

(No Model.)

F. SANFORD.
ADJUSTABLE VEHICLE SEAT.

No. 461,525.

Patented Oct. 20, 1891.

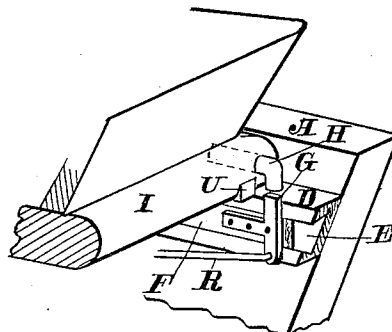
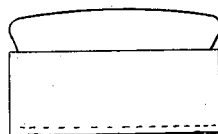
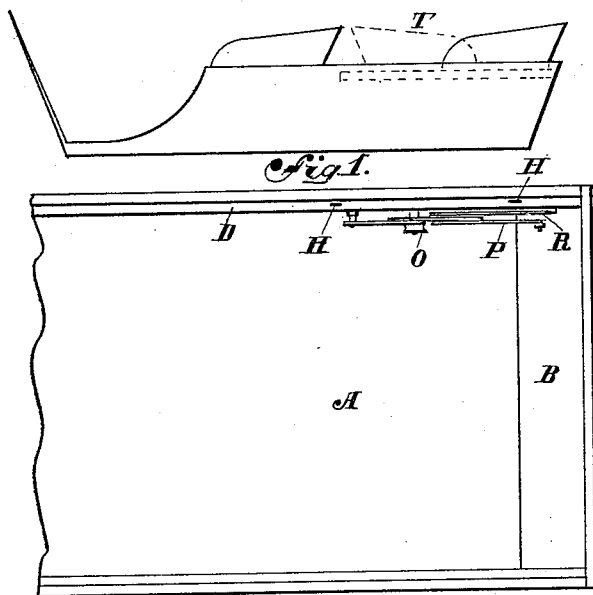


Fig. 3.

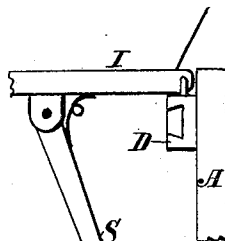
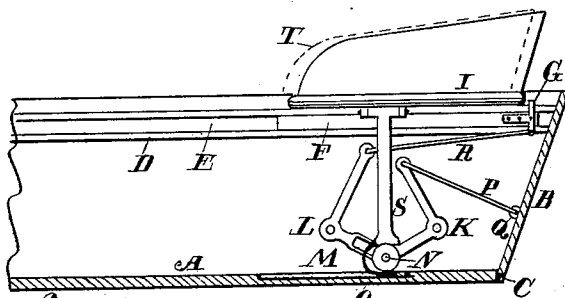
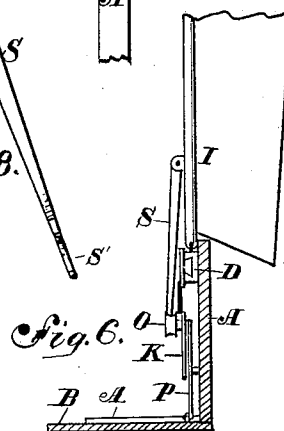
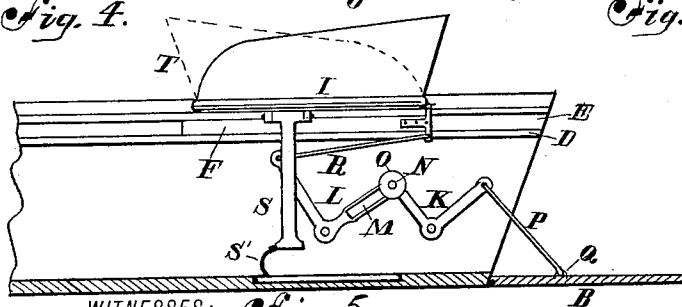


Fig. 4.

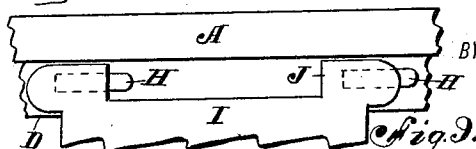
Fig. 8.



WITNESSES: Fig. 5.

Fig. 6.

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ADJUSTABLE VEHICLE-SEAT.

SPECIFICATION forming part of Letters Patent No. 461,525, dated October 20, 1891.

Application filed July 20, 1891. Serial No. 400,119. (No model.)

To all whom it may concern:

Be it known that I, FRANK SANFORD, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Adjustable Vehicle-Seats, of which the following is a specification.

The object of the present invention is to construct a cheap, simple, durable, and easily-operated adjustable seat for vehicles.

In certain kinds of vehicles it is impossible, owing to the construction of the body and location of the seats, to so arrange the rear seat as to readily enable the person to enter the vehicle without stepping over the seats.

My present invention provides for hinging the rear seat at one end, so that the opposite end will swing upwardly, and the hinged end of the seat is connected by a system of bell-crank levers and rods with the tail-board of the body, which swings downwardly, so that when the tail-board is turned down the seat swings upwardly, enabling persons to enter the vehicle from the rear, and then after stepping to the front of the seat the seat can be turned down, and in doing so the tail-board will again swing up into position and close the body. In addition to this prime feature of my invention I also provide a means for moving the seat forwardly by the action of the tail-board, instead of swinging the same, provided it is desired, to turn the rear seat around with the back to the driver, and to accomplish this I make the hinges of the seat detachable, so that a small forward movement of the seat entirely disconnects the hinges and the action of the movement of the tail-board is wholly transferred to moving the seat forward, all of which will now be set forth in detail.

In the drawings, Figure 1 is a side view of a body equipped with my adjustable seat; Fig. 2, a view of the rear end; Fig. 3, a top view enlarged of the rear end of a body with the seats removed; Fig. 4, a vertical longitudinal section of the body, showing the seat in position; Fig. 5, same view showing the tail-board down and the seat moved forward; Fig. 6, a view of portion of the rear end, showing tail-

board down and the seat swung up to a vertical position; Fig. 7, an enlarged perspective view of one side of the body and corner of the seat; Fig. 8, a rear view enlarged of the seat and arm for raising the same, and Fig. 9 a top view in section of portion of the end of the seat to show manner of hinging the same.

In constructing my invention I use the same form and shape of body A now employed by carriage-makers; but instead of having a rigid end I provide a swinging tail-board B, which is hinged to the floor of the body, as shown at C, so that it will swing down to a horizontal position. On the inner faces of the side walls of the body, near their upper edges, I secure strips D, on which the rear seat slides. The strip D, on the right-hand side preferably has therein a dovetailed groove E, in which is placed a sliding dovetailed strip F, and on the rear end of this strip is a T-shaped stop G; one end of which projects slightly above the upper edge of the strip D, while its lower end has an eye. In the upper edge of the strip or cleat D are two hinges composed of the right-angled pieces H, which project forwardly parallel with the strip D. The bottom of the seat I has two projecting ears J, which rest on the grooved cleat, each ear having a hole into which the hinge-piece H enters when the seat is moved back. When the seat is back in the positions indicated in Figs. 4, 7, and 9, it will swing upwardly on the hinge-pieces H; but, if desired, the seat can be moved forward, thus disengaging it from the hinges, permitting the seat to be removed or to be governed by the action of the sliding dovetailed strip F and the stop G thereon, through the mechanism which will now be described.

On the side wall of the body below the grooved strip I hinge two bell-crank levers K, one directly to the rear of the other and oppositely disposed, with the horizontally-projecting limbs secured together, as shown in Figs. 4 and 5. The lower limb of the bell-crank lever L is slotted, as shown at M, and the pin N on the end of the corresponding limb of the lever K passes through this slot and has on its outer end a grooved pulley or

sheave O. The upwardly-projecting limb of the lever K has an eye, from which a rod P extends back to and is hinged to the tail-board B at Q. The corresponding limb of the lever L has at its upper end an eye, from which a rod R extends back, and is attached to the stop G, heretofore referred to.

The under side of the seat at a suitable distance from its hinged end has an arm S hinged thereto and projecting down, and the lower end has a crank S' projecting rearwardly, so that when the tail-board is raised up and the seat is moved back to its farthest limit the crotch on the lower end of this arm S will embrace the grooved pulley O.

The parts having been described in detail, I will now set forth their operations. When the seat is in engagement with its hinges H and the crotch S' of the arm S is on the sheave O, the action of swinging the tail-board downward causes the sheave O to rise, thereby swinging the seat upwardly to the position shown in Fig. 6. If, however, it is desired to merely move the seat forward to the position shown in Fig. 5 without elevating the seat, the seat is first moved forward by hand to the position indicated by dotted lines T, Fig. 4, and in doing so the lower end of the arm moves from its position over the sheave O, so that when the joined limbs of the bell-crank levers move upwardly the sheave does not engage with the crotch S', but instead thereof the upwardly-projecting stop G on the strip F moves forward the seat. It will be observed by reference to Fig. 7 that when the seat is drawn back to its extreme limit the rear edge of the bottom does not engage with the stop G, but the latter is some distance from the edge. The object of this is to provide a clearance for the stop G during the initial movement of the tail-board. The moment the tail-board begins to swing downwardly the sheave O moves up, causing the seat to swing on its hinges, and by the time the stop G reaches the edge of the seat indicated by the contact-piece U, Fig. 7, the seat is elevated at a sufficient angle to bring the central piece above the range of the stop, and the sliding strip and stop can thus move forward without producing any effect on the seat. However, whenever the seat is first disengaged from its hinges, so as to remove the arm S from the region of the sheave O, the motion of the tail-board is transferred to the seat through the strip F and stop G.

It is obvious that instead of the connecting-rods P R chains, cords, or other equivalent mechanism may be employed without departing from the spirit of my invention.

The rear seat, instead of being used wholly in the position shown in Fig. 1, may be reversed, as indicated by the dotted lines T, and the construction herein for moving back or swinging the seat provides for doing this with the greatest facility.

The same mechanism or its equivalent, or suitable connections from the rear seat, may be employed for the front seat, if desired, as it is well adapted for the purpose; but the details of such construction need not be pointed out in this invention.

It will thus be seen that the invention performs various important functions—namely, it is not permanently attached to the body, but can be readily removed. It can be reversed and used with the same mechanism, and the operation of the tail-board swings the seat upwardly out of the way or it moves the seat forwardly, so that persons can readily enter the vehicle or alight from it, and the whole is constructed of a few number of parts, can be readily attached to a body, and is cheap and substantial.

What I claim as new is—

1. A vehicle-body having a reversible and sliding seat hinged at one end to swing upwardly and connected with a downwardly-swinging tail-board, substantially as herein set forth.

2. A rear vehicle-seat hinged at one end to swing upwardly, in combination with a downwardly-swinging tail-board, said seat and tail-board being connected, so that the tail-board will rise up into position by the downward movement of the seat, substantially as set forth.

3. A vehicle-seat hinged at one end to swing upwardly and having beneath said seat at a suitable distance from the seat-hinges a downwardly-projecting hinged arm, in combination with a downwardly-swinging tail-board, a bell-crank lever intermediate between the seat and the tail-board, having on one limb a pulley or sheave to engage with the hinged arm of the seat, and the other limb of the bell-crank lever having a connecting-rod attached to the tail-board, substantially as set forth.

4. A vehicle-seat adapted to slide back and forth in suitable cleats, with a sliding strip in one of said cleats having a stop therein, in combination with a swinging tail-board, and intermediate between the sliding strip and tail-board a pair of bell-crank levers, with their corresponding links engaging each other and their other limbs having connecting-rods, which are attached to the sliding strip and tail-board, respectively, substantially as set forth.

5. A vehicle-seat adapted to slide back and forth on cleats, a downwardly-projecting arm hinged on the under side, hinges at one end of the seat and a sliding strip beneath the seat, provided with a stop behind the seat, combined with a downwardly-swinging tail-board, and intermediate between the seat and tail-board a pair of oppositely-disposed bell-crank levers having their lower limbs engaging with each other and provided with a pulley to engage with the hinged arm of the seat, and connecting-rods attached to the upper

limbs of the bell-crank levers and hinged to the sliding strip and tail-board, respectively, substantially as set forth.

5 6. A vehicle-body having in combination therewith a seat movable to and fro from rear to front and reversible and provided with connecting and disconnecting hinges at one end, and a downwardly-swinging tail-board attached to said seat, substantially as set forth.

Signed at Brooklyn, in the county of Kings 10
and State of New York, this 17th day of July,
A. D. 1891.

FRANK SANFORD.

Witnesses:

LEVI C. STRONG,
JNO. W. SCHOONMAKER.