No. 858,108. PATENTED JUNE 25, 1907.

E. SANCHIS.

FRAME FOR AUTOMOBILES.

APPLICATION FILED JAN. 6, 1906.

5 SHEETS—SHEET 1.

Fig. 1.

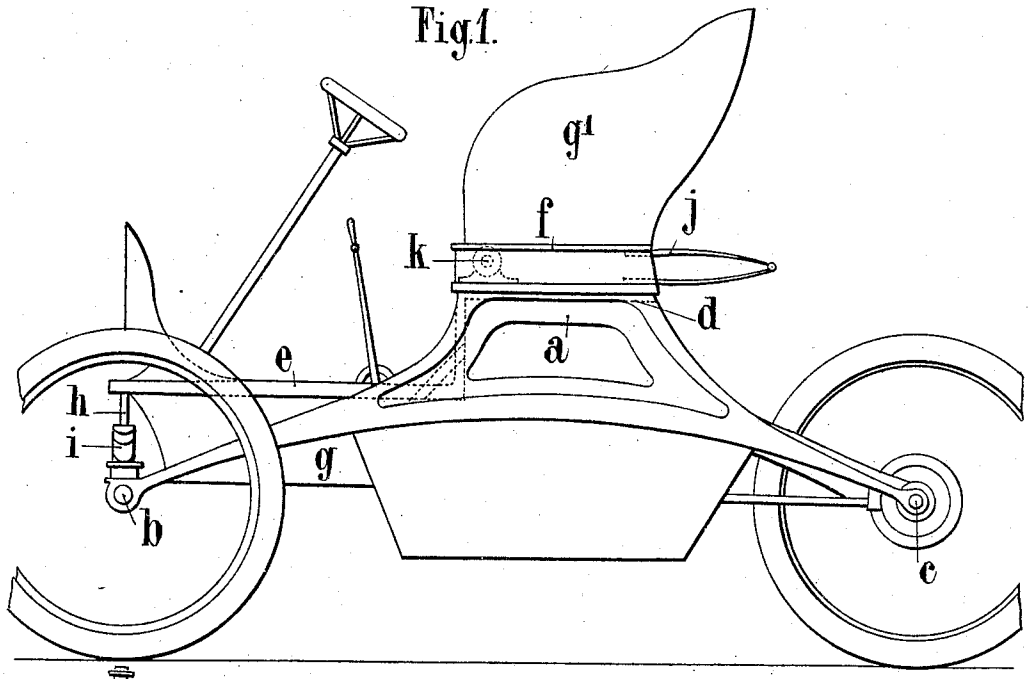
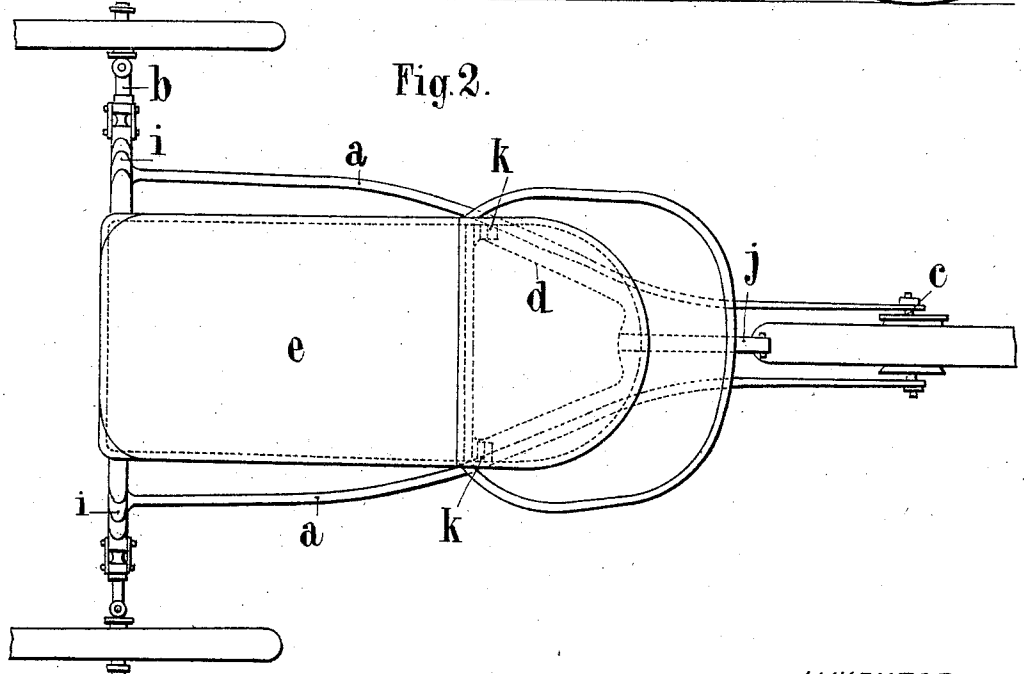


Fig. 2.



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5 SHEETS—SHEET 2.

Fig. 3.

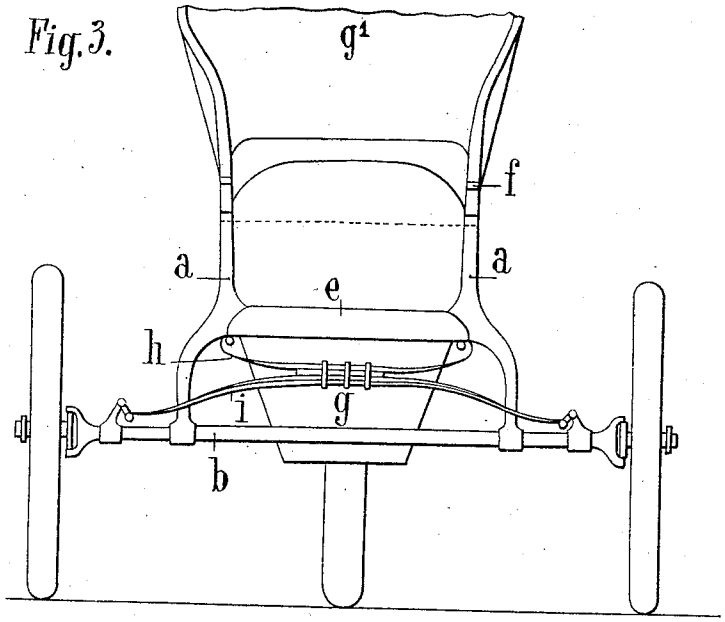
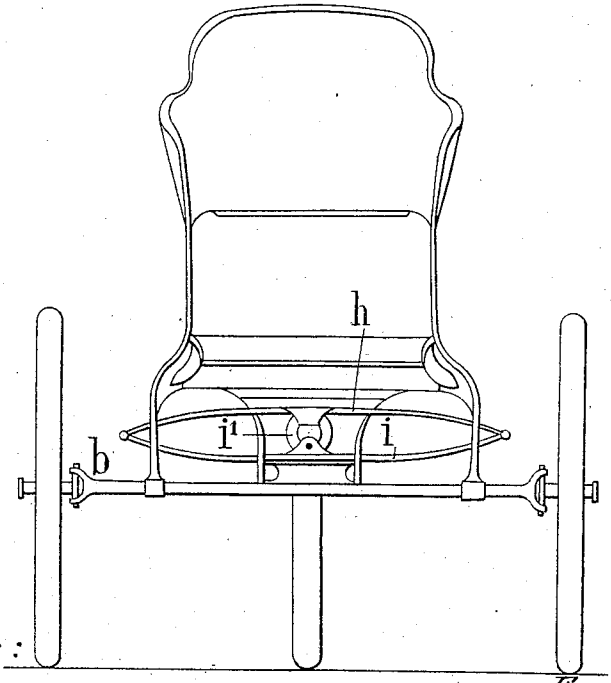


Fig. 7.



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5 SHEETS—SHEET 3.

Fig. 4.

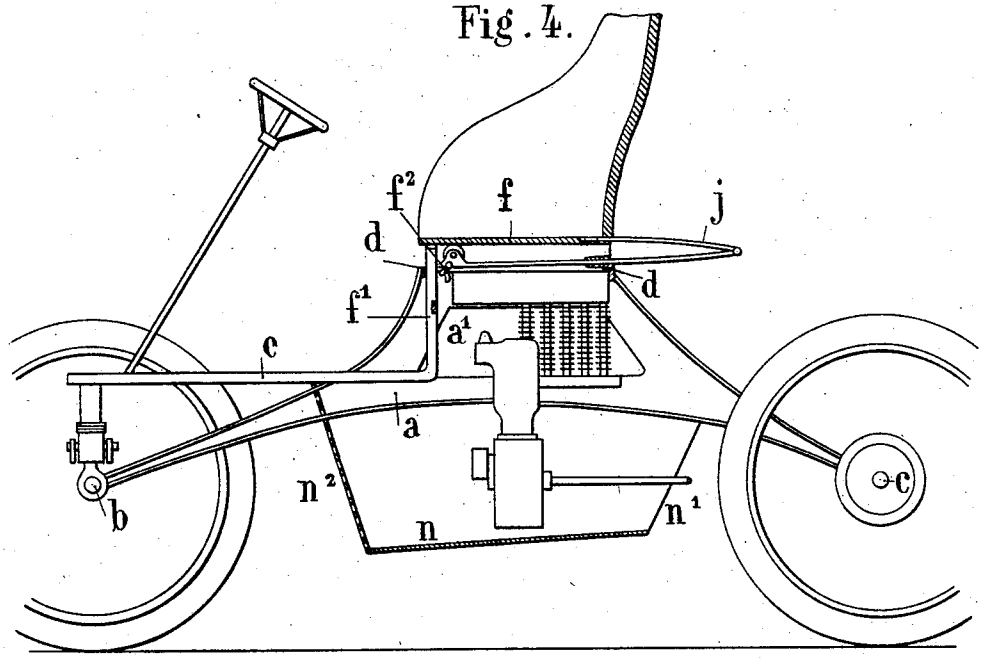


Fig. 9.

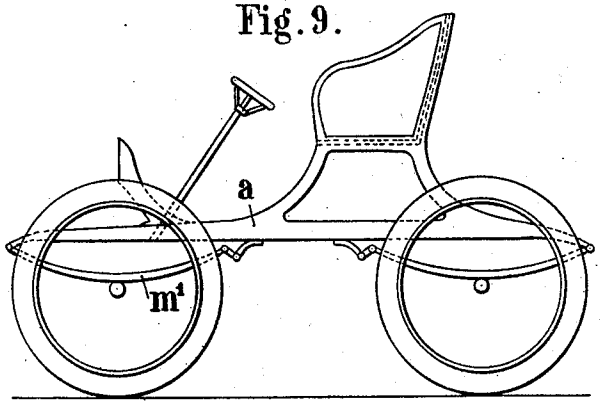
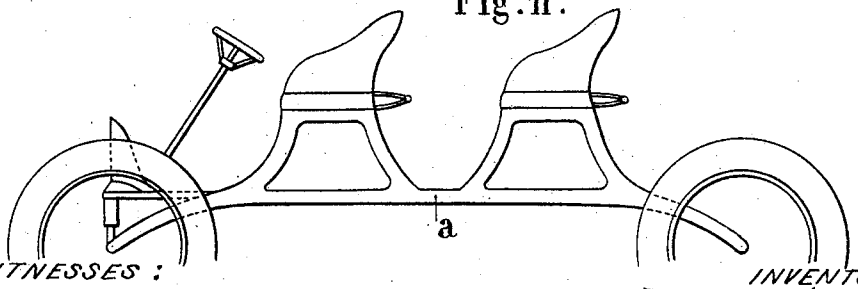


Fig. 11.



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5 SHEETS—SHEET 4.

Fig. 5.

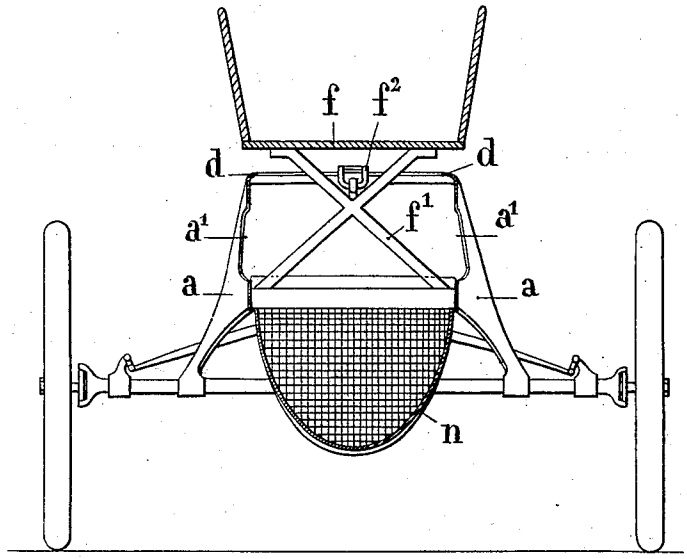


Fig. 10.

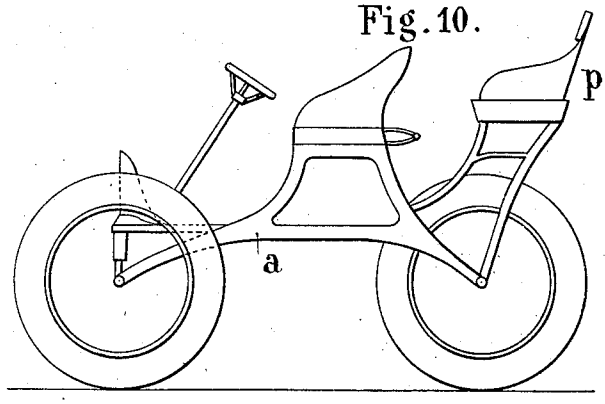
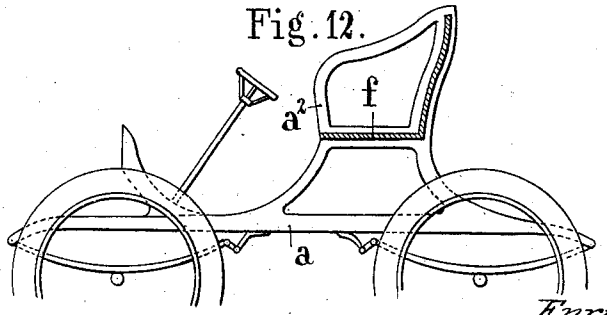


Fig. 12.



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5 SHEETS—SHEET 5.

Fig.6.

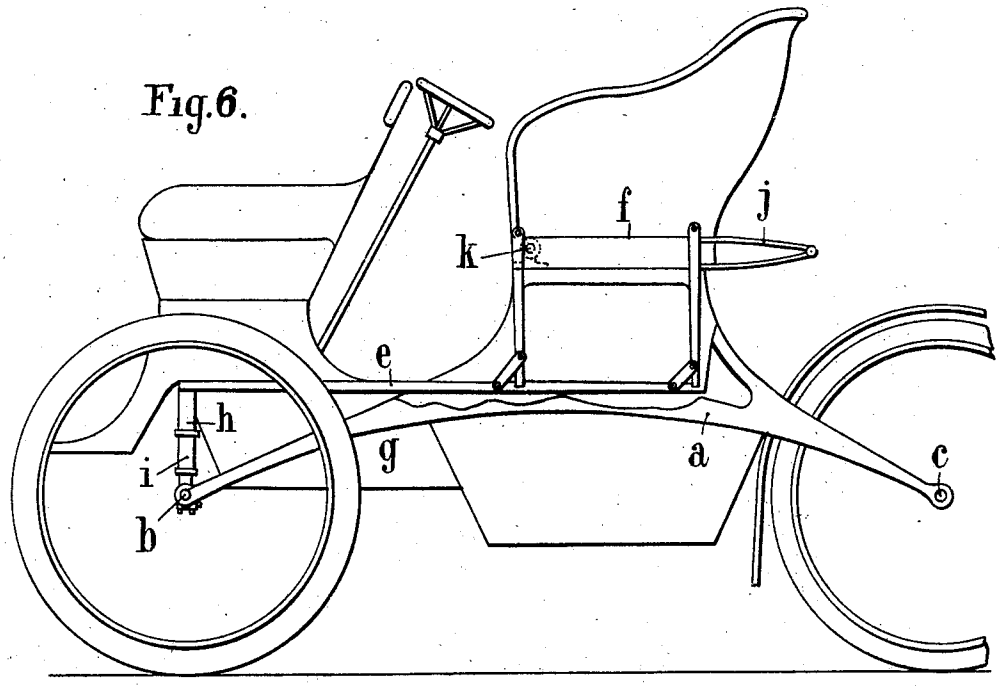
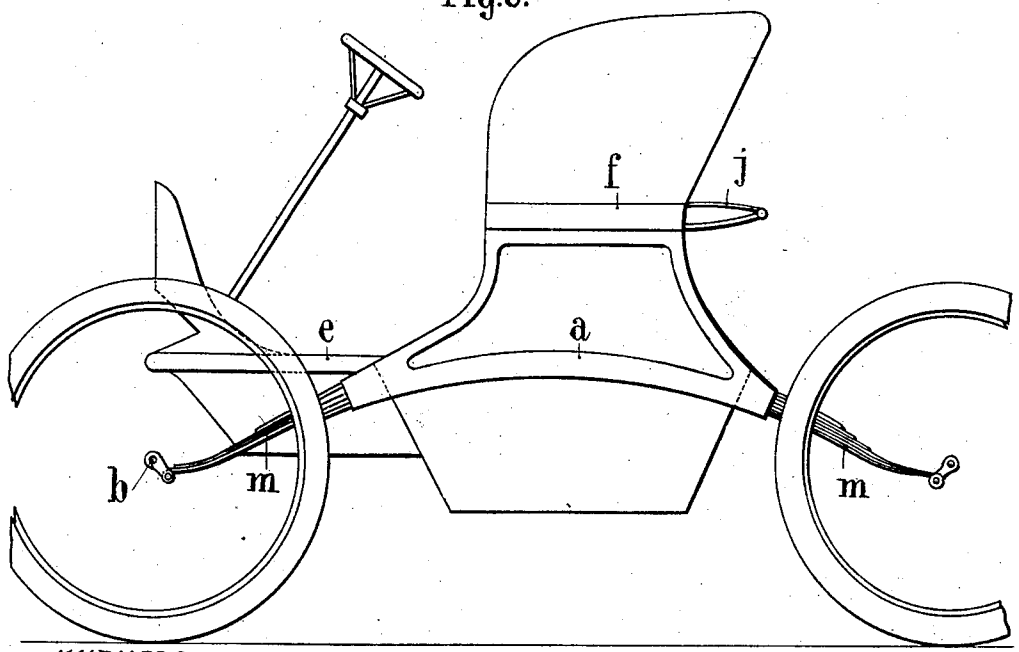


Fig.8.



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UNITED STATES PATENT OFFICE.

ENRIQUE SANCHIS, OF PARIS, FRANCE.

FRAME FOR AUTOMOBILES.

No. 858,108. Specification of Letters Patent. Patented June 25, 1907.

Application filed January 6, 1906. Serial No. 294,941.

To all whom it may concern:

Be it known that I, ENRIQUE SANCHIS, of 60 Rue Pierre Charron, in the city of Paris, Republic of France, engineer, have invented Improvements in the Frames of Automobiles, of which the following is a full, clear, and exact description.

The present invention has for its object a system of motor car with three or four wheels essentially characterized by the special construction of its frame and its method of suspension. These arrangements permit of doing away with the ordinary construction of car-body while giving to the driver's seat the form of seats used for large carriages, of suspending this seat comfortably and of bringing to the convenience of the driver all the mechanism of the control and steering gears, which can be arranged in the same manner as in a large vehicle and without diminishing the simplicity of construction of the tri-car, while giving it a definite solidity.

The invention is essentially characterized by: 1st the constitution of the principal chassis forming the properly called chassis and the body of the car. This chassis is applied directly or by the intermediation of springs upon the forward axle and the back wheel and is formed by two bars so shaped as to form the body of the car braced in the middle; 2nd by the application of a second chassis made of two parts at different levels. That lower part toward the front forms the floor of the vehicle, the other part to the rear forms a seat for the driver; this second chassis rests upon the first directly or by the intermediation of springs which are placed on the one hand under the floor and on the other hand on the underside of the seat, thereby giving to the second chassis a great elasticity and a perfect stability.

By way of example, this invention is represented in the drawings annexed in which.

Figure 1 is an elevation of a tri-car constructed according to the present invention. Fig. 2 is a plan view. Fig. 3 is a front view. Figs. 4 and 5 show respectively a longitudinal and a cross section. Figs. 6 and 7 are an elevation and a front view of a modification. Figs. 8 to 12 show other modifications.

With reference to Figs. 1 to 5 of the drawing it will be seen that the first chassis is constituted by the two side frames *a* of which the lower part is curved as shown in Fig. 1 and of which the central portion is strengthened so as to give to this frame the required rigidity and raised so as to form the car-body.

Fig. 2 shows the form which these frames present in plan arranged so as to be carried upon the extremities of the forward axle *b* and upon the axle *c* of the back wheel. In the case of a four wheeled car the two side frames are straight and parallel. These two frames *a* are connected together at their upper part by the plate *d* in the form of a trapezium apertured or not or by cross-bars in such a manner that the whole will form an absolutely rigid structure.

The second chassis presents a front part *e* forming the platform of the vehicle, and an after part *f* raised to the level of the seat and connected with the first one for example by a cross-stay f^1; the second chassis carries the motor *g* the steering and the control gear and the seat g^1 of the driver. It rests upon the first chassis through the intermediation of two sorts of springs; at the front it rests upon two laminated springs *h i*, the second set of springs being hinged to the extremities of the axle *b*. Of the other part, the rear of the upper chassis is supported upon the under chassis by means of a spring *j*. In the drawing is shown a single spring *j*, but it is evident that similar springs can be placed laterally or they may be springs of quite another form. In order to secure a better mounting of the movable chassis, the cross-stay f^1 is suspended by means of a ring f^2 from the end of the lower branch of spring *j*.

To prevent a too great flexure of the spring *j* the principal chassis *a* is provided with blocks *k* of elastic material, for example of rubber adapted to limit the downward motion of the seat. The tri-car thus constituted can be furnished with a protective cover for the motor, or with movable panels forming a covering box.

The power transmission may be made to the motor wheel either by chain or pinion gear. In this disposition as in the following the motor can be placed upon one or the other of the chassises.

In case the cooling of the motor is effected by a circulation of water, the radiating tubes can be arranged as shown in Figs. 4 and 5 on the sides of the principal frame, the two side frames *a* of the latter being each provided with an opening a^1 for the passage of air; radiating tubes can also be arranged on the rear side and even on the four sides.

The motor can be inclosed within a cover box n specially arranged provided with an outlet opening n^1 arranged at the rear and of smaller section than the inlet opening n^2 arranged at the front. Under these conditions, the speed at which the air comes out is accelerated and of course a greater cooling of the motor results therefrom.

In case of the use of radiators arranged as above specified against the recessed parts a^1 of the chassis, the cover box n would be closed at its rear part, so as to cause the air entering through the front opening n^2 to circulate around the motor, this air being allowed to escape through the lateral openings a^1 only after it has impinged against the radiating tubes.

In order to avoid any introduction of small stones and dust into the cover box n, the inlet opening n^2 will be provided with a wire gauze.

Figs. 6 and 7 show a modification of the preceding type in which the part e of the upper chassis is prolonged toward the rear so as to permit of carrying the motor, the change speed gear, and other mechanism, more easily. The suspension of the rear is made as in the preceding arrangement; the suspension of the front is a little different and is effected by two springs h i connected in the middle by a ring l^1 of elastic material such as india-rubber, which is designed to form a deadener. The upper chassis has been in this arrangement provided with two seating places.

Fig. 8 shows a further modification in which the under chassis is fixed elastically to the axles. For this purpose the extremities of the side frames are terminated by laminated springs m which are connected to the axle. This figure represents a car with four wheels provided with two chassises mounted exactly as has been above described, and this arrangement is equally applicable to tri-cars. As the under frame in this case is suspended, it is possible in this arrangement to avoid the use of the interposed springs between the two chassises. These examples show that the system of chassises and of suspension applies equally to tri-cars as to four wheeled cars and permits in one or the other, that the lower chassis may be fixed rigidly to the axle-trees, or may be connected elastically to these axle-trees, the two chassises being connected rigidly or elastically to one another, the vehicle having thus either a simple mode of suspension or equally a double mode of suspension. Of course, the principal chassis can be mounted on the axle-trees by any other method of elastic suspension for instance through straight springs m^1, as shown in Fig. 9.

Fig. 10 shows another modification characterized by the fact that the motor-car comprises a rear seat p resting on the one hand on the side-frames a of the principal chassis and on the other hand on the rear axle-tree. These arrangements, besides the advantages described herein above enable one to arrange upon the vehicles more particularly upon the tri-cars, a carriage body similar to those of large motor-cars, presenting the following advantages:—The lower frame is provided with great stability and is easy to construct, as for example in sheet iron of channel section, or in forged steel or may be in cast parts of only three pieces.

The control and steering mechanism can be placed in the ordinary way or under the seat where the space is free.

The side frames a can be of variable shapes according to the several applications and can be limited at their lower part either by straight lines, curved lines or any combinations of straight and curved lines.

In cars with four seats, the two side frames a of the principal chassis can each be formed with two higher parts, as shown in Fig. 12, which form the bodies of the two seats.

Fig. 12 shows in longitudinal section another modification in which the raised parts of the two side frames a are provided with extensions a^2 adapted to form the two sides of the seat, the seat properly called f and its back are then secured to these extensions a^2 of the side frames a; in this case, the carcass of the car is simply composed of three parts, the two side-frames a and the seat f; the two side frames a will be mounted upon the axle-trees by means of an elastic suspension.

The arrangements described are given by way of example the forms, dimensions and arrangements of detail might be varied considerably according to circumstances without modifying the principle of invention.

Claims

1. A motor car comprising a chassis composed of two frames provided in the middle with a projecting part forming the car-body and even if required the two sides of the seat, a seat mounted upon these two frames and bracing them and an elastic suspension device interposed between this chassis and the axles, substantially as described.

2. A motor car comprising a principal chassis composed of two frames so shaped as to constitute the car-body, a device bracing these two frames, a second chassis formed of two parts placed at different levels, the one serving as a floor of the car and the other as a seat, substantially as described.

3. A motor car comprising a principal chassis composed of two frames so shaped as to constitute the car-body, a device bracing these two frames, a second chassis formed of two parts placed at different levels, the one serving as a floor for the car and the other as a seat, an elastic suspension being interposed between the seat and the projecting part of the frames, substantially as described.

4. A motor car comprising a principal chassis composed of two frames so shaped as to constitute the car-body, a device bracing these two frames, a second chassis constituting the floor and the seat mounted upon the principal chassis, an elastic suspension device, a protector inclosing the motor open at both ends and provided with an outlet which is smaller than the inlet, substantially as described.

5. A motor car comprising a principal chassis composed of two frames so shaped as to constitute the car-body, recesses provided in the projecting parts of the two frames, radiating tubes arranged in front of these recesses, a cover box or protector open at the front and containing the motor and communicating with the space left between the projecting parts of the frames, substantially as described.

6. A chassis for automobiles, comprising standards, formed of a single sheet of metal indented and chased, and having at the upper edge thereof extensions for supporting the seat and other elevated parts of the carriage.

The foregoing specification of my improvements in the frames of automobiles signed by me this 21st day of December, 1905.

ENRIQUE SANCHIS.

Witnesses:
MAURICE H. PIGNET,
H. C. COXE.