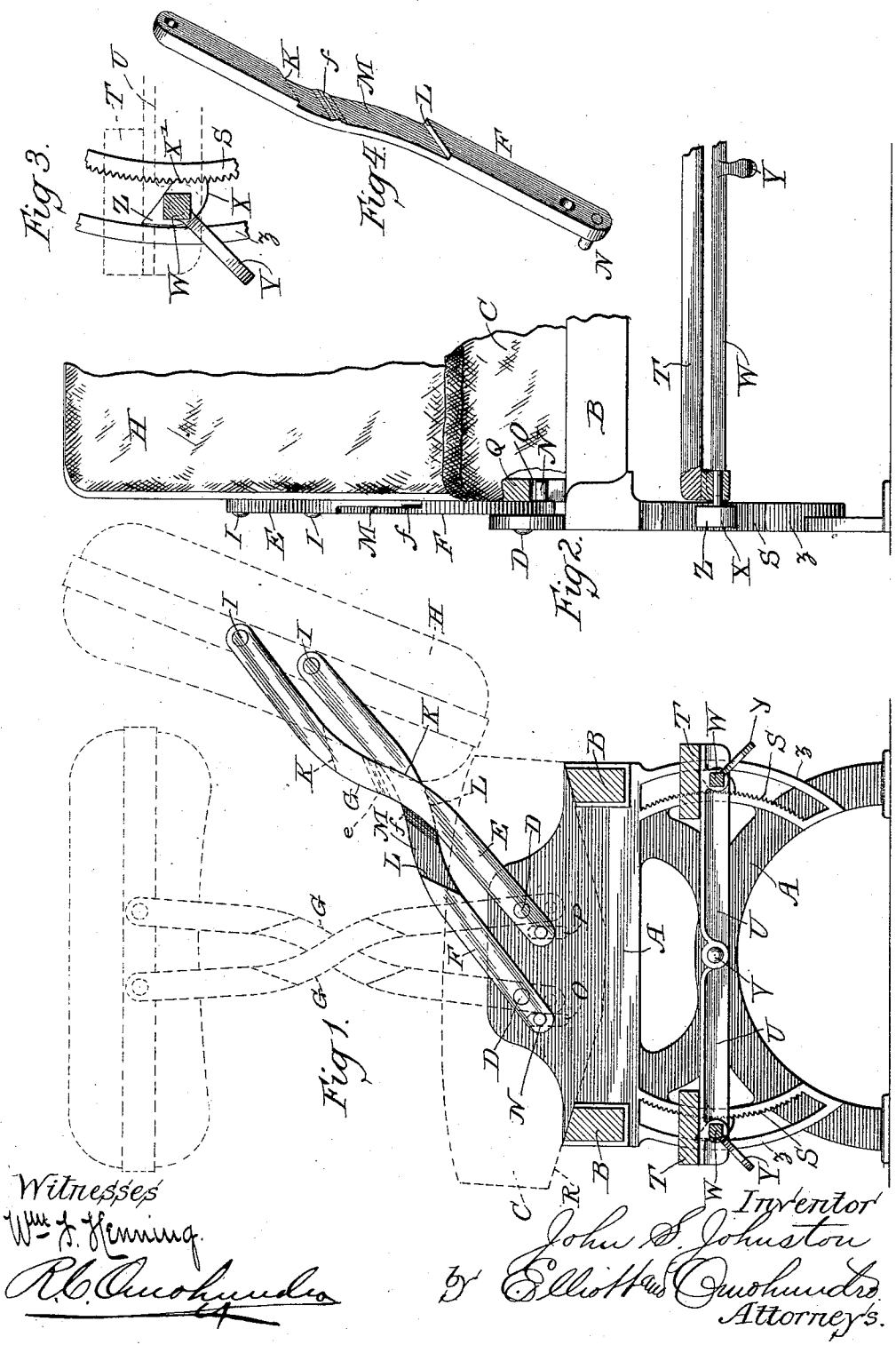
(No Model.)

J. S. JOHNSTON.

REVERSIBLE CAR SEAT.

No. 484,434. Patented Oct. 18, 1892.



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UNITED STATES PATENT OFFICE.

JOHN S. JOHNSTON, OF CHICAGO, ILLINOIS.

REVERSIBLE CAR-SEAT.

SPECIFICATION forming part of Letters Patent No. 484,434, dated October 18, 1892.

Application filed February 26, 1892. Serial No. 422,863. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. JOHNSTON, a citizen of the United States, residing at Chicago, in the county of Cook, State of Illinois, have invented certain new and useful Improvements in Reversible Car-Seats, of which the following is a full, clear, and exact specification.

My invention relates more particularly to that class of reversible car-seats in which the back of the seat is supported by a pair of arms at each end, so arranged as to cause said back to be reversed edge for edge in being shifted from one facing position or direction to the other.

The prime object of my invention is to provide a seat of this character at each end of the back with a pair of simple arms which shall be so constructed and arranged as to brace and support each other and form in themselves an ample support and brace for the back.

My invention also relates to an improved foot-rest, which, while applicable to any ordinary seat, is more especially adapted and designed for use in connection with reversible car-seats.

A further object of my invention is to provide such a seat with a simple and durable foot-rest which may be readily adjusted to any desired position by means of the foot of the occupant of the seat.

With these ends in view my invention consists in certain features of novelty in the construction, arrangement, and combinations of parts, hereinafter fully described, with reference to the accompanying drawings, and more particularly pointed out in the claims.

In the drawings, Figure 1 is an end sectional view of my improved seat, showing the seat bottom and back in dotted lines and also representing in dotted lines the position of the back and its supporting-arms when partially shifted. Fig. 2 is a front elevation, partly in vertical section, portions being broken away. Fig. 3 is a detail view, partly in section, showing one of the locking-dogs for the foot-rest, on a larger scale. Fig. 4 is a detail perspective view of one of the supporting-arms.

In the drawings, wherein like signs of reference indicate like parts throughout the several views, A represents the main frame of an ordinary car-seat, provided with the usual beveled or inclined seat-suppporting sills B, upon which the seat or bottom C rests, as shown in dotted lines in Fig. 1, in the usual manner.

Pivoted to the frame A or to any other fixed portion of the seat at the points D are two supporting arms or links E F, each of which is provided, preferably, at about its mid-length with an offset or bend G, which offsets turn toward and across each other in the manner illustrated in Fig. 1, and the arms are so formed that their upper and lower ends will be approximately parallel and but a short distance asunder, the upper ends of the arms being pivoted to the ends of the back H at the points I in any suitable manner. The inner face of each of these arms has formed upon it a pair of shoulders or stops K L. These shoulders or stops may be formed by securing separate lugs to the arms or by casting enlargements or lugs integrally with the arms; but I prefer to form them by forming a mortised portion or recess M in each arm, which preferably extends throughout the length of the offset G, the shoulders or stops K L being thus made at the extremities of such offsets or bends on both sides of the point of intersection, and they being also formed obliquely to the arms, as more clearly illustrated in Fig. 1, so that the shoulders on one arm will constitute broad bearing-surfaces for arresting the movement of and supporting the other arm when the back is shifted to the extremity of its movement in either direction. By providing the meeting faces of the arms with the recesses M in this manner it will be seen that I am enabled to fit the thinner portions of the arms together, thus bringing the extremities of the arms in the same vertical plane, and thereby reducing the space required for the movement of the arms between the end of the seat-bottom C and the frame A to a minimum, and, if desired, causing the ends of both arms to fit accurately against the end of the back and also against the inner side of the frame A. It is very obvious, however, that the mortised or reduced portions M might be formed by bending the arms instead of cutting away a portion thereof, as described. With supporting-

arms thus constructed and arranged it will be seen that when the back is shifted from one side to the other the movement of the arms relatively to each other will be only equal to the distance between the shoulders K L minus the width of the arm, and the movement of the back will be limited when the latter is shifted in one direction by the shoulder L on the arm E engaging under the offset G of the arm F and the shoulder K of the arm F engaging the rear side of the offset of the arm E, as more clearly shown in Fig. 1, and thus constituting a firm brace for the arms and support for the back. When the back is shifted in the opposite direction, the shoulder K of the arm E will be impinged by the offset G of the arm F and the shoulder L of the arm F will engage under the offset G of the arm E. The pivots D, by means of which the arms are secured to the frame A of the seat, are located at a distance from the lower extremities of such arms, so as to leave short extensions below the pivots, each of which latter is provided with a lug N, and these lugs engage in short vertical slots O P, respectively formed in the end of the frame Q, to which the bottom cushion is secured, whereby when the back is shifted in one direction or to one facing position the bottom C will be automatically shifted in the opposite direction and its forward edge elevated by reason of the incline R and sills B in the ordinary and well-known manner.

In order that the back may not be jolted out of position or accidentally pushed forward by any slight or ordinary pressure from the occupant of the seat in the rear, I provide each of the arms E F with a rib or ridge *e f*, respectively, which are located in the mortised portion M, preferably parallel with the upper stops or shoulders K, and at just sufficient distance from the latter to permit one of the arms to rest between such shoulder and the rib or ridge with which it is parallel in the manner shown in Fig. 1. As shown in this figure, the arm E is now being held between the shoulder K and the rib *f*; but when the back is shifted to the other side the rib *e* and shoulder K on the arm E will bear the same relation to the arm F as now exists between rib *f*, shoulder K, and arm E. The ribs *e f* are preferably formed with rounded or inclined edges, so as to permit the arms to be forced over them by the simple movement required for shifting the back from one facing direction to the other.

Formed upon or secured to the frame A on both sides of the seat and at each end thereof are two segment-racks or toothed bars S, between which the independent foot-rests T extend. Each of these foot-rests is provided at each end with an arm U, which is secured thereto at its outer end in any convenient way and pivoted at its inner end at the point V to the frame A, such pivotal point being the center from which the arcs S are struck, and journaled in the ends of these arms are two shafts W, each of which is provided at both ends with a locking-dog X, having, preferably, a number of teeth complementary in shape to the teeth of the segment-racks S and being adapted to engage the same. These locking-dogs X are so formed that when the shaft W is turned in one direction or moved bodily in that direction the dogs will disengage the racks S and permit the foot-rest to be elevated to any desired position; but as soon as the upward pressure is released such dogs will again automatically engage with the teeth of the racks S, and thus firmly lock the foot-rest against downward movement. The shafts W are preferably arranged under the foot-rests T, and each is provided with a toe-piece or handle Y, which is preferably situated at the mid-length of said shaft, so as to be convenient to a passenger on either end of the seat in the rear, and by means of which toe-piece the shaft may be rotated in an upward direction for unlocking the dogs and permitting the rest to be elevated by means of the toe or foot of the occupant of the seat in the rear, it being understood that the foot-rest is for the convenience not of the occupant of the seat to which it is attached, but for the one immediately in the rear. When the lever Y is elevated in the act of raising the foot-rest, the movement will first cause the dog to fulcrum with its end tooth X′ on the rack, and the further upward movement of this lever or toe-piece will entirely disengage such tooth X′ from the rack and then strike against the under side of the rest, thus limiting the rotation of the dogs and causing the upward movement of the rest. When the toe is removed from the lever, it will gravitate to its former position and cause the dog to immediately re-engage the rack. The downward movement of the lever Y may be limited in any desired way; but I prefer to accomplish this by forming a nose or stop Z on one or both of the dogs on each shaft, which rubs against the plain inner edge of a curved bar *z*, arranged parallel with each of the racks S at the outer side thereof.

Having described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. In a reversible seat, the combination, with the seat-frame and back, of two intersecting arms pivoted to each end of said frame and back and each having a shoulder or stop adapted to come against the other on both sides of their point of intersection and a rib arranged between said shoulders or stops on each arm, substantially as set forth.

2. In a reversible seat, the combination, with the back and the seat-frame, of two arms pivoted to each end of said frame and back and each having two shoulders or stops formed thereon and adapted to arrest the movement of and support the other, substantially as set forth.

3. In a reversible seat, the combination, with the seat-frame and back, of two intersecting

arms pivoted to each end of said frame and back and each being provided with two shoulders on both sides of their point of intersection, the arms of each pair being adapted to simultaneously come to rest against the shoulders of each other, substantially as set forth.

4. In a reversible seat, the combination, with the back and the seat-frame, of a pair of intersecting arms pivoted to each end of said back and frame and having their ends bent substantially parallel, each of said arms being provided with shoulders arranged on both sides of their point of intersection and adapted to strike the other arm, substantially as set forth.

5. In a reversible car-seat, the combination, with the back and the seat-frame, of a pair of intersecting arms pivoted to each end of said back and frame and each having shoulders or stops arranged diagonally thereacross at both sides of their point of intersection, the shoulders of each arm being adapted to strike the other arm, substantially as set forth.

6. In a reversible seat, the combination, with the back and the frame, of intersecting arms pivoted to each end of said back and frame and each having an offset or bend extending across or intersecting the other and each of said offsets being provided with a shoulder or stop arranged on both sides of their point of intersection and adapted to come against the other offset, substantially as set forth.

7. In a reversible car-seat, the combination, with the back and the frame, of intersecting arms pivoted to each end of said back and frame and each having an offset substantially midway between its ends, said offsets extending across each other and each being provided with a shoulder or stop adapted to come against the other, substantially as set forth.

8. In a seat, the combination, with the back and the seat-frame, of crossed arms pivoted to each end of said frame and back and having the offsets or bends G and each being provided with a stop or shoulder at both ends of each of said offsets, the shoulders on one arm being adapted to limit the movement of and support the other arm, substantially as set forth.

9. In a reversible seat, the combination, with the back and the seat-frame, of crossed arms pivoted to each end of said frame and back and having their meeting faces recessed or mortised, so as to form a pair of shoulders or stops on each for arresting the movement of the arms, the face of each of said mortised portions being provided with a rib or stop between said shoulders, substantially as set forth.

10. In a seat, the combination, with the back and seat-frame, of crossed arms pivoted to each end of said frame and back and having their meeting faces recessed or mortised, so as to form a pair of shoulders or stops on each for arresting the movement of the arms, substantially as set forth.

11. In a seat, the combination, with the back and seat-frame, of crossed or intersecting supporting-arms pivoted to said back and frame and each being provided with two shoulders or stops for engaging with the other and having a ridge or rib adjacent to one of said shoulders or stops, substantially as set forth.

12. In a seat, the combination, with the seat-frame and back, of a pair of crossed arms pivoted to the seat-frame and back, the shiftable seat-bottom having slots formed therein, and the pins or lugs on the lower ends of said arms, engaging in said slots, each of said arms being provided with a pair of shoulders or stops for limiting their movement, substantially as set forth.

13. In a car-seat, the combination of upright segment-racks at both ends of the seat, the plain-edged bars *z*, arranged parallel with said racks, a foot-rest extending between said racks, pivoted arms secured to the ends of said foot-rest, a shaft journaled in said arms, locking-dogs on the ends of said shaft, located between said racks and bars *z* and having plain edges Z, adapted to rub against the bars *z*, and a toe-piece for rotating said shaft, substantially as set forth.

14. In a seat, the combination of upright segment-racks at both ends of the seat, a foot-rest extending between said racks, pivoted arms secured to the ends of said rest, a shaft journaled in said arms, dogs on the ends of said shaft engaging said racks, and a lever or toe-piece for rotating said shaft, substantially as set forth.

15. In a seat, the combination of upright segment-racks at both ends of the seat, the plain-edged bars *z*, arranged parallel with said racks, a foot-rest extending between said racks, pivoted arms secured to the ends of said foot-rest, a shaft journaled in said arms, locking-dogs on the ends of said shaft, located between said racks and bars *z* and adapted to engage said racks, and a toe-piece for rotating said shaft located under the foot-rest, whereby the latter will form a stop therefor, substantially as set forth.

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