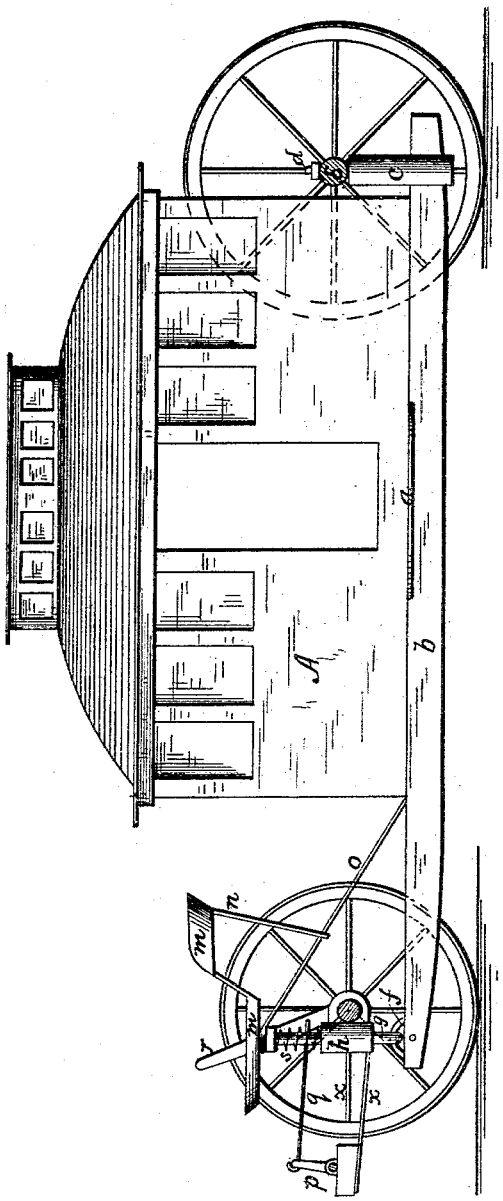
2 Sheets—Sheet 1.

M. V. NICHOLS.
Passenger-Vehicle.

No. 210,955 **Patented Dec. 17, 1878.**

Fig. 1.



WITNESSES
Frank L. Ouvaud
James H. Taylor

By

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2 Sheets—Sheet 2.

M. V. NICHOLS.

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No. 210,955. **Patented Dec. 17, 1878.**

Fig. 2.

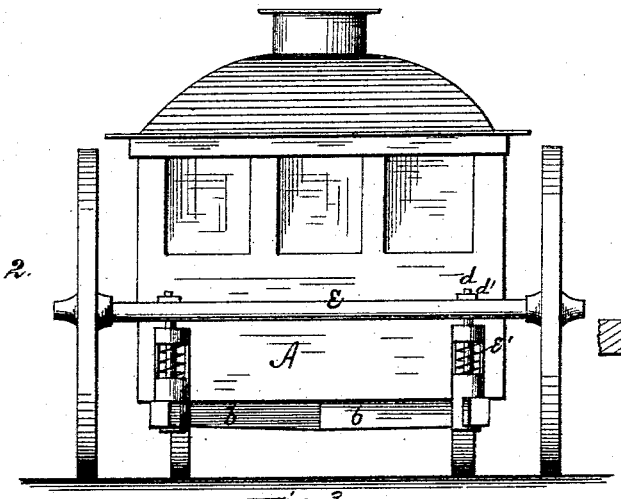


Fig. 4.

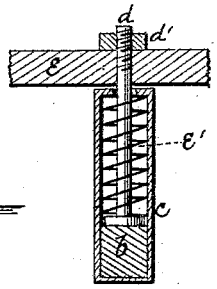


Fig. 3.

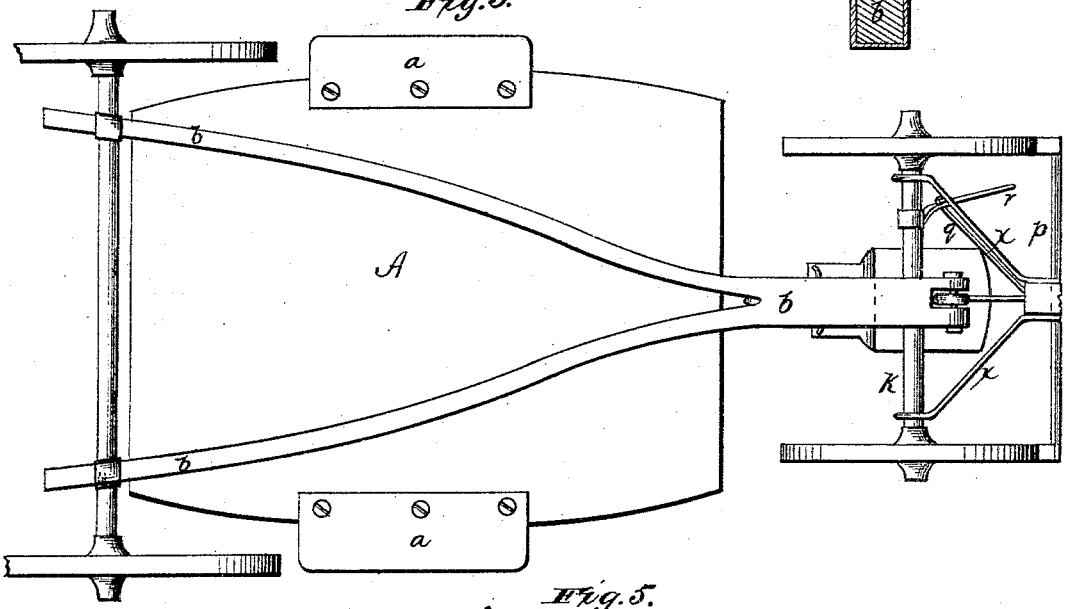
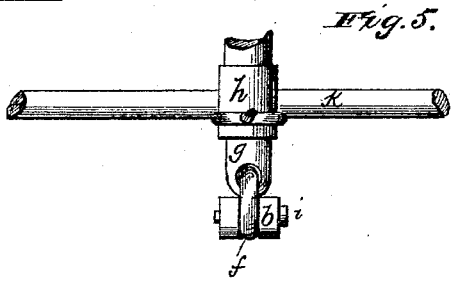


Fig. 5.



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UNITED STATES PATENT OFFICE.

MARTIN V. NICHOLS, OF OSAGE, IOWA.

IMPROVEMENT IN PASSENGER-VEHICLES.

Specification forming part of Letters Patent No. **210,955**, dated December 17, 1878; application filed April 19, 1878.

To all whom it may concern:

Be it known that I, MARTIN V. NICHOLS, of Osage, Mitchell county, State of Iowa, have invented certain new and useful Improvements in Street Passenger-Vehicles, of which the following is a specification:

The invention relates to that class of street-vehicles known as the "omnibus," and especially to those features of such vehicles which concern their easy running and accessibility for ingress and egress.

It consists, first, as a support for the carriage-body, in a Y-shaped reach, suspended under both the front and rear axles, and connected therewith by suitable rods and spiral springs; and, secondly, in a device connecting the foot of the reach with the truck of the front wheels, which, while permitting the free play of the spiral spring which supports that end of the Y-shaped reach, admits of the independent lateral play of the connecting-rod when either front wheel passes over an uneven surface.

In the drawings, Figure 1 is a side elevation of a vehicle embodying my invention. Fig. 2 is a rear elevation of the same. Fig. 3 is a bottom-plan view; and Figs. 4 and 5 are detached views of the connecting-rod and spring of the rear axle, and the joint and connecting-rod of the front axle, respectively.

The same letter of reference is used in the various figures of the drawings to indicate corresponding parts.

A is the body of the omnibus, having side doors, and the seats arranged within, on, and against each of the four sides; and *a a* are projecting steps at each entrance, to facilitate ingress and egress.

The body is mounted upon the reach *b*, (more clearly shown in Fig. 3,) which is Y-shaped, and by its two arms extends diagonally across the bottom of the body from its front, where the two arms meet, to the rear, where they span its width. This reach is suspended under each axle. Each of its arms projects behind the carriage-body, where it is suspended to the rear axle, *e*, by means of the bracket-housing *c*, spiral spring *e'*, and rod and nut *d d'*.

The two arms unite about the front of the carriage-body and form the body of the Y, which extends beyond the front, and at its end or foot is hung to the front axle, *k*. This axle is rigidly attached to a perforated sliding bracket, *h*, mounted on the rod *g*. This rod has a cap upon its upper end, and supports the driver's perch *m*. Its lower end is connected with the front end of the reach by means of the link *f*.

Between the head of rod *g* and the sliding bracket *h* a spiral spring is interposed, which is of sufficient strength to sustain the weight which will be put upon it.

The driver's perch is braced by a rod, *o*, which also encircles and keeps the upper end of the rod *g*, and is anchored in the reach, and is further secured and supported by the two vertical rods *n*, which are anchored to the rod *o*.

The brake-rod *p* has a friction-block on each end, which act simultaneously on each of the front wheels. It is operated by the brake-lever *r* and the connecting-link *q*. The brake is applied to the front wheels for greater convenience, and because in such location it will produce less strain and less wear upon the wheels. The brake is mounted upon the tongue-socket *w*, which is supported and braced by the bars *x x*.

From the foregoing description it is apparent that the entire weight of the carriage and contents will be suspended beneath the front and rear axles, and that, inasmuch as a spiral spring is interposed at each end of the arms of the Y-reach in their connection with the rear axle, there will be less motion imparted to the body of the vehicle when either of the hind wheels passes over an obstruction than there would be in any other construction or arrangement.

The front wheels and truck, by reason of the link-joint between the rod *g* and the foot of the reach, can have much freedom of movement without affecting the body of the vehicle.

Inasmuch as there will be no strain upon the body of the vehicle except its floor or platform, which rests upon the reach, it can be constructed in a very light manner of light material, and thus save much in the weight.

What I claim is—

1. In street passenger-vehicles, a body-supporting reach, in combination with the body itself, the whole being suspended underneath both the front and rear axle, and supported in

connection therewith by means of suitable springs, for the purpose set forth.

2. The Y-shaped reach *b*, in combination with the rear spring connections, *c e' d*, and the front connecting-link, *f*, and rod *g*, with the spiral spring *s* and driver's perch *m*, supported by the rod *g* and spring *s*, substantially as described.

3. The combination, in a street passenger-vehicle, of a body supported independently by a Y-shaped reach, to which it is rigidly attached, said reach being suspended under both axles by means of suitable springs, and connected by a self-adjusting link with the front support, and a driver's perch entirely detached and supported over the front axle, all substantially as and for the purposes set forth.

M. V. NICHOLS.

Witnesses:
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A. C. BRADLEY.