J. B. KILBURN.

CAR SEATING.

APPLICATION FILED MAR. 27, 1905.

911,246.

Patented Feb. 2, 1909.

2 SHEETS—SHEET 1.

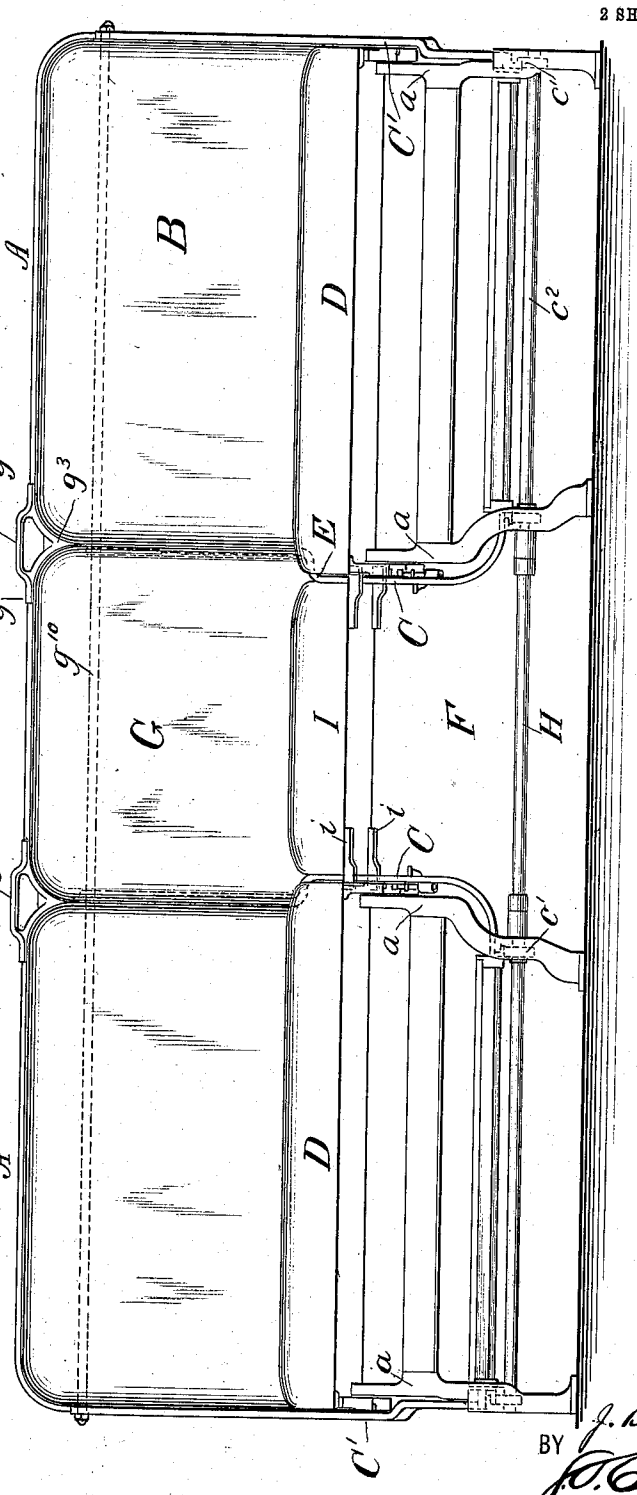


Fig. 1.

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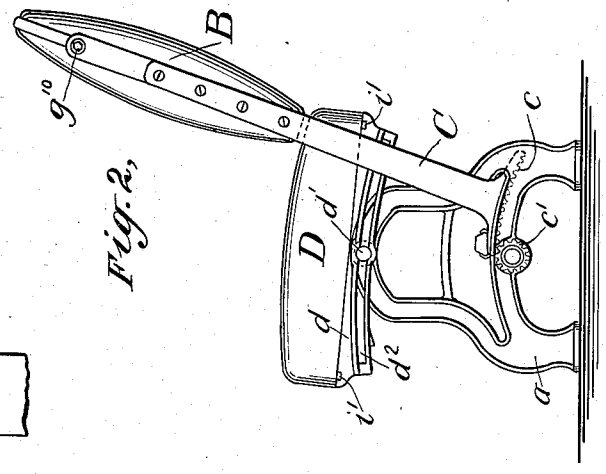


Fig. 2.

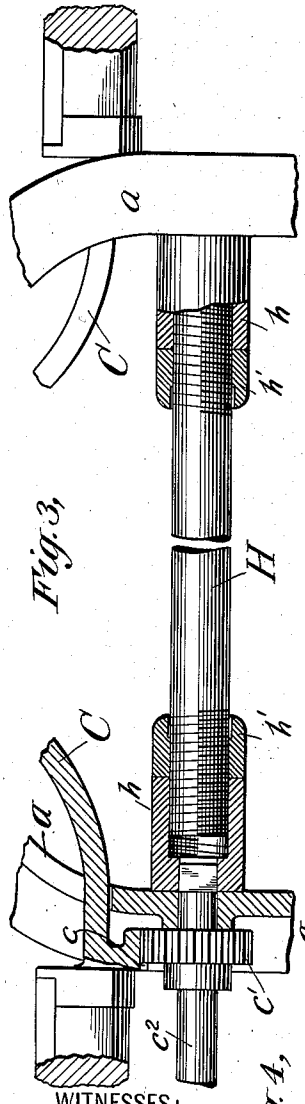


Fig. 3.

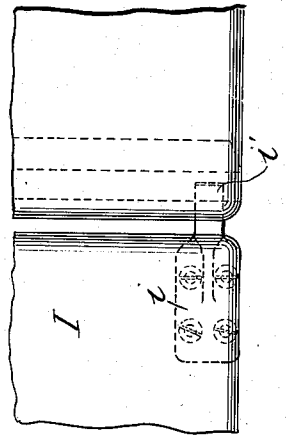


Fig. 5.

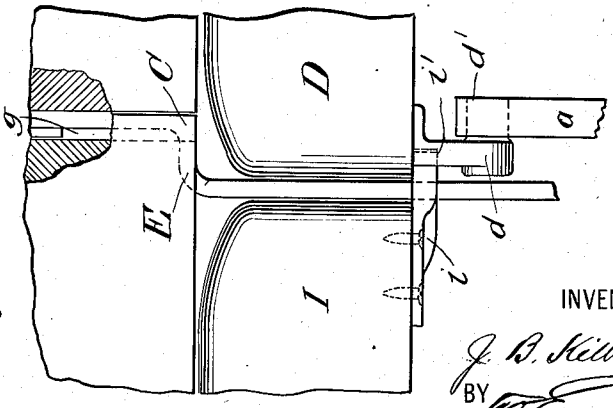


Fig. 4.

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UNITED STATES PATENT OFFICE.

JOHN B. KILBURN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE HALE AND KILBURN MANUFACTURING COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

CAR-SEATING.

No. 911,246. Specification of Letters Patent. Patented Feb. 2, 1909.

Application filed March 27, 1905. Serial No. 252,327.

To all whom it may concern:

Be it known that I, JOHN B. KILBURN, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Improvement in Car-Seating, of which the following is a specification.

The object of the present invention is to provide a simple, durable and easily installed construction of car-seating adapted particularly for use in so-called "convertible cars", the sides whereof when closed require the seats to be reached by means of a central aisle and when open permit the seats to be approached from the sides of the car.

The invention is particularly adapted also for use in connection with seating of the reversible type, wherein either the seat-back or seat-cushion, or both, may be moved forward or rearward, so that the seat may face in either of two directions.

In accordance with the invention, it is contemplated that where the seating is installed in cars of the convertible type two rows of reversible seats may be installed, one on either side of the car, leaving a central aisle, through which access may be had to the seats when the car is converted to the closed type commonly used in winter. Provision is made, however, for utilizing this aisle space for seating purposes when the car is converted to the open-side type commonly used in summer.

In carrying out the invention in an approved form, to which however the present invention is not to be limited, I provide a car with reversible seats, preferably having backs of the "walk-over" type (although, if desired, they may be of the "turn-over" type), these seats being arranged on either side and, as above stated, leaving a central aisle. The seat-cushions may be stationary or adapted to cant, as, for instance, on a central pivot, or to both cant, so that the forward edge shall be higher than the rearward edge, and to bodily shift forward, and this movement, whether a canting movement only or a combined canting and shifting movement, is preferably transmitted to the seat-cushion by means of the back of "walk-over" or other type. Such seats are arranged in longitudinal rows adjacent to the sides of the car and leaving a central aisle, and to utilize this aisle space for seating purposes when access to the seats may be had from the sides of the car I provide seat-backs and seat-cushions of a size corresponding to the space between the longitudinal rows of seats and so secure these in position to the adjacent seat-cushions and seat-backs as to move simultaneously with the same or with either thereof. Provision is also made for binding each two laterally adjacent seats together, and for assuring simultaneous movement of the backs or cushions or both in reversing the series of seats from one facing direction to the other.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation illustrating two car-seats of the "walk-over" type with my improvement applied thereto; Fig. 2 is an end elevation of one of the "walk-over" seats shown in Fig. 1; Fig. 3 is an enlarged detail view, illustrating a preferred form of means for assuring simultaneous movement of both ends of the series of backs during the reversing operation; Fig. 4 is an enlarged detail view, illustrating a preferred manner of supporting the intermediate seat-back and cushion between two of the "walk-over" seats; and Fig. 5 is an enlarged detail view of the under side of an intermediate seat-cushion, illustrating here, as well as in Fig. 4, the preferred means for supporting such cushion in one of the rockers carried by the frame of an adjacent seat.

Referring to these drawings, in which similar letters denote corresponding parts, A, A, designate two car-seats of the "walk-over" type, each comprising a frame *a*, and a "walk-over" back B carried by arms C, C′, the lower ends whereof are here shown as provided with sectors *c* adapted to mesh with pinions *c′* keyed or otherwise secured upon cross-shaft c^2 journaled in the side members of the seat-frame. Each seat is provided with a cushion D, and in the present form this is shown as supported upon rockers *d* pivoted at *d′* to the side members of the supporting frame. Each of said rockers is provided with a guideway d^2, with which coacts a lug extending inwardly from one or both of the back-supporting arms C, C′. It will, therefore, be seen that as the back B is reversed from one facing direction to the other, the seat-cushion D is correspondingly rocked upon the pivots *d′*.

The back-supporting arms C are here shown

as provided with shoulders E, those portions of said arms lying below said shoulders being located close to the ends of the seat-cushion D, to interfere as little as possible with the aisle space and to permit the use of maximum seating surface. Said arms above said shoulders are secured by any suitable means, such as screws, to the edges of the "walk-over" backs B, extending outwardly therefrom to some extent, however, for the purpose presently to be described.

The construction as thus far specified is adapted for use in a closed car, access to the seats being had by means of the central aisle F. In order to convert the seating in manner corresponding to the conversion of the car from the winter type to the summer type, I employ detachable intermediate seat-backs and cushions, one of each for each laterally adjacent pair of reversible seats. Thus, I provide for each such pair an intermediate seat-back G of a width just sufficient to bridge the distance between the adjacent edges of the seat-backs B, the end edges of each of such intermediate backs being provided with slots g permitting said intermediate back to be readily adjusted to operative position by engaging said slots with the projecting back-supporting arms C and permitting such intermediate back to pass downwardly upon such arms until arrested by the shoulders E of such arms. This, however, is merely a preferred construction, a very obvious departure from which is that the back-supporting arms C may, if desired, be provided with outwardly projecting lips or lugs adapted to engage either with continuous slots in the ends of the intermediate back-section G or with individual slots in which such projections may be locked by any suitable means, as, for instance, means corresponding to a bayonet joint. Further, and for the purpose of binding the intermediate back G to the adjacent backs B, I may, if desired, provide all three backs with a suitable opening, extending longitudinally of such backs and therefore transversely of the car, adapted to receive a tie-rod g^{10}, the ends whereof outside the distant edges of the series of backs may be provided with nuts or other similar devices. Also, I prefer, both for purposes of utility and for ornamental finishing of the three-part structure, to provide the backs with grab-handles g', g^2, each of which is located at the meeting-point of a back B with an intermediate back G, and provided with the central downwardly extending portion g^3, which may be secured to each of the adjacent backs, the horizontal portion g^4, which may be grasped by the hand, and the outwardly extending portions g^5, which may be secured to the upper edges of the two adjacent backs.

As will be seen, the means described serve to bind all three of the backs firmly together, in order that there shall be no racking or wrenching, the reversal of the series of backs being readily effected regardless of the point at which the power is applied. To further this desirable end, I also connect the cross-shafts c' carrying the pinions c'. This may be effectively accomplished by permitting the individual cross-shafts to extend slightly beyond the adjacent side members of the supporting frame, the outwardly extending ends being angular in cross-section and connecting the cross-shaft of one seat with that of the laterally adjacent seat. An efficient method of so connecting such cross-shafts is illustrated in Fig. 3, in which H designates a connecting shaft, the ends whereof are preferably screw-threaded to engage with sleeves h, each provided with an orifice of a size and shape corresponding to that of the inwardly extending end of the adjacent cross-shaft c^2. Said sleeves are threaded to correspond with the threading on the connecting shaft H, the threads on the latter being of right and left pitch, so that after the parts have been adjusted as shown in Fig. 3, the shaft H may be readily turned by a suitable wrench and the sleeves h forced apart, so as to fit snugly against the adjacent faces of the side frame of the seats and around the angular ends of the cross-shafts c'. If desired, said connecting shaft H may also be provided with jam-nuts h' of the same diameter as, and lying adjacent to, the sleeves h, and which will serve as a finish to the construction, covering the threads on the shaft H and therefore hiding them from view, and prevent turning of shaft H in the sleeves h after these have been adjusted.

The connection of the cross-shafts c^2 with the connection of the backs B and intermediate back G assures synchronous movement of said backs, and, as above stated, makes it possible to reverse the same on the application of minimum power, applied at any point throughout their extent.

The intermediate seat or cushion I will preferably be of a width but a trifle less than the distance between the adjacent back-supporting arms C, and the means for supporting the same will naturally be varied accordingly as the cushions of the laterally adjacent seats are of one or another of the several varieties above referred to. Where, for instance, the cushions of the laterally adjacent seats are adapted to cant upon a central pivotal point (as illustrated in the type of seat selected for illustration), rather than to both cant and to shift bodily, a preferred means for supporting the intermediate seat or cushion I is that shown in the drawings and includes brackets i screwed or otherwise secured to the under side of the frame of such seat or cushion and extending outwardly therefrom to engage recesses i' formed in the outer surfaces of the aisle-end

rockers of two laterally adjacent seats. Said recesses, as will be seen from Fig. 2, may take the form of vertical slots, the upper ends whereof are open. In order to place the intermediate seat or cushion I in position, the seats or cushions D may be removed and the intermediate seat or cushion I quickly located by passing the projecting brackets *i* into the recesses *i'* and then replacing the seats or cushions D. Under this plan it is not essential that said brackets I be either removed or removable, and in addition the placing of the cushions D in position operates also to lock such intermediate cushion I in place. If preferred, however, the brackets at one side of the intermediate cushion may be inserted in their corresponding recesses, and then the brackets at the other side arranged in the recesses with which they correspond, such brackets being then made fast to the under side of the intermediate cushion. Also, if desired, the brackets at either side of the intermediate cushion may be secured to such cushion by means of set-screws operating through slots in said brackets, so that in order to place the intermediate cushion in position it will be necessary only to slide said brackets backward when adjusting the cushion to proper position, then to move them forward to engage their corresponding orifices in the adjacent rockers, and finally to clamp such brackets in position by means of the set-screws. This construction being readily understood, is not illustrated in detail in the drawings.

It is here observed that the points at which the intermediate seat or cushion I is supported in the rockers of the laterally adjacent seats may be so located as not to interfere with the throw of the back-supporting arms C, C'. It will also be seen that since the seats or cushions D are operated by the back-supporting arms, the connection between said seats or cushions D and the intermediate seat or cushion I will permit and, in the present form, require, the corresponding movement of said seat or cushion I. In other words, by means of the construction described, the seating extending from one side to the other of the car is made one compact whole, all of the parts thereof operating together and no utilizable space within the car being wasted. It will also be seen that the conversion of the seating correspondingly with the conversion of the car from the winter type to the summer type may be readily effected, and that without requiring substantial modification of the individual seats or the use of an excessive number of additional parts.

What I claim and desire to secure by Letters Patent is as follows:—

1. In car-seating, the combination with two laterally adjacent seats, each having a movable back and each provided with means for assuring simultaneous movement of both ends of such back, of an intermediate back, connections between the same and the movable backs of said laterally adjacent seats, and a connection between said means on one of said laterally adjacent seats and the corresponding means on the other of said laterally adjacent seats, substantially as set forth.

2. In car-seating, the combination with two laterally adjacent seats having movable backs, of an intermediate back, and means, including grab-handles, for binding said backs together, said grab-handles being located between said movable backs and said intermediate back, substantially as set forth.

3. In car-seating, the combination with two laterally adjacent seats having movable backs, of an intermediate back, and means, including a connecting rod and grab-handles, for binding said backs together, said grab-handles being located between said movable backs and said intermediate back, substantially as set forth.

4. In car-seating, the combination with two laterally adjacent seats, each having a seat-cushion and a "walk-over" back carried by arms supported below said seat-cushion, of an intermediate back and an intermediate cushion, both having means for detachably securing the same in position relatively to the backs and cushions of said laterally adjacent seats, and means additional to said "walk-over" and intermediate backs for assuring simultaneous movement of the backs of said seats and said intermediate back, substantially as set forth.

5. In car-seating, the combination with two laterally adjacent seats, each having a "walk-over" back and being provided with means for assuring simultaneous movement of both sides of each of said backs, of a detachable connection between such means characterizing one of said seats and the corresponding means characterizing the other of said seats, substantially as set forth.

6. In car-seating, the combination with two laterally adjacent seats having movable backs, of an intermediate back and a grab-handle located at the junction of said intermediate back with one of said movable backs and having a portion adapted to be grasped by the hand and another portion secured to the adjacent surfaces of said intermediate back and said movable back, substantially as set forth.

This specification signed and witnessed this 23rd day of March, 1905.

JOHN B. KILBURN.

Witnesses:
P. J. TUCKER,
GEO. H. RAPSON.