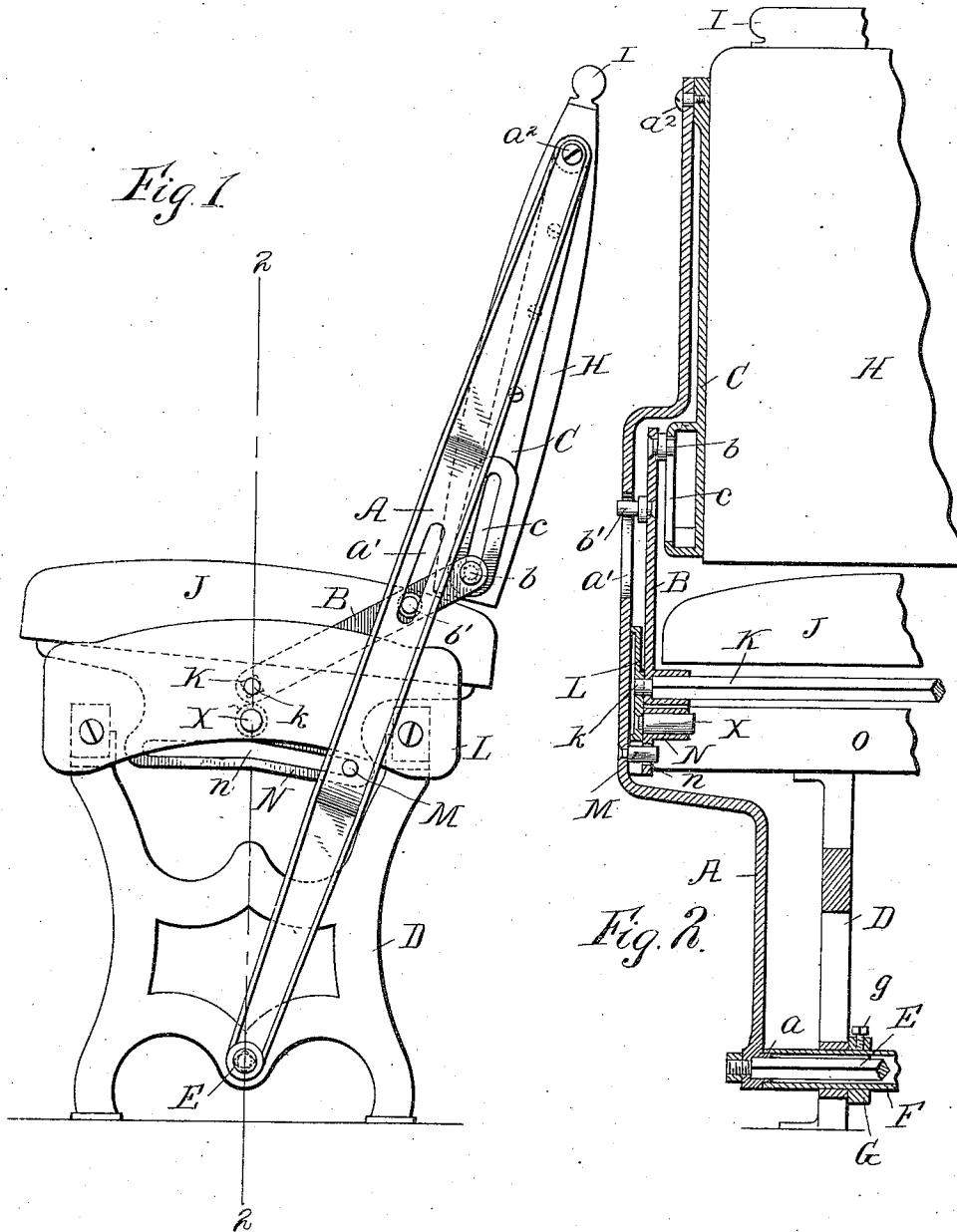


No. 853,245.

PATENTED MAY 14, 1907.

P. M. KLING.
WALK OVER CAR SEAT.
APPLICATION FILED MAR. 23, 1904.



Witnesses
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UNITED STATES PATENT OFFICE.

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WALK-OVER CAR-SEAT.

No. 853,245.

Specification of Letters Patent.

Patented May 14, 1907.

Application filed March 23, 1904. Serial No. 199,567.

To all whom it may concern:

Be it known that I, PETER M. KLING, a citizen of the United States, and a resident of Elizabeth, in the county of Union and State of New Jersey, have invented a new and useful Improvement in Walk-Over Car-Seats, of which the following is a specification.

The subject of my invention is a car seat constructed with a walkover back carried at each end on two levers of different lengths, the longer lever being pivoted by its lower end to the supporting frame of the seat near the bottom thereof, and at its upper end to the back near the upper edge of the latter; and the shorter lever being pivoted by its lower end to the end frame near the top thereof, and by its upper end to the back near the lower edge of the latter. The pivot-connection of the upper end of one of the levers (preferably the shorter one) with the back is through the medium of a vertical slot which in conjunction with a stud and slot connection between the two levers at their point of intersection imparts the proper inclination to the reversible back.

The supporting frame consists of a pair of cast legs which are adjustably secured, as to distance asunder, upon a horizontal connecting sleeve. Mounted on the top of these legs are a pair of horizontal bars, which may be of wood, to the ends of which are secured cast end plates providing bearings on which the seat cushion frame is supported pivotally to permit it to tilt with the reversing movement of the back.

In the accompanying drawings, Figure 1 is an end view of a walkover seat, illustrating the invention. Fig. 2 is a vertical section of the same on the line 2—2, Fig. 1, showing the back midway between its two positions of use.

A represents one of the long levers which are rigidly secured, at bottom to the ends of a square rod or rock shaft E inclosed in a steel tube F which serves also as a foot rest. The levers A at the respective ends of the seat are each formed at bottom with an inwardly projecting collar *a*, fitting within the end of the tube F. The collars *a* constitute pivots on which said levers turn in the revers-

ing movement of the back and as the said levers A are rigidly connected together by the rod E they are compelled to move together.

The seat-support consists of a pair of legs D formed near the lower end with a hole to receive and support the tube F and thereby support the arms A. The outer leg D shown in Fig. 2 is set at a considerable distance inward from the end of the seat, to afford room for trap-doors in the floor of the car and for other purposes and the lower part of the outer lever A is bent inward beneath the seat as illustrated in Fig. 2.

G represents a movable set collar on the tube F, which after the leg D has been adjusted in position, is fixed by a set screw *g* to prevent relative movement between the tube and the leg. Bars O which may be of wood, are mounted on the top of the cast legs D and to the ends of these bars O, are fixed cast end plates L constituting the upper member of the fixed seat frame. At the mid length of each end plate L near its lower edge is fixed a stud X projecting inward and forming a pivot-support for the tilting, cushion-supporting frame or plate N.

J represents the seat cushion.

The tilting of the seat is effected by a stud M projecting inward from the face of the respective levers A and working in a slot *n* near the lower edge of the plate N, so that in each movement of the levers A to reverse the back the seat will be tilted so as to raise its front edge.

H represents the back proper upholstered on both faces as usual with "walkover" backs. On each end of the back is mounted a plate C, preferably of cast metal, to the upper end of which the upper end of the respective long levers A are pivoted at *a*².

The shorter levers B are rigidly mounted at their lower ends on a square rod K compelling said levers to oscillate in unison, the said rod being formed at its ends with projecting studs *k* pivoted in the fixed plate L. The short levers B carry at their upper ends rigid studs *b* working in vertical slots *c* in the respective back-end castings C and a little lower down outwardly projecting studs *b'* working in slots *a'* in the respective longer levers A.

I represents the top finish of the back which serves the purpose of a hand-hold in shifting the back and also for the use of passengers in walking or standing in the aisle.

5 I have deemed it necessary to show in the drawing only the outer end portion of the seat for the reason that the operating parts at the inner end are of similar construction excepting that it is not necessary that the lower
10 end of the long lever A shall be bent inward under the inner end seat as shown at the outer end in Fig. 2, or to the same extent.

It will be manifest that the crossing of the back-supporting levers A and B and the pin
15 and slot connections between said levers and between one of them and the back-end C causes the reversible back to assume the proper angle of inclination in either position and the same effect would be produced if the
20 long lever A carried a stud working in a slot in the short lever instead of vice versa: also that the short lever B might be pivoted directly to the back and the slot *c* located near the upper end of the casting C, to receive a
25 stud at the upper end of the lever A.

If preferred the inner end of the seat may rest on a supporting leg of any common and suitable form instead of an adjustable leg D
30 such as herein shown. The structure may also be varied in other details, without departing from the essential features of the invention.

In operation, horizontal pressure applied to the top of the back is transmitted to the two long levers A at the opposite ends of the
35 seat, which are compelled to move in unison by their connecting rock shaft E. Through the medium of the pin and slot connection *a'* *b'* between the levers A and B and the pin and slot connection *b*, *c*, between the levers B and
40 the back H, motion is transmitted from the said levers A to the bottom of the back and by reason of the greater angular movement of the extremities of the levers B the bottom of the back receives an excess of movement
45 throwing it to the rear of the levers A in either position to which it is shifted and giving the back a proper angle of inclination. By the same movement of the levers A the seat J is tilted backward by the pins M on the

levers A traveling in the slots *n* in the pivoted
50 seat frame N.

I have shown and described pin and slot connections *a*, *b*; *a'* *b'*; and M, *n* between the moving parts because this is a common and
55 simple form of sliding pivot connection and is what I use in practice, but it is manifest that, other known forms of sliding connections may be substituted for the pin and slot, without departing from my invention.

The construction above described has cer-
60 tain marked advantages over any other known to me. The mounting of the back upon two long levers pivoted at a fixed point near the floor insures solid support and easy
65 movement; the separate pivoting of the lower end of the seat back enables the bringing of the back to proper position with relation to the cushion J, which would not be the case if the back were fixed between or parallel with
70 the levers A; the arranging of the long levers outside of the fixed seat frame permits the use of long levers which are pivoted close to the floor as otherwise, with levers of that
75 length, no proper provision could be made for the passing by the long levers of the pivots of the short levers upon the fixed supporting
80 frame and the back; and the pivoting of the short levers near the bottom of the back (which is rendered possible by the form of long levers and pivots therefor adopted) en-
85 ables the arrangement of the short levers so that when in normal position they will be approximately horizontal and the strain upon them will be approximately longitudinal.

Having thus described my invention, the
85 following is what I claim as new therein, and desire to secure by Letters Patent:

The combination of a seat-supporting frame having a leg D adjustable endwise of the seat, a tube F supported by the leg D, a back oper-
90 ating lever A pivoted on the end of the tube F and a rock shaft E within said tube to which the lever is rigidly secured, substantially as and for the purpose set forth.

PETER M. KLING.

Witnesses:

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