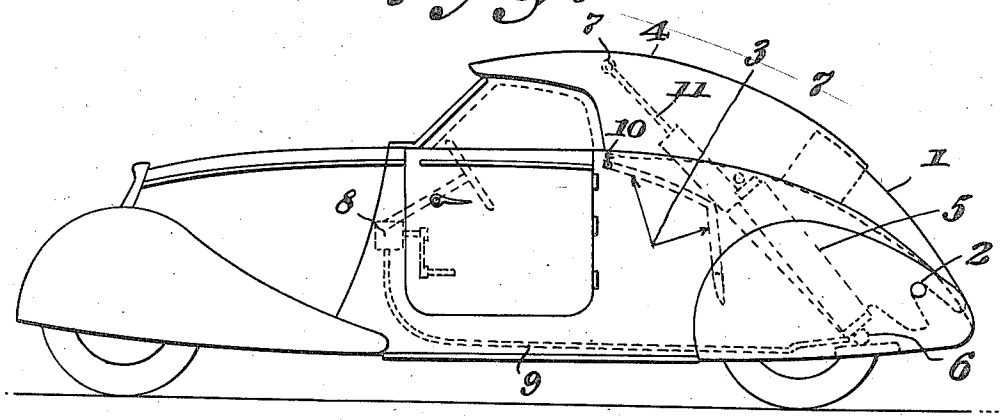
March 22, 1938. J. E. F. CAMBÉSSÉDÉS 2,111,885

AUTOMOBILE BODY WORK

Filed Dec. 6, 1935 2 Sheets-Sheet 1

Fig. 1.



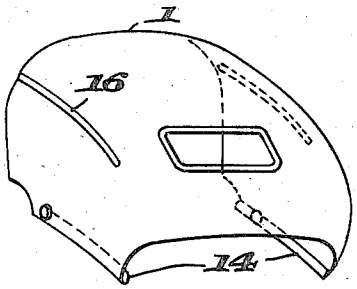
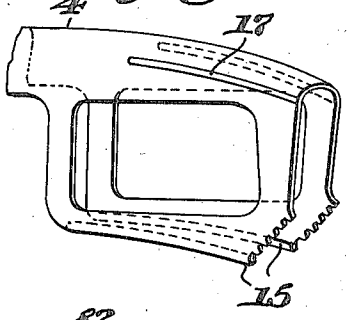


Fig. 2.

Fig. 3.



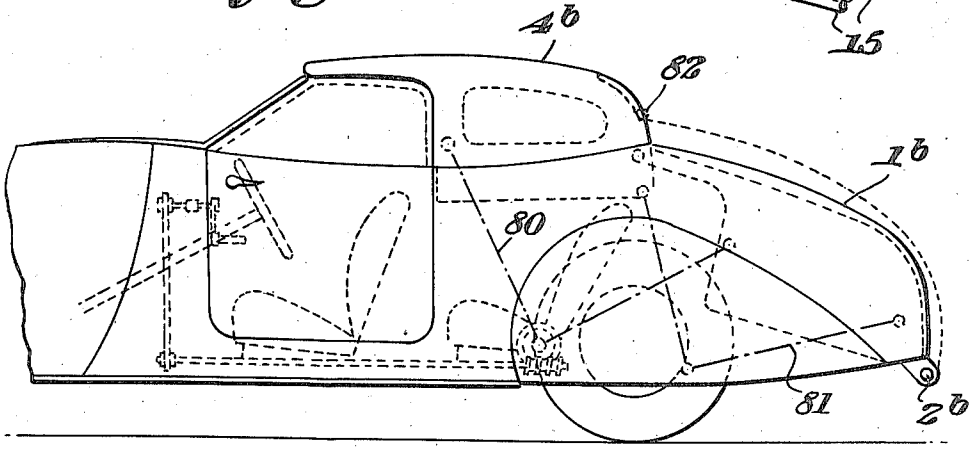


Fig. 6.

Inventor:

J. E. F. Cambessedes

By: Glascock Downing & Seebold

Attys.

March 22, 1938. J. E. F. CAMBÉSSÉDÉS 2,111,885

AUTOMOBILE BODY WORK

Filed Dec. 6, 1935 2 Sheets-Sheet 2

Fig. 4.

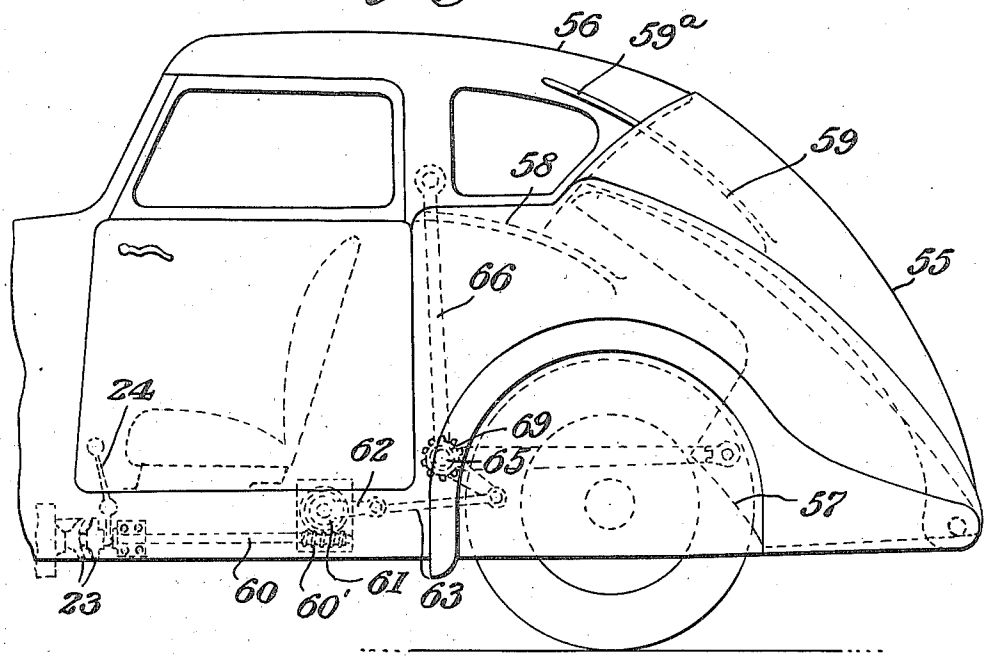
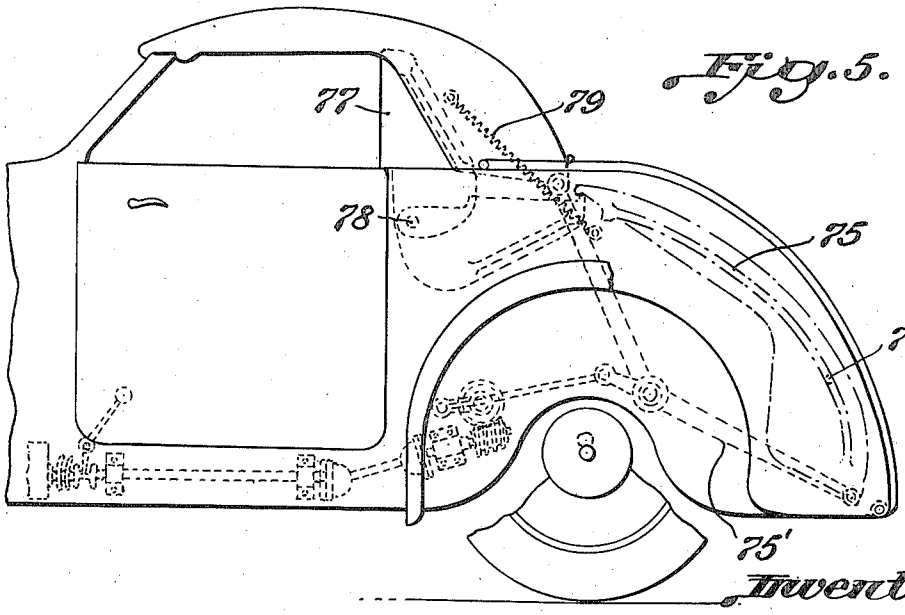


Fig. 5.



Inventor;

J. E. F. Cambessedes

By: Glascock Downing & Seebold Attys.

Patented Mar. 22, 1938 2,111,885

UNITED STATES PATENT OFFICE

2,111,885

AUTOMOBILE BODY-WORK

Jean Etienne Félix Cambéssédès, Paris, France

Application December 6, 1935, Serial No. 53,259
In Italy August 10, 1935

4 Claims. (Cl. 296—107)

This invention relates to torpedo shaped or runabout vehicle bodies which may be, as the driver desires, convertible into sedan or other patterns of closed vehicle bodies, even while the car is running at high speeds.

In accordance with the invention, certain well known parts of conventional vehicles such as rear deck or rumble seat covers with their side-walls, sliding roofs, side-window frames, are specially improved and a variable number of these parts are employed to close the body.

One of the features of this invention is to use constantly two of these members specially improved to perform in unison during the actuation. The first of these members is the lid or cover of the rear deck which is always pivoted in any suitable manner around the bottom of the rear of the car.

Another feature of the invention consists in providing a metallic roof, having the same shape as the cover, and fitted at the bottom edge of its side-walls with long slides, which are adapted to fit into and slide in corresponding grooves provided in the cover side-walls. When these parts are in inoperative or closed position, that is, with the roof member slid back over the lid or cover member, and both of these elements are resting on the rear portion of the car body to give the latter a streamline effect, suitable means connected to one or both of said elements may be actuated for slowly swinging these parts on the axle supporting the same, and at the same time moving the roof member forwardly, whereby the latter may slide forward away from the lid until its front abuts against the windshield of the car. In this position, the roof and lid will form a complete covering for the vehicle body.

In this manner, a metallic coach-work may be obtained having a rigid and streamlined shape and practically a one piece body. It is strongly fixed by the hinge at the bottom part of the rear end of the car body and on both sides by strong guide members which at the bottom of said side-walls slide in other grooves on the body of the car. Every eddy-wind is thus suppressed during the raising of the roof and cover for when these parts are being raised the air can not pass under them; and furthermore the junction of these two pieces allows in practice, the operation, if desired, of one only of these parts.

In another form of realization still having roof and cover depending one from the other, the closure for the car may consist of separate side members in the sides and doors of the car, even up to the windshield. This enables the adaptation of my invention to cars or other vehicles with multiple doors. The upper edges of these side-walls or side members, which, of course, rise together with the cover are fitted with grooves intended to receive the side edges of a sliding roof made of one sheet of canvas or rolled sheet-iron, or made of several pieces of sheet-iron characterized by the fact that they slide one on the other by means of special guide members and grooves and also in other guide grooves on the edges of the car; they must always be drawn on, either forward or backward.

Another characteristic of this invention resides in providing in cars of this type, motor-lifts which transmit to the ensemble: inter-depending cover and roof, the rising motion is at first nearly vertical, and then the lifts transmit motion in a substantially horizontal direction to the roof alone.

Two modes of bringing the closure members into action are generally used: in the models of the first series the initial motion is given to the roof alone, the cover pivoted at the back necessarily following on. In the second series the cover only receives the initial motion movement after which said movement is stopped and then by suitable mechanism the movement is transferred to the roof alone.

Other parts will be described when presenting the various forms of realization, as for example door axles serving as lifts, side pieces forced upwardly in the rising movement of the roof and lid to provide side-walls, etc.

The combination of these elements between them and according to various actuating means that might be employed will bring out various forms of car-bodies known in trade under many various names depending on whether they have two, four or multiple windows, two, four or multiple doors, or whether they will be open or closed or can be opened.

Figure 1 is a side elevation of a two door type body equipped with my improved cover and roof members.

Figure 2 is a perspective view of a portion of the cover or lid member of my invention.

Figure 3 is a side elevation of a portion of my improved roof member.

Figure 4 is a side elevation of a two door body like Fig. 1, in which the movable cover and roof are brought into motion by levers actuated by a motor and suitable gearing.

Figure 5 is a view similar to Fig. 4 but showing a further modification of my invention.

Figure 6 is a view similar to Fig. 5 but on a reduced scale and showing a further modification of the invention.

On Fig. 1 is shown a cover 1 having side walls pivoted at their lower rear edges on an axle 2 at the rear of the car, and lateral grooves 3 are provided in the fixed body of the car for a purpose hereinafter described. A roof 4 can slide on cover 1. A hydraulic lift 5, the bottom of which is pivotally mounted as shown at 6 to the body of the car, is provided with a piston 11, the head 7 of which is connected to the roof member 4. The lift 5 receives liquid from a pump 8 through a pipe 9, said pump being actuated by a motor or by hand. When the roof 4 and the cover 1 have slid one into the other, as shown in dotted lines in Fig. 1, the car body having then the form of a complete torpedo, the operator may force oil or other suitable fluid under pressure from the pump 8 to the lift 5 for the purpose of raising the parts 1 and 4 over the car body. At this time, first 1 and 4 will emerge together and then, 1 being prevented from rising beyond a predetermined position, by stoppers not shown on the drawings, the roof 4 will continue to rise alone. Such movement of the roof may be facilitated by providing small wheels 10 journalled in the lower edges of the side walls of the roof and running in grooves in the side walls on the car body. The hydraulic lifts have, of course, suitable apertures in the piston 11 for discharging the liquid therefrom, and these apertures may be connected to a suitable conduit, not shown, for bringing the liquid back to the tank pump.

As above noted, the car body is provided with grooves or channels in its side walls to accommodate the side walls of the roof and the lid when said roof and lid are slid into one another as shown in dotted lines in Figure 1. These channels, as will be obvious from the foregoing, are of a depth sufficient to accommodate the side walls of the roof and lid, so that when these parts are folded, as above indicated, the lower edges of their side walls will rest on the bottom of said channels, thereby supporting said members in closed position. When the roof and the lid are opened, as shown in full lines in Figure 1, the hydraulic lift will maintain the parts in this position, and, of course, the forward end of the roof may rest on the top of the windshield frame.

In Figures 2 and 3, I have shown details of construction of the cover 1 and roof 4, both of which have slides 14, 15, respectively, at the lower edges of their side walls adapted to engage corresponding guide grooves in the side walls of the car body. However, in the embodiment of the invention illustrated in Figure 1, the slides 14 on the cover may be eliminated, as the cover or lid 1 simply moves in a vertical direction, and does not move forward with the roof member 4. It will therefore be understood that the construction of the cover and roof members with both slides 14 and 15 thereon, applies particularly to the embodiments of the invention illustrated in the following figures rather than the embodiment shown in Figure 1. In the latter figure, however, as in the other modifications of the invention, the cover is provided with longitudinally extending guide beads 16 adapted to slide within corresponding grooves or channels 17 in the roof member, for guiding the roof relatively to the cover when these parts are moved toward open or closed position. Of course, if desired, the beads may be placed on the roof for sliding movement within grooves in the lid.

In Figure 4, the cover 55 is supporting a roof with a substantially flat top 56, the side walls of which are provided with semi-circular guide beads 57, and as soon as the roof has been raised, a predetermined distance, said semi-circular beads 57 slidably engage the semi-circular grooves 58 in the side walls of the body of the car. Non-circular grooves 59 have been provided on the cover and these grooves are adapted to receive non-circular beads 59a on the roof, said last mentioned grooves and beads serving as auxiliary guides for the cover and roof. In this embodiment of the invention, the roof member 56 is raised or lowered in the following manner. A suitable motor, not shown, drives a gear mechanism 23. The direction of rotation of this gear mechanism is controlled by a lever 24. The gear drives the shaft 60 which is provided at one end thereof with a worm gear 60', said worm gear meshing with the gear wheel 61. A connecting rod 62 fixed to the shaft of said last mentioned gear wheel is pivotally connected to a bell-crank lever 63, 64. The movement of the bell crank lever 63, 64 is transmitted to semi-axles 65 on which are keyed the two large crank shafts 66 pivotally connected to the side walls of the roof which is by that means actuated downwards or upwards. Suitable means, not shown, may be provided for limiting the movement of the roof member after the latter has reached a predetermined raised or lowered position.

In Figure 5 the roof and the cover are interdependent. The rollers 76 of the roof run in the grooves 75 in the side walls of the cover. The roof is raised from its rear end by two large levers 75' which are given a continuous upward or downward motion in the manner described in connection with the operation of levers 66 in Fig. 4. Two side plates 77, which rotate about their axes 78 are carried forward by the forward part of the roof against pressure, of the springs 79 exerting a constant downward pressure at the top of said plates 77. These plates form the closing part of the sides of the roof of the vehicle.

Figure 6 shows a modification of the device shown in Figure 5. The roof 4b is held solidly in place by two pairs of levers 80, 81, one set on each side of the car body. Each lever 80 is keyed at its lower end to semi-axles in the same manner as the lever 66 in Fig. 4, while the upper ends are pivotally connected to the front end of the side walls of the roof. These levers act to raise or lower the roof member. The second set of levers, 81, are pivoted at their lower ends to the side walls of the car body, while their upper ends are secured to the rear portions of the side walls of the roof. Thus, when the roof is lowered from the position shown in full lines to the dotted line position shown in this figure, under the cover 1b, the rear wall of the roof will abut against the upper edge 82 of the cover, causing the latter to rock on its shaft 2b. The swinging movement imparted to the levers 80 will, of course, be transmitted to the levers 81 through the roof member to which these levers are connected. The whole device may be operated at constant speed by hand or by any adequate mechanism. Suitable means, not shown, may be provided to stop the roof when fully open or shut; the lower edges of the roof being always enclosed in the sides of the car body, cannot injure the passengers.

Having now described my invention, what I

desire to secure by Letters Patent of the United States is:

1. An automobile body comprising a cover member pivotally connected at its rear lower end to the rear portion of said body, a roof member slidably connected to said cover member, and means forming a permanent part of the automobile body for swinging said cover member about its pivot and for sliding said roof member relatively to the cover member, said last mentioned means being connected to one of said members.

2. An automobile body comprising a cover member pivotally connected at its rear lower end to the rear portion of said body, a roof member slidably connected to said cover member, means connected to one of said members and said automobile body for swinging said cover member about its pivot and for sliding said roof member relatively to the cover member, and means for guiding the roof member while the latter is sliding relatively to the cover member.

3. An automobile body comprising a cover member pivotally connected at its rear lower end to the rear portion of said body, a roof member slidably connected to said cover member, means for swinging said cover member about its pivot and for sliding said roof member relatively to the cover member, means for guiding the roof member while the latter is sliding relatively to the cover member, and means arranged adjacent the driver's seat of said automobile body for controlling the operation of said cover and roof members.

4. An automobile body comprising a main body member, a cover member having its rear lower end portion pivotally connected to the rear portion of said main body member, said cover member normally projecting upwardly and forwardly from the axis where it is pivotally connected to the main body member, a roof member slidably connected to said cover member and also normally projecting upwardly and forwardly away from said axis, and means for swinging said cover member upwardly about its pivot and for sliding said roof member forwardly relatively to the cover member, said last mentioned means including elements operatively connecting the main body member to one of the other members.

JEAN ETIENNE FÉLIX CAMBÉSSÉDÉS.