C. S. MARTIN.

Carriage-Spring.

No. 56,963. Patented Aug. 7, 1866.

Fig: 1.

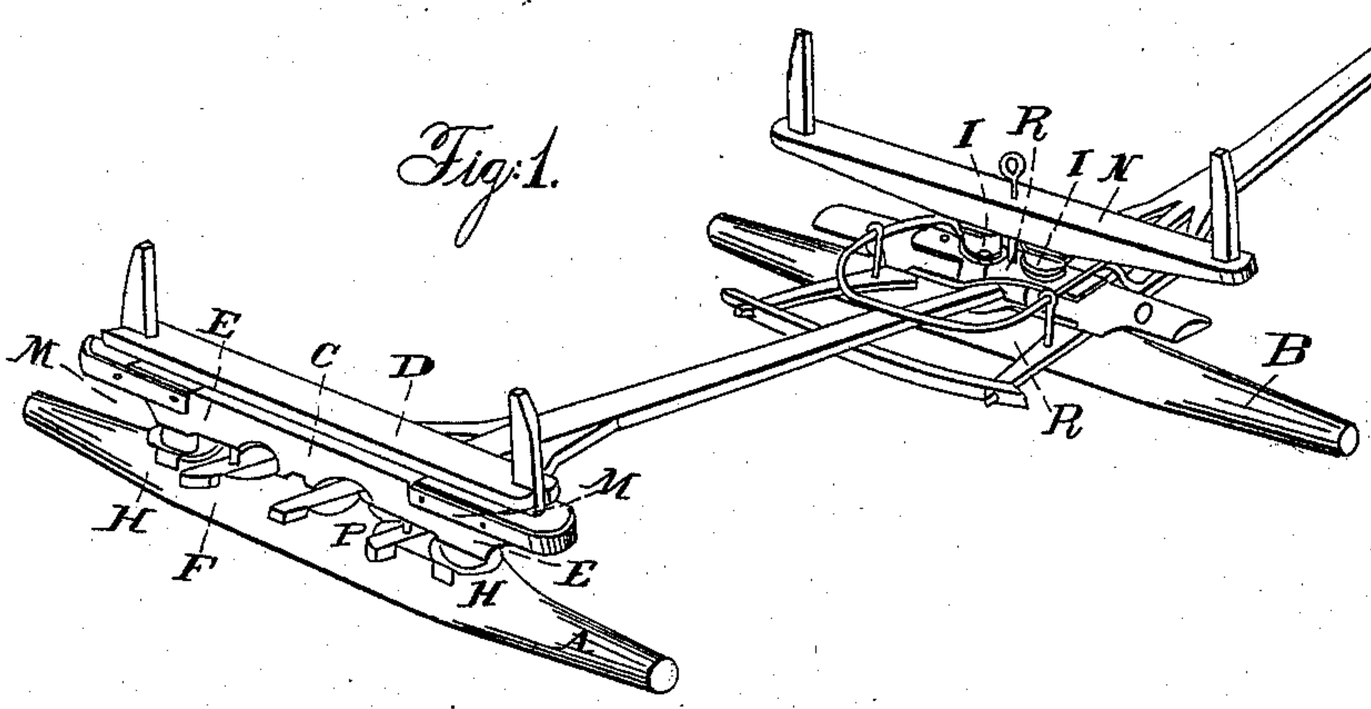


Fig: 2.

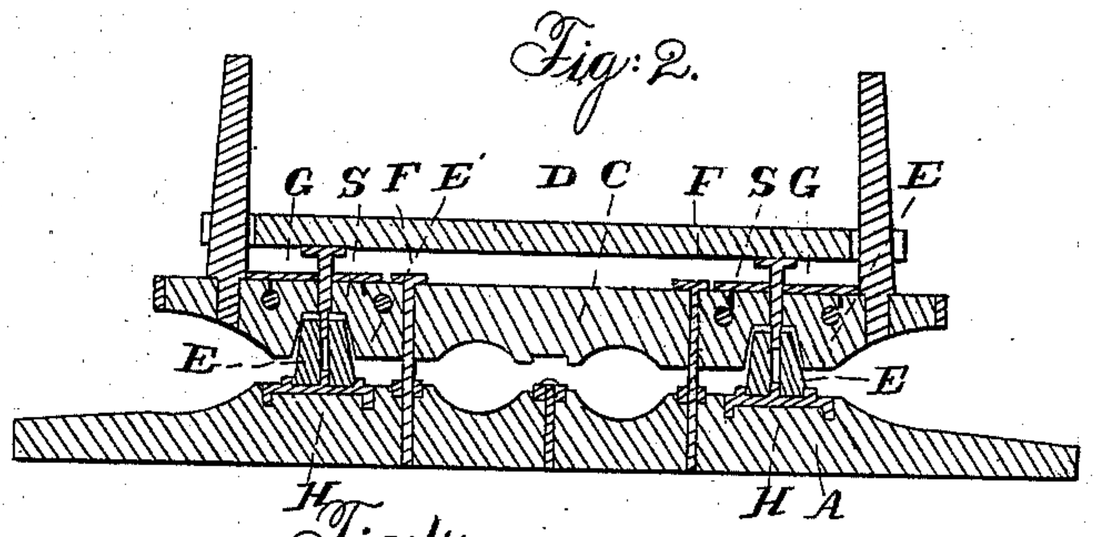


Fig: 4.

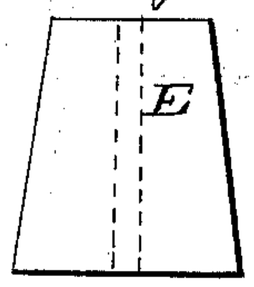


Fig: 5.

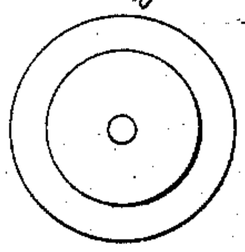
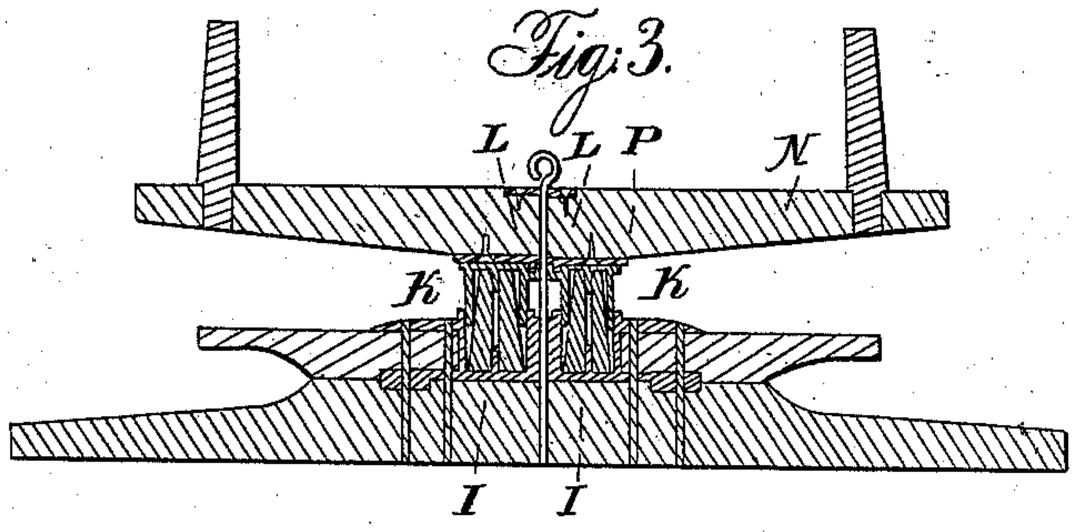


Fig: 3.



Witnesses.

R. Mason

C. F. Dawley.

Inventor.

Charles S. Martin.

UNITED STATES PATENT OFFICE.

CHARLES S. MARTIN, OF MILWAUKEE, WISCONSIN.

IMPROVEMENT IN WAGONS.

Specification forming part of Letters Patent No. **56,963,** dated August 7, 1866.

To all whom it may concern:

Be it known that I, CHARLES S. MARTIN, of Milwaukee, in the county of Milwaukee, in the State of Wisconsin, have invented certain new and useful Improvements in the Construction of Farm-Wagons; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, made part of this specification, in which—

Figure 1 is a perspective view of the running-gear of a wagon containing my improvements. Fig. 2 is a vertical longitudinal section through the middle of the hind axle. Fig. 3 is a similar section through the front axle. Fig. 4 is a section of the rubber spring; and Fig. 5 is a top view of the same.

In the different views the same letters refer to identical parts.

A is the hind axle, and C the bolster, of an ordinary farm or heavy-draft wagon. In the drawings, the draftsman has represented the bolster as raised above the axle. It is intended that it shall set upon the axle, as in ordinary cases. The bolts F F unite the two. On the top of the axle I firmly attach the plates H H, on the upper surface of which are fillets to retain the base of an india-rubber spring, E, and also a stem, which fits into a cylindrical hole through the rubber spring. A recess, E′, formed in the bolster, receives the upper end of the tapering spring. For the purpose of securing the strength of the bolster, bands M M are secured around the ends, and are carried back beyond the recess, over which is carried a plate of iron, uniting the ends of the bands and covering the top of the bolster in the vicinity of the recesses. The top of the spring is covered with a plate having a hole to correspond with that through the spring, which hole receives the point of the bar G, which rests upon the plate by a shoulder on the bar. This bar G passes through the bolster and sustains one end of the spring-bar D, which sustains the rear end of the load. The spring-bar D moves freely vertically, being controlled by the standards, which work in notches in the ends, and thus act as guides for the spring-bar.

B is the front axle, to which is attached the ordinary sand-board O. This sand-board is cut away at its middle to receive the cups I, which are rigidly united to one another and are bolted to the axle. In ordinary wagons the cups I are about fourteen inches from center to center, and are intended to give a firm bearing to the front bolster, N. These cups are formed to receive india-rubber springs, which should be made tapering, as shown. These springs are made of solid blocks of india-rubber, in the form of frusta of cones or pyramids, and spaces are left between the rubber springs and the inner surface of the cups, to allow the expansion in the diameter of the springs incident to their vertical compression. The sand-board is firmly bolted through the flange of the base of the cups I, which extends along the upper surface of the axle to the hounds and through the axle, and the ends fit snugly against the cups. Into these cups fit the caps K, also firmly united, and having in the center projections which correspond with similar projections upon the bottom of the cups, to fit into holes through the rubber springs for the purpose of keeping the same in place.

On the bottom of the bolster N is placed the bolster-plate P, which has an annular projection, L L, fitting into a corresponding depression on the upper face of the plate, which unites the cups. The bolster turns freely upon the bolster-plate, which rests upon the top plate of the cups, and this projection and depression would serve to keep the bolster on the axle, even if the king-bolt were displaced. Through the bolster, and between the cups and caps, the king-bolt passes into the axle. By means of the cups and the caps working into them the springs give elasticity to the load resting on the front bolster.

The upper and lower plates of the frame of the cups project behind, as shown at R R, and receive the front end of the reach, which is fastened by a bolt several inches in rear of the king-bolt. By this means, the strain of the load coming upon the reach behind the fore axle, the horses are relieved from the lateral action of the pole, caused, in wagons of the ordinary construction, by the wheels striking against obstructions.

Having thus fully described the nature of my improvements, what I claim as my invention, and seek to secure by Letters Patent, is—

1. In combination with the bars G, having shoulders resting upon the plates S, and the

plates S, the tapering india-rubber springs E, substantially as and for the purpose set forth.

2. Constructing the hind bolsters of a wagon with a recess, E′, for the purpose of receiving an india-rubber spring, and with or without the strengthening plates and bands M, substantially as set forth.

3. The double cups I and caps K, in combination with the india-rubber springs in the form of the frusta of cones or pyramids, the several parts being constructed and arranged for use substantially in the manner and for the purpose set forth.

4. In combination with projections upon the bolster-plate P, a corresponding depression upon the top of the plate covering the caps K, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES S. MARTIN.

Witnesses:

JOHN S. HOLLINGSHEAD,

JOHN D. BLOOR.