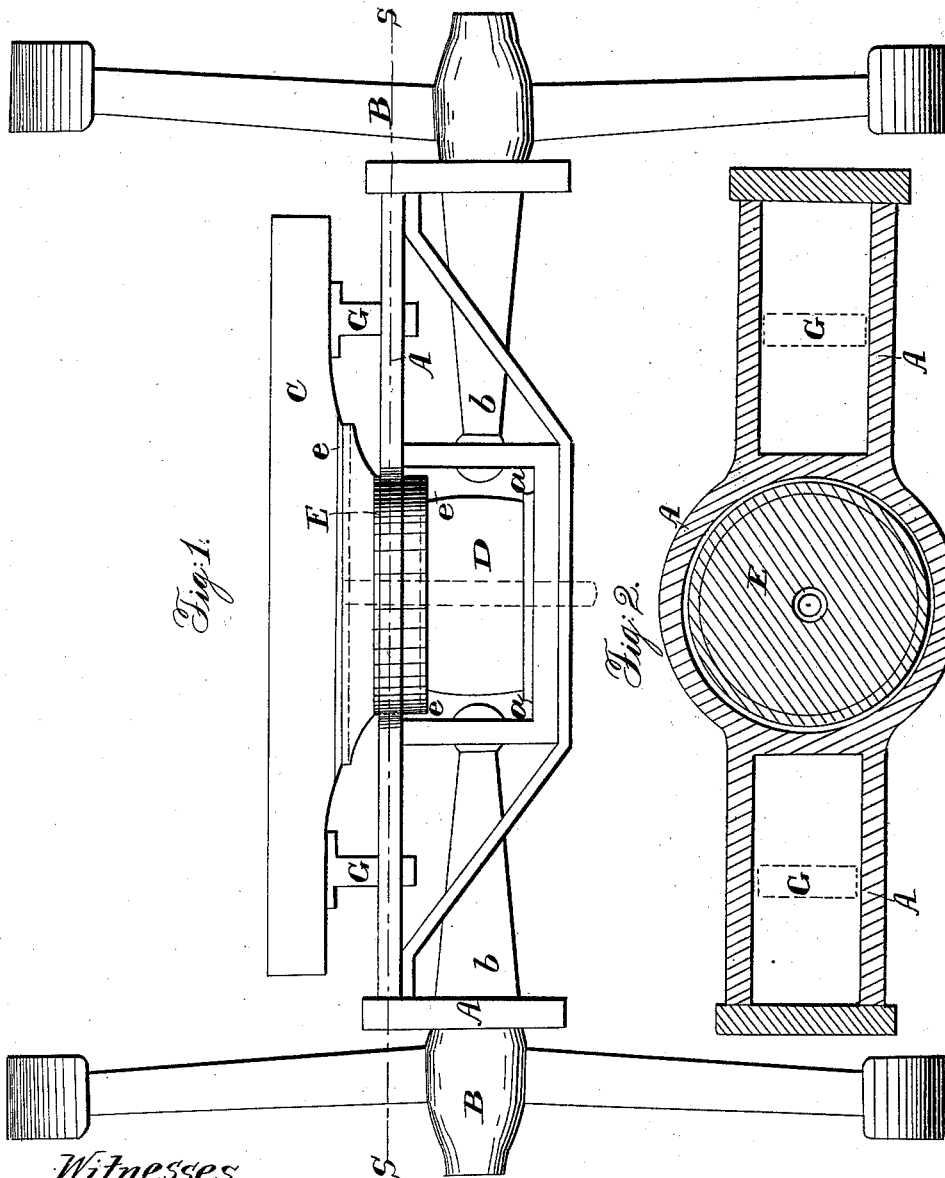


O. E. MILES.

Running-Gear.

No. 49,289

Patented Aug. 8. 1865.



Witnesses
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UNITED STATES PATENT OFFICE.

O. E. MILES, OF AURORA, ILLINOIS.

IMPROVEMENT IN VEHICLES.

Specification forming part of Letters Patent No. **49,289**, dated August 8, 1865; antedated August 7, 1865.

To all whom it may concern:

Be it known that I, O. E. MILES, of Aurora, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in the Running-Gear of Wagons; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a rear elevation of a pair of wheels. Fig. 2 is a horizontal section on the line S S in Fig. 1.

The drawings show the parts in which the novelty lies, with all the other parts which are necessary in order to understand their relation thereto.

Similar letters of reference indicate like parts in both the figures.

My invention relates to the manner in which the wagon is supported upon the running-gear through the intervention of a spring.

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

A, &c., is a truss frame-work, intended to be nearly or quite rigid, and to occupy a position like the trussed bolster described in my patent for axle dated the 5th of February, 1862, but differing therefrom in the fact that it can yield by the action of a spring, as will be explained below.

B B are the wheels, with connected arms *b b* revolving therewith, and adapted to serve in the manner described in my patent of 1862, aforesaid.

C is the body of the wagon, or rather one of the bolsters or cross-timbers thereof.

D is a cylindrical block of vulcanized rubber, standing firmly in the interior of the truss-work A. It is surrounded at the bottom by a lip, *a*, which keeps it in place.

E is a casting, through which the weight of the wagon is thrown upon the spring D. The lower edge of the casting E is provided with a lip, *e*, which encircles the upper end of the rubber spring D and prevents its displacement.

The bolster C may be free to turn around on the casting E, and may be armed with a plate, *c*, to defend it against wear. The surfaces of contact between these parts may be plane; or

they may be formed plane with a single circular lip around the rim; or they may be formed with one or more circular corrugations, or with grooves and ridges made nearly or quite rectangular in section. Either of these simple devices allows the axle and its connections to turn relatively to the wagon as is required when the device is applied to the front axle. In lieu of any of these, or in addition thereto, a stout king-bolt may descend from the wagon-body into the casting E, and the same may be extended, if desired, quite down through the spring D, as indicated in red outline.

The employment of one or more circular grooves or lips, as above suggested, may be found desirable to prevent the escape of lubricating material, and consequently to diminish the chance of any damage to the rubber by its presence.

I do not consider these devices any portion of my invention, and in adapting my invention to the rear axle no such provisions for swiveling and lubricating will be necessary. I cause the truss-work A not only to protect the spring D by partially inclosing it, but also to loosely encircle the casting E, as represented in Fig. 2. When the wagon is at rest or is moving under ordinary conditions, the casting E, with its load, is free to spring up and down, but not to yield horizontally in any direction, by the elasticity of the spring D.

I do not confine myself to the employment of rubber for the spring D, as a single or duplicate spiral or any equally compact style will serve equally well.

The advantages due to my invention may be readily appreciated.

The construction differs from that described in my 1862 patent and from all others known to me in the fact that an adequate spring is introduced and allowed to operate very efficiently without necessarily diminishing the clear height between the lower side of the truss-work and the ground or increasing the height of the wagon-body from the ground, and, in addition to both these considerations, my invention guards the wagon-body more effectually than usual against lateral motions.

The twisting of the truss A relatively to the body of the vehicle may be prevented, if desired, either by the use of the pieces G, as rep-

resented, or by making the part E rectangular and adapting the truss A thereto.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is as follows:

The spring D, in combination with the truss A, short axles *b*, and wheels B, fixed on the latter, all arranged relatively to each other and

to the other parts, E, &c., of the vehicle, substantially in the manner and for the purpose herein set forth.

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Witnesses:

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