

J. SCHMITT.
 FORE CARRIAGE OF VEHICLES.
 APPLICATION FILED JUNE 16, 1908.

939,555.

Patented Nov. 9, 1909.
 2 SHEETS—SHEET 1.

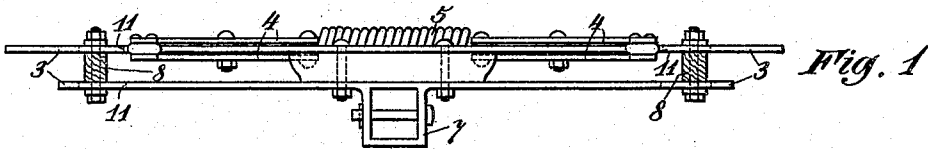


Fig. 2

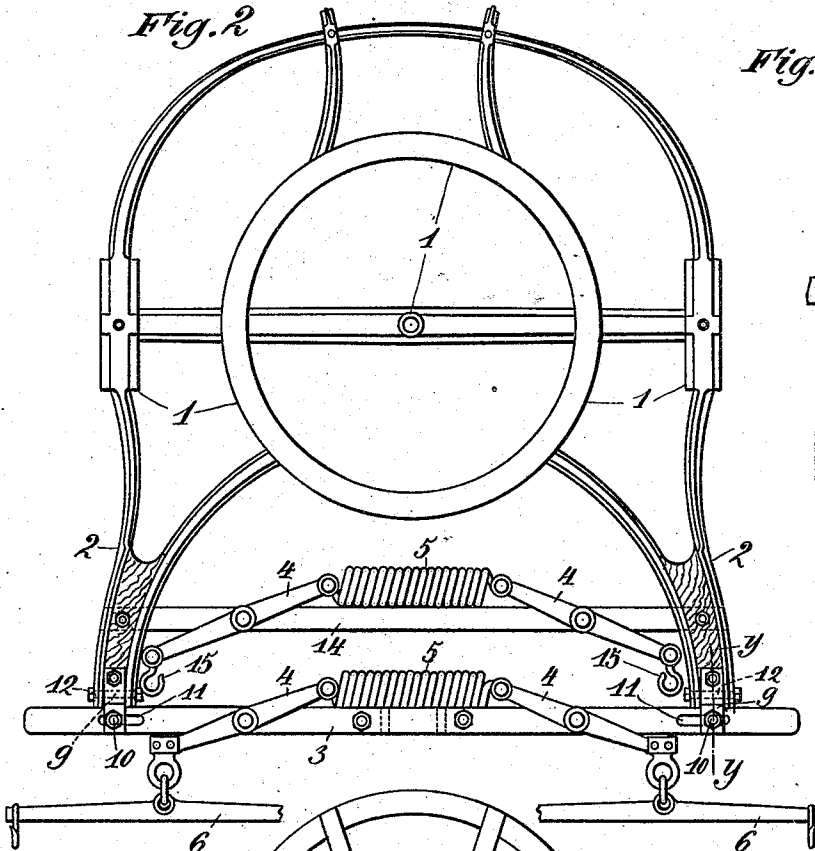


Fig. 3

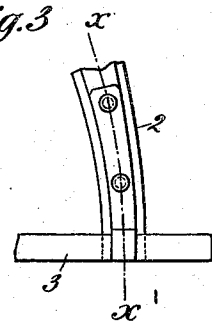


Fig. 4



Fig. 5

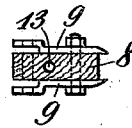


Fig. 6

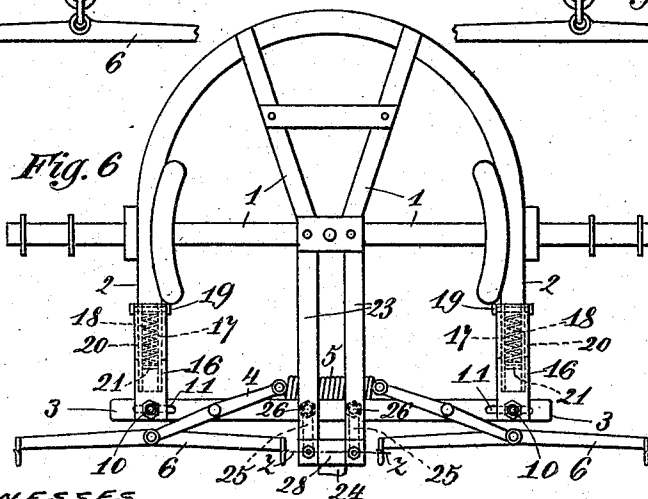
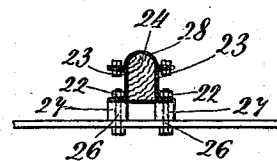


Fig. 7



WITNESSES

W. P. Burke
 W. G. Smith

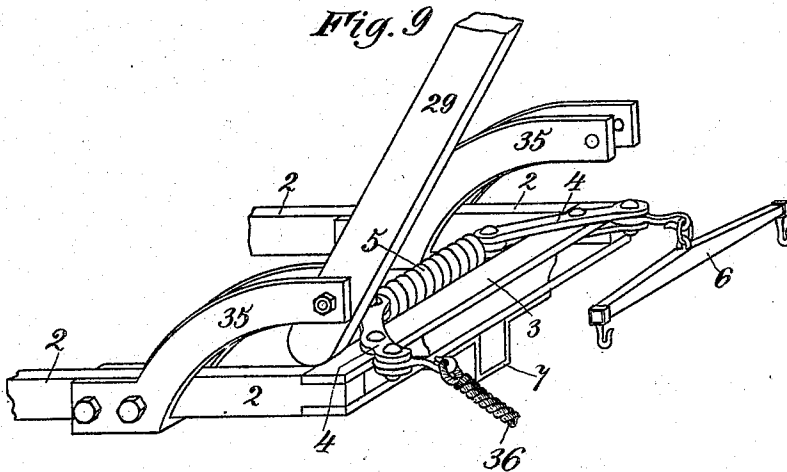
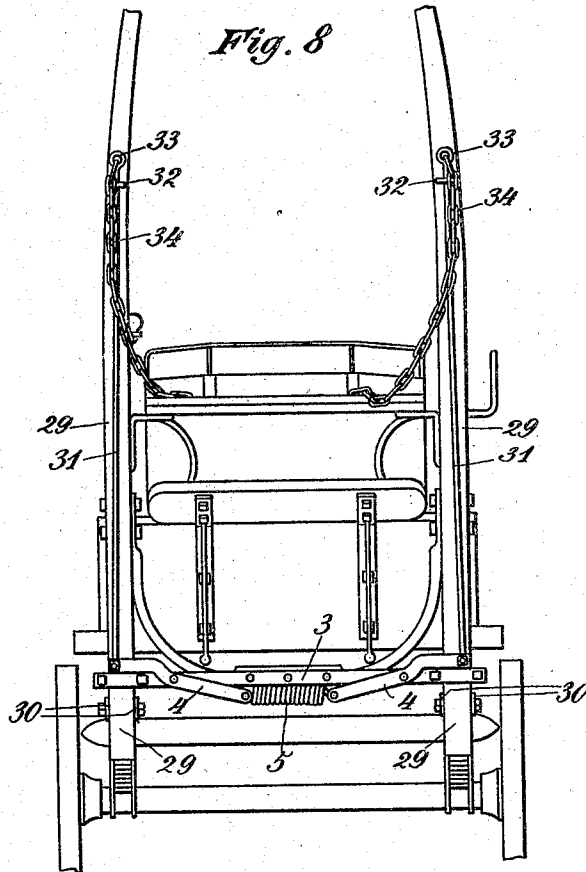
INVENTOR

Jacques Schmitt
 By M. J. McLean, Atty.

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WITNESSES
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UNITED STATES PATENT OFFICE

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FORE-CARRIAGE OF VEHICLES.

939,555.

Specification of Letters Patent.

Patented Nov. 9, 1909.

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To all whom it may concern:

Be it known that I, JACQUES SCHMITT, a citizen of the Republic of Switzerland, residing at Zurich, in the Canton of Zurich, Republic of Switzerland, (whose post-office address is No. 56 Alte Beckenhofstrasse, Zurich,) have invented certain new and useful Improvements in Fore-Carriages of Vehicles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to characters of reference marked thereon, which form a part of this specification.

The invention relates to a fore-carriage of vehicles, provided with an elastic traction-device for the purpose of regulating and balancing the irregularities of animal or mechanical traction in order to prevent, or correct the inconveniences arising therefrom.

The main object of the invention is to obtain the great advantage of connecting in a simple and practical manner the elastic device with the vehicle forming in this manner a single construction and permitting entire utilization of the whole capacity of the springs, serving at the same time to efficiently and automatically balance the unequal tractive forces.

A further object of the invention is to provide a fore-carriage comprising a cross-bar, levers linked thereto and a spring connecting these levers, and also a pair of springs damping abrupt bounding effects upon the vehicles and upon the horses or other beasts of draft, an advantage which is particularly valuable in carriages required in war.

The fore-carriage may be used for one-horse-traction or for two- or more horse-traction, furthermore for vehicles having two or four wheels.

The invention permits a considerable facilitation of traction and simplification of the harness.

The cross-bar of the traction-device may be used in connection with fore-carriages of different widths.

In the accompanying drawings, forming part of this application Figure 1 is an elevation of a cross-bar with an elastic-traction device, Fig. 2 is a plan of a fore-carriage (certain parts being omitted), Fig. 3 is a plan view of a slight modification of Fig. 1, Fig. 4 is a section on line $x-x$, Fig. 3.

Fig. 5 is an enlarged section on line $y-y$, Fig. 2, Fig. 6 is a plan of a modified fore-carriage, Fig. 7 is a section on line $z-z$, Fig. 6, Fig. 8 is an elevation of another modification and Fig. 9 is a perspective view showing still another modification.

1 (Fig. 2) is a fore-carriage of usual construction having lateral arms 2.

3 is the cross-bar for two-horse traction provided with an elastic traction device comprising lateral two armed levers, 4, connected at the ends with one or more springs 5 and supporting the swingle trees 6. The levers 4 are each composed of two plates.

7 is the thill or shaft support connected with the cross-bar 3.

A wooden block 8 provided with metallic plates 9 (Figs. 2 and 5) bolted to the block 8 is secured to each end of the cross-bar 3 by means of a screw-bolt 10. The bolts 10 pass through slots 11 of the cross-bar 3, so that the blocks 8 may be adjusted according to the variable distance between the lateral arms 2. Bolts 12 passing through holes of the blocks 8 secure the cross-bar 3 to the lateral arms 2 of the fore-carriage. Thus it will be seen that the cross bar 3 is adjustably and movably secured to the fore carriage.

If two-horse-traction is not required but only one-horse-traction, the bolts 12 will be withdrawn and the cross-bar 3 removed. A second cross-bar 14 provided with a similar elastic traction-device as above described is secured to the fore-carriage. The traces will then be attached to the hooks 15 supported by the outer ends of the levers 4. Harnessed to such a cross-bar the traction animal is in direct connection with the elastic traction device and the spring or springs operated by the action of the lateral levers adapt themselves regularly to the various degrees of resistance, and balance by more or less tension any irregularity of traction. The draft is thus protected from all inconveniences which otherwise accompany the traction of vehicles moving along an uneven road.

In the slight modification shown by Figs. 3 and 4, the cross-bar 3 for two-horse-traction having the elastic device is permanently attached to the lateral arms 2 of the fore-carriage. In this case the cross-bar 14 for one-horse-traction is omitted.

The fore-carriage shown by Fig. 6 has divided lateral arms, whereby the movable end-parts 16 may be shifted along the fixed

parts 17 of the lateral arms. Springs 18 placed in cavities of the fixed parts rest on the one hand on bolts 19 secured to the movable parts 16 and passing through slots 20 of the fixed parts 17 and on the other hand on bolts 21 secured to the parts 17. The cross-bar 3 provided with the elastic traction device is connected to the movable parts 16 of the fore-carriage. It results from this arrangement, that irregularities of the animal traction will be balanced by the spring 5, while abrupt bounding effects upon the vehicle and on the traction animals will be damped or compensated by the springs 18. The lower flanges 22 of the L shaped beams 23 between which the shaft 24 is kept have longitudinal slots 25 which permit the cross-bar 3 to move along the said beams. Bolts 26 (Fig. 7) pass through the cross-bar 3, through interposed wooden-blocks 27 and the slots 25 of the flanges 22. 28 is a cap laid upon the shaft 24 and fixed to the upper flanges of the beams 23.

In the construction shown by Fig. 8 and adapted to vehicles for one-horse-traction, the cross-beam 3 is secured to the two shaft-bars 29 which are normally held in horizontal position but which, for better illustration, are shown in the upright position. 30 are the bifurcated foremost portions of the fore-carriage to which the shaft-bars are pivoted. Rods 31 linked to the outer ends of the levers 4 run along the shaft bars 29 and are guided by rings 32 fixed to the said bars. The outer ends of the rods are provided with eyes 33, to which chains 34 are fastened, the free ends of which being arranged for the connection with the horse-collar.

Fig. 9 shows a construction suitable as well for one-horse-traction as for two-horse-traction. For this purpose curved brackets 35 are secured to the lateral arms 2 of the fore-carriage, each bracket 35 carrying a shaft-bar 29 for one-horse-traction. If the vehicle shall be drawn by one horse, the shaft-bars 29 are fixed to the brackets 35 and the traces 36 attached to the levers 4 of the tension device (see lower portion of

Fig. 9). If the vehicle shall be drawn by two horses, the shaft-bars 29 are withdrawn and swingle-trees 6 are attached to the levers 4 (see upper portion of Fig. 9). The cross-bar 3 is permanently secured to the lateral arms 2 of the fore-carriage. For the two-horse-traction a central shaft should be inserted into the thill or shaft-support 7.

The form and construction of the levers 4 and of the cross-bar 3 may also be different from those shown in the drawing, without departure from the spirit of the invention.

I am aware that it has previously been proposed to pivotally mount a double-armed lever at each end of a splinter-bar which is secured to the longitudinal beam of a vehicle and to connect one end of each lever with the traces or respective swingle-trees while their other ends are connected to each other by a spring; but as described above and hereinafter claimed my device is only intended to be used in combination with the cross-bar of a fore-carriage of a vehicle.

What I claim is:

1. In a fore-carriage, in combination, a cross-bar, substantially straight levers each of which being formed of two plates and inclined to the cross-bar to which the levers are pivoted, means attached to the levers for hanging the swingle-trees, a spring connecting the inner ends of said levers, divided lateral arms of the fore-carriage frame, springs between the parts of the lateral arms and means for securing the cross-bar to the movable parts of the lateral arms.

2. In a fore-carriage, in combination, a cross bar, means for adjustably and movably securing said cross bar to the fore carriage, a pair of levers mounted on said cross bar, a spring connecting the inner ends of said levers together, and means attached to the levers for hanging the swingle-trees.

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

JACQUES SCHMITT.

Witnesses:

HERMANN HUBER,
JOSEPH SIMON.