

(No Model.)

H. C. MOIR.
REVERSIBLE SEAT.

No. 476,474.

Patented June 7, 1892.

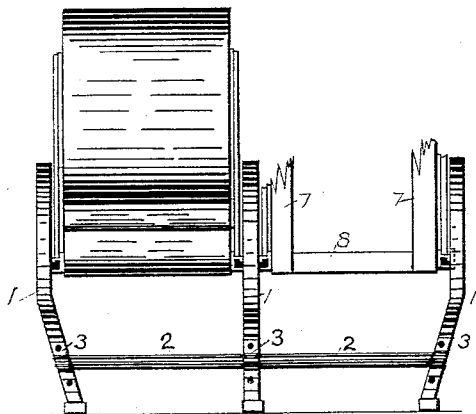


FIG. 1

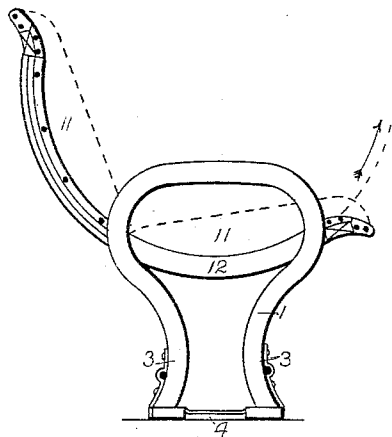


FIG. 2

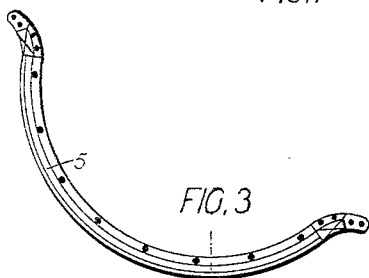


FIG. 3



FIG. 4



FIG. 5



FIG. 7

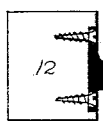


FIG. 6

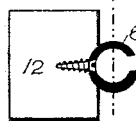


FIG. 8

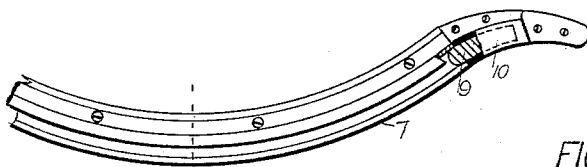


FIG. 9



FIG. 10

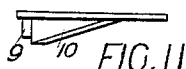


FIG. 11



FIG. 12

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HENRY CHRISTOPHER MOIR, OF SUMMER HILL, NEAR SYDNEY, NEW SOUTH WALES.

REVERSIBLE SEAT.

SPECIFICATION forming part of Letters Patent No. 476,474, dated June 7, 1892.

Application filed July 18, 1891. Serial No. 399,986. (No model.) Patented in New South Wales December 2, 1890, No. 2,650; in Queensland December 17, 1890, No. 1,209, and in New Zealand December 29, 1890, No. 4,773.

To all whom it may concern:

Be it known that I, HENRY CHRISTOPHER MOIR, a citizen of Great Britain, residing at Summer Hill, near Sydney, in the Colony of New South Wales, have invented a new and useful Reversible Seat, (for which I have obtained a patent in the said Colony of New South Wales, No. 2,650, dated the 2d day of December, 1890; in New Zealand, No. 4,773, dated December 29, 1890, and in Queensland, No. 1,209, dated December 17, 1890,) of which the following is a specification.

This invention relates to reversible seats or chairs, and is generally applicable to car-seats, deck and garden chairs, parlor-settees, and the like. It belongs to that class of reversible seats wherein the seat and the back-rest are integral with one another and their shape identical and wherein the reversal of position is effected by "tumbling" the seat and the back in the standards, so as to make each become seat and back-rest alternately.

Referring to the accompanying drawings, which are to be taken as a part of this specification and in which the invention is represented as being applied to an "American vestibule-car," Figure 1 represents a front view of a double seat with parts broken away to show the construction. Fig. 2 is a side elevation of the same. Fig. 3 is a side view of the runner upon the edge of the back and seat frame. Fig. 4 is a side view of the carrier or rail on or in which the runner moves. Fig. 5 is a transverse section of the runner, illustrating the attachment thereof to the seat and back frame. Fig. 6 is a similar transverse section of the carrier or rail, showing the method of attaching the same to the curved bar or support therefor upon the standards. Fig. 7 is a transverse section showing a modification of the runner on the seat and back frame. Fig. 8 is a similar transverse section showing a modification of the carrier on the standards. Fig. 9 represents a side elevation, on an enlarged scale, of a portion of the seat and back with buffer attached, parts being broken away to illustrate the arrangement of the buffer. Fig. 10 is a side view of the buffer-case and buffer. Fig. 11 is a plan of the same, and Fig. 12 is an inner end elevation thereof.

1 1 represent the standards of the seat-frame, which may be of either wood or metal and which are provided with foot rests or bars 2, which are supported at their ends in brackets 3, secured to or formed integral with said standards.

4 designates base or foot pieces, through which bolts or screws pass into the floor for the purpose of securing the seat-frames in position.

The combined seat and back may consist of a metal plate bent in the form of an arc of a circle, and if necessary suitably strengthened and upholstered in the usual manner, the seat and back being provided with cushions or padding 11 11, as shown.

To the sides or edges of the seat and back frame are secured runners 5, which in cross-section are preferably made in the form shown in Fig. 5, with L-shaped recesses 5', and which may be bolted or otherwise secured to the wood or metallic side pieces 7 of the seat frames, as indicated in Figs. 1 and 5. These runners are adapted to engage the carriers or rails 6, which latter may be secured to the frame-bars 12, and which in cross-section are preferably made in the form shown in Fig. 6, being provided with a laterally-projecting flanged rib or L-shaped tongue, forming a male portion which is adapted to engage the longitudinally recessed or correspondingly-shaped female portion of the runner 5, so as to hold and guide said runner in its movements for the purpose of adjusting the seat. By this construction the runners and carriers are adapted to be interlocked so as fulfill the double purpose of supporting the moving parts and of locking the standards 1 at a fixed distance apart.

The runners 5 are constructed in the form of a true segment of a circle and the carriers 6 are correspondingly curved, the relative lengths of the arcs being so proportioned that sufficient support will be given to the seat to enable it to hold a person sitting in it without tending to overbalance, and also that it may be "tumbled" sufficiently to bring it into the required position at both ends of its travel.

It will be observed that the carriers 6 ex-

tend across the entire width of the seat proper at each end thereof, and thus form continuous supports under the ends of seat, so that it cannot be distorted or sagged laterally or transversely between the extremities of the carriers, as would be the case if the runners were supported on two distinct and independent bearings at each end of the seat. By my invention the runners are not liable to be bent or distorted from the proper curves by weight on the seat, and this continuous-bearing function of the carriers is a valuable feature of the invention, adding to the strength and durability of the chair. These carriers can also be applied to almost any standards now made and to other supports, and do not require special castings or forms of standards. The continuous curved bearing between runners and carriers also materially assists in preventing casual shifting of the seat.

If desired, the runners and carriers, either or both, may be made integral with or attached to the parts of the seat or framing to which they belong, respectively, by means of screws, bolts, or rivets.

The runners 5 in the form shown may be secured to the side pieces 7 of the seat-frames by suitable bolts or rivets, while the carriers are similarly secured to the curved frame-bars 12, as shown in Figs. 2 and 6.

8 represents a cross-piece of the seat-frame, and 9 a buffer. Two buffers are attached to each runner, one at each end thereof, one being applied after the runners are engaged with the carriers. The buffers act as keepers to prevent disengagement of the runners and carriers, and also as stops to limit the movement of the runners and as cushions to deaden the shock between the fixed and moving parts. These buffers 9 preferably consist of cushions or pads formed by running india-rubber in a state of solution into suitable cases or castings 10, with sockets therein to receive the rubber solution, and allowing the rubber to set and form itself into a solid block in the case, whereby it will be securely retained therein without other fastening. The case 10 is preferably cast with the socket or recess to receive the rubber, as shown in Figs. 10, 11, and 12, and may be secured in position upon the seat and back frame after the latter has been placed in position upon the standards, and will serve to prevent the motion of the seat from being too suddenly checked, and will also act as a cushion to prevent noise as well as injury to the parts. Ordinarily the thick liquid rubber will project from the casing far enough to form a pad or cushion, as shown in the drawings; but, if necessary, a destructible mold may be placed over the socket in the casting when the rubber solution is poured therein, so as to cause the rubber in setting to project sufficiently to form a pad or cushion of greater or less length, as may be desired.

In the modification shown in Figs. 7 and 8 the runner 5 may consist of a curved plate or

bar having the laterally-projecting tongue or male portion thereof, which fits the carrier, made round or circular in cross-section, as shown in Fig. 7, and adapted to fit within the cylindrical female portion or split tubular carrier 6, (shown in Fig. 8,) these parts being curved and secured to the frame-pieces 7 and 12, respectively, as described, with reference to the parts illustrated in cross-section in Figs. 5 and 6.

It is not essential that the seats and backs should be curved exactly in the manner shown, so long as the side frames and runners are suitably curved. At the present time railway-car seats of the kind described are made to accommodate two persons; but the seat is not usually divided, as shown in the annexed drawings, and it consequently often happens that when a car is partially filled a party of two or more persons cannot find accommodation in a single section, and must therefore break company. By the employment of the construction described each part of the seat may be used in either of two sections or arranged face or back to the journey without interference with other seats adjacent. The construction of the seats should be such that as little space as possible will be lost between seats when they are arranged back to back. It will be evident that the curves may be struck from a different radius from that shown and that the construction and arrangement of the runners and carriers may be varied. I do not, therefore, restrict myself to the use of the particular construction described.

The seat, as already described, when provided with broad or weighted foot-pieces, is suitable for deck, garden, and parlor use, and may be arranged at will, as before stated, either as an ordinary side-by-side seat or as a settee. If required, three or more seats can be fixed in the one frame, each reversible independently of the others, and made sufficiently large to accommodate two or more persons.

In lieu of making the runners on the sides of the seats and back-rests move in carriers on the standards they may be specially formed to admit of flanged or flat wheels or rollers, the axes of which are secured to the standards, moving within them and performing the same function as the carriers before described.

I am aware that hitherto reversible seats have been made wherein the seat and the back interchange positions and are supported by grip-rails or runners which move in carriers or supports placed below the seats in such a way as to permit the same to be reversed by tumbling, and I am also aware that reversible seats are well known in which the back-rest is separate from the seat, being secured to a pivot or pivots in the side standards, about which pivot or pivots it is swung from one side to the other to effect the change of positions required. In the latter construction it is, however, necessary in effecting the

reversal to lift the back-rest bodily over its center of support, and this is frequently a great disadvantage.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In a reversible seat, the combination of the standards, the combined back and seat, and the curved runners attached to the ends thereof, substantially as described, with the curved carriers attached to the standards and forming a continuous bearing and support for the ends of seat, and the interlocking grooves and ribs on said runners and carriers, respectively, substantially as described.

2. A reversible seat comprising the combined seat and back-rest, curved runners formed with laterally-projecting tongues which are made round or circular in cross-section, the standards, and the curved longitudinally slitted or split tubular carriers adapted to receive and guide said runners, whereby the runners and carriers are adapted to be interlocked, so as to fulfill the double purpose of supporting the moving parts and of locking the standards together, substantially as described.

3. In a reversible seat, the combination of the standards, the shiftable combined back and seat, and the curved runners attached to the ends thereof and engaging carriers on the standards, substantially as described, with the buffers attached to the ends of the

runners and serving both as keepers to prevent their disengagement with the carriers and as stops to limit the movement of the runners, substantially as described.

4. The combination of three standards and curved carriers attached to the inner faces of the outer standards and to the opposite faces of the inner standard, with a pair of combined back and seat frames, the curved runners attached to the ends thereof, respectively, engaging a carrier on the outer and inner standards, and the buffers attached to the ends of said runners for limiting the movement thereof and preventing the same disengaging the carriers, substantially as described.

5. In a reversible seat for cars, &c., the combination of the combined back and seat and the curved runners attached to the ends thereof, substantially as described, with the curved carriers attached to suitable supports and extending the width of the seat, the interlocking tongue-and-groove connections between said carriers and runners, and the buffers attached to the extremities of the runners and serving both as keepers and stops, substantially as and for the purpose specified.

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