and is also secured by means of a nut, all of which is more fully shown in Fig. 2. By means of these vertical trunnions *a* and *b* I obtain the same true horizontal motion produced by the use of the fifth-wheel. Passing through a hole in one side of swivel *D*, and screwed or bolted in the other side of same, is a pivot, *c*, which also passes through

and is secured by means of a pin to a box, *d*, on the bottom of the axle-plate *E*. This plate is rigidly secured to the front axle by means of clips *f f*, as seen in Figs. 1 and 2. To the rear end of reach *A* I secure two braces or arms, *g g*, which run or extend back and are bolted to the rear axle.

When applied to carriages or buggies it will be readily seen that my invention overcomes to a great degree that friction which is caused by the rubbing together of the two flat faces of the fifth-wheel, the trunnions or journals *a* and *b*, Fig. 2, being substituted therefor.

It will also be seen that the wrenching, twisting, and straining consequent upon one of the front wheels dropping into a rut or hollow in the road, when the old method of gearing is used, is entirely overcome in my invention by pivoting the axle to the swivel, so as to allow of a free vertical movement at either end of the axle, as seen in dotted lines in Fig. 2. This device, besides allowing a much freer movement of the front axle and wheels, is equally as cheap to make as the old style, if not more so.

I do not claim, broadly, the idea of a double joint in carriage-couplings, as such have been made heretofore; but

Having described my invention, what I claim is—

A coupling for carriages, consisting of the ring *D*, provided at opposite ends with the bolts *a b*, and having the axle passing through and pivoted in said ring, the whole being constructed and arranged to operate substantially as described.

JOSEPH L. WARE.

Witnesses:

JOHN WARE,
G. A. MILLIKEN.