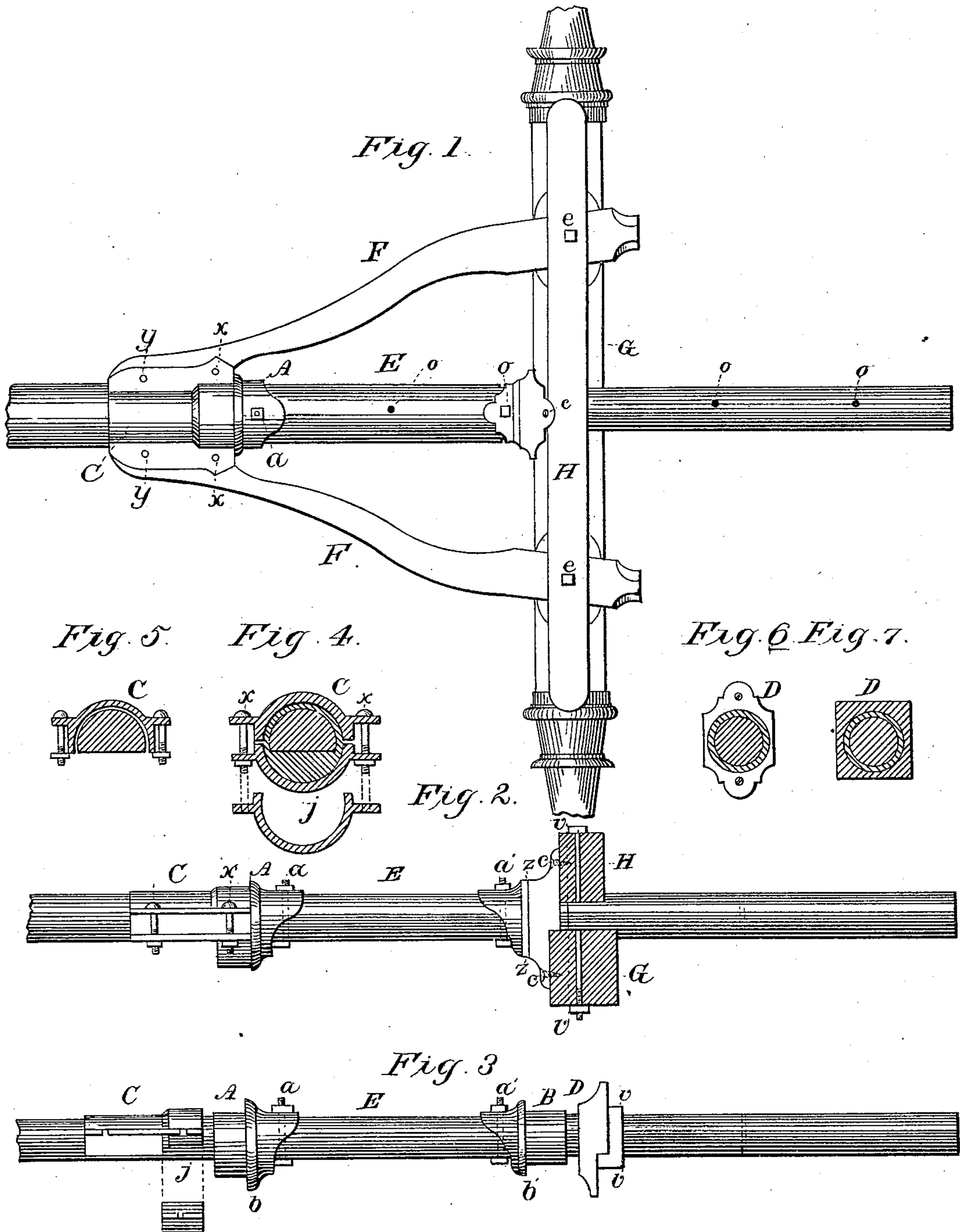


(No Model.)

M. DEEG.
WAGON REACH.

No. 275,331.

Patented Apr. 3, 1883.



Witnesses:
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WAGON-REACH.

SPECIFICATION forming part of Letters Patent No. 275,331, dated April 3, 1883.

Application filed October 16, 1882. (No model.)

To all whom it may concern:

Be it known that I, MARTIN DEEG, a citizen of the United States, residing in the city of Owatonna, county of Steele, and State of Minnesota, have invented a new and useful Improvement in Wagons, of which the following is a specification.

My invention relates to improvements in the construction of wagons and other four-wheeled vehicles and particularly to the construction of the reach; and the objects of my improvements are, first, to relieve the reach from torsional strain and both reach and reach-bolt from danger of fracture and bending therefrom; second, to separate the point of application of the strain of draft upon the reach from that of resistance to forward pressure by the hind axle and wheels; third, to protect in great measure the reach and its connections from friction and wear; and, fourth, while effecting the above objects, to combine in the reach extremes simplicity, durability, and cheapness. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of the reach, rear hounds, axle, and bolster of a wagon or other vehicle provided with my improvements; Fig. 2, a side view of reach with vertical sections of rear hound, axle, and bolster; Fig. 3, a side view of reach alone, showing sleeves or thimbles withdrawn from reach-plates and collar; Fig. 4, a cross-section of reach-plates and forward sleeve on line *x x*, Fig. 1; Fig. 5, a like section on line *y y*; Fig. 6, a cross-section of reach, collar, and hind sleeve on line *z z*, Fig. 2; Fig. 7, a cross-section of reach, collar, and hind sleeve on line *v v*.

Similar letters refer to similar parts throughout.

In the accompanying drawings, forming a part of this specification, *E E* represent the reach, preferably of even size, round above and flat below, anterior to the hind sleeve bolt *a*, Fig. 3, and somewhat smaller and entirely round in the remaining parts. It has a series of holes, *o o o*, Fig. 1, to receive the sleeve-bolts at different distances of coupling.

F F are the rear hounds, firmly bolted to the reach-plates at *x x* and *y y*, Fig. 1, also to the hind axle, *S*, at *e e* by bolts passing through the rear bolster, *H*, hound, and axle.

A and *B* are the two sleeves or thimbles, front and hind. Each is firmly bolted to the reach by a bolt, *a*, passing through a segment prolonged on the upper side for that purpose, while the lower side is cut away, and thereby forms a shoulder preventing the bolt from turning or moving in the reach, and also allowing the sleeve to be tightened upon the reach by means of the bolt *a'*. At *b* upon each sleeve is formed a shoulder passing entirely around the sleeve, which is cylindrical in form, with hole extending longitudinally through it of size and form corresponding to that of the reach at the point where it passes through the sleeve, which shoulder, when the sleeves are in place, abuts in *A* against the ends of the reach-plates *C j*, and in *B* against the end of the collar *D*. The portions of the sleeves extending from *b b'* opposite to the sleeve-bolts *a a'* enter and freely rotate within the round chambers formed by the reach-plates *C j* and the collar *D*, respectively, each of said chambers corresponding in size and length with the entrant portion of the sleeves, which may be made of sufficient length to prevent wear of all adjacent parts. The fore sleeve, *A*, is preferably thickened on the lower side, leaving the opening through which the reach passes of such form that a cross-section thereof will show the greater segment of a circle and correspond to a cross-section of the reach, as shown in Figs. 5 and 4. Sleeve *A* is also larger than the rear sleeve, *B*, as the reach is preferably smaller in its hinder portion to avoid weakening the axle and bolster *S H* where cut away to receive the collar *D* and allow reach to pass.

The reach-plates *C* and *j*, Figs. 1 to 5, are bolted together at *x x*, Figs. 1 and 4, the bolts passing also through the hounds, and holding them in place within the wings or flanges upon these plates. They also form, when in place, a hollow cylinder, through which the reach passes, whose diameter in the anterior portion is that of the reach, but in the posterior portion or chamber, which receives the sleeve *A*, is greater by the thickness of the sleeve. However, the lower reach-plate, *j*, is preferably no longer in direction of axis of reach than to form the sleeve-chamber, as shown in Figs. 2 and 3, while plate *C* extends far enough forward to receive the hound-bolts *y y*, and to give a long bearing upon the reach anterior to

sleeve A. The collar D is square without, round within, and has a projecting face, which rests against the front sides of the axle S and bolster H, and is fastened to them preferably.

5 It is made by choice only long enough to extend partly through the axle and bolster, as shown in Fig. 2, where the line *v v* marks this distance. I prefer, also, an extension of the upper face posteriorly to meet the receding
10 face of the bolster, Figs. 3 and 2.

The hounds, being firmly bolted to the reach-plates and axle, receive the strain of draft through the former, and the shoulder *b* of sleeve A transmitting this strain to the rear axle,
15 while the hind sleeve, B, receives the forward pressure, when any, by means of shoulder *b*, projecting against the collar D, and transmits the same to the reach through the sleeve-bolt *a*.

As the reach and sleeves bolted upon it rotate
20 freely within the reach-plates, attached to the hounds, and the collar, to the hind axle, it is plain that the former can be subjected to no torsional strain; also, as the sleeves may be of any desired length and receive all wear and friction
25 of the coupling, the reach is relieved therefrom, while sleeve A transmitting only the strain of draft, and sleeve B only that of holding back the hind axle, neither will wear or become loose on the reach.

30 What I claim as my invention is—

1. The combination, in a wagon, with the reach plate or plates, made to form a hollow cylinder through which the reach may freely pass,
35 of a sleeve bolted upon the reach, and extending and freely rotating within the reach-plates, a shoulder with which the sleeve is provided

abutting against the latter when the sleeve has passed sufficiently far within, substantially as and for the purposes specified.

2. The combination, in a wagon, with a collar 40 held within and resting against the hind axle and bolster, of a sleeve provided with a shoulder and bolted or fastened to the reach, extending as far as the shoulder within the collar, allowing it, together with the reach, freely 45 to rotate therein, substantially as shown.

3. In combination, a collar fastened directly upon the hind axle and bolster, a sleeve extending therein and provided with a shoulder to abut against the face of the collar, which 50 with the sleeve is provided with an unobstructed opening to allow the free passage through them of the reach, substantially as and for the purpose specified.

4. The combination, in a wagon or other vehicle, 55 with a reach-plate and hounds bolted thereto and to the hind axle, and with a collar also affixed to that axle, of two sleeves fastened to the reach, the one partially extending within the reach-plates, the other extending 60 partly within the collar, both freely rotating in their places, and each provided with a shoulder preventing reach-plate and collar from passing farther than itself along the sleeve, the reach freely passing through both reach- 65 plate and collar, substantially as and for the purpose specified.

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Witnesses:

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