

No. 734,560.

PATENTED JULY 28, 1903.

J. S. JOHNSTON.
CAR SEAT.

APPLICATION FILED FEB. 2, 1901.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 2.

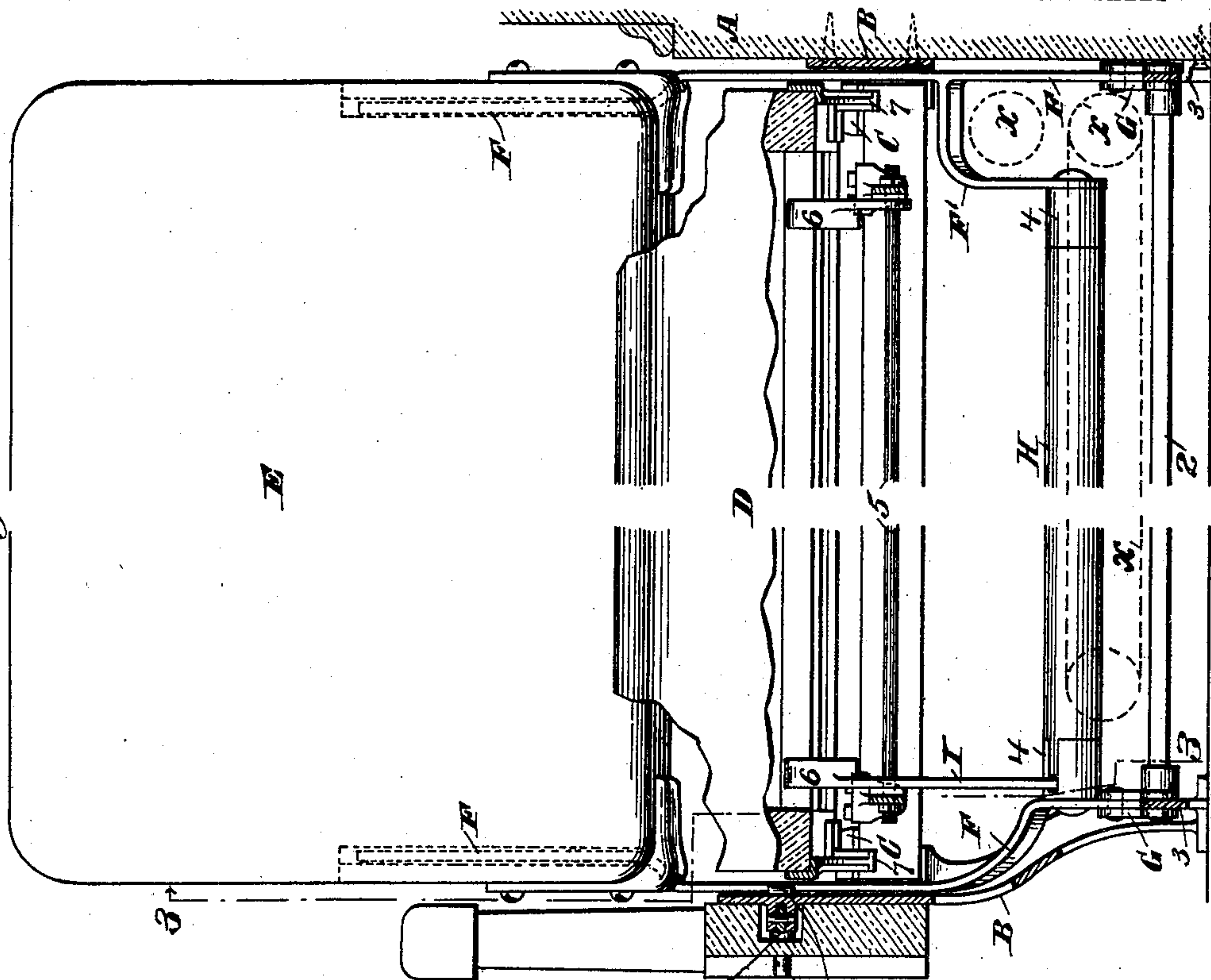
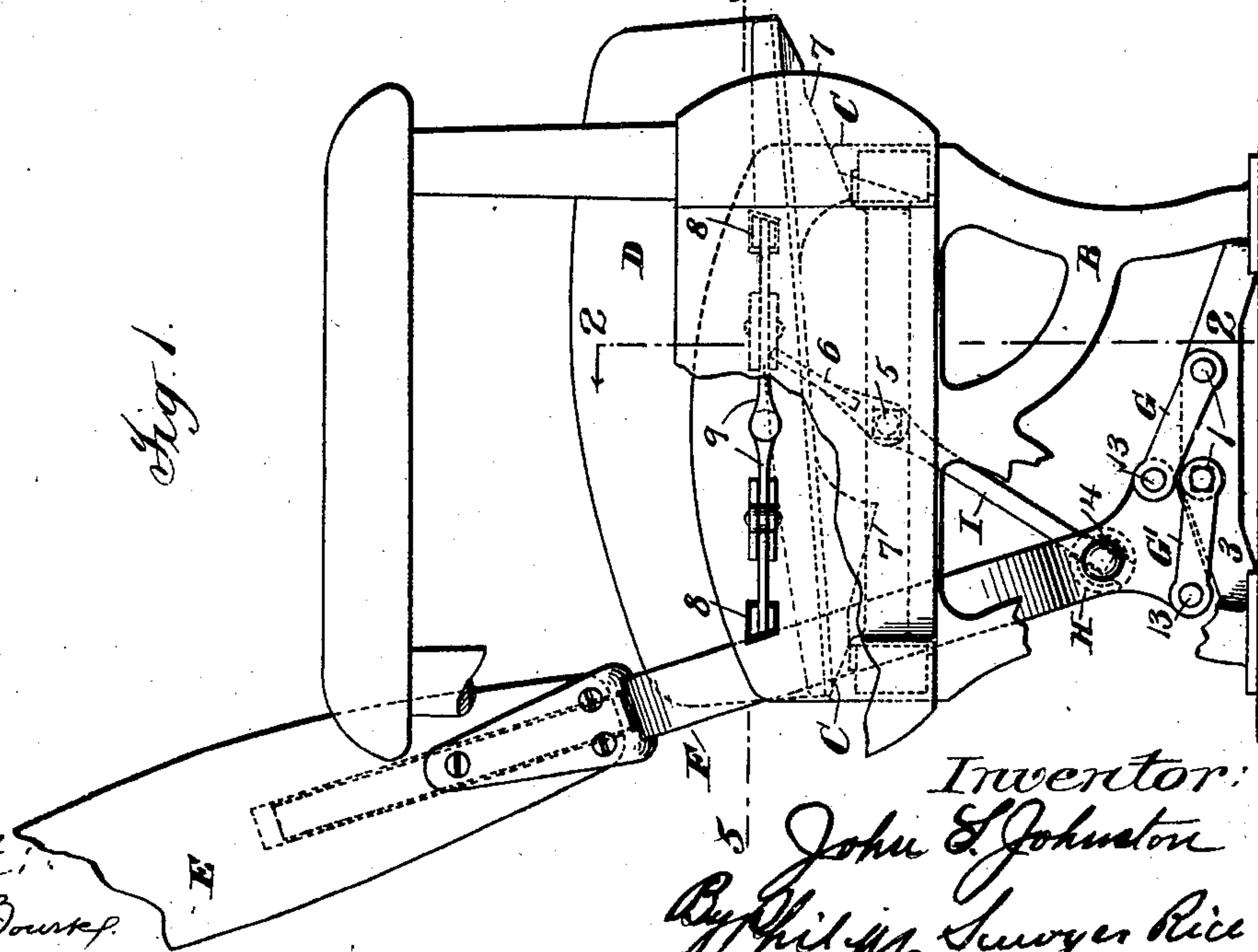


Fig. 1.



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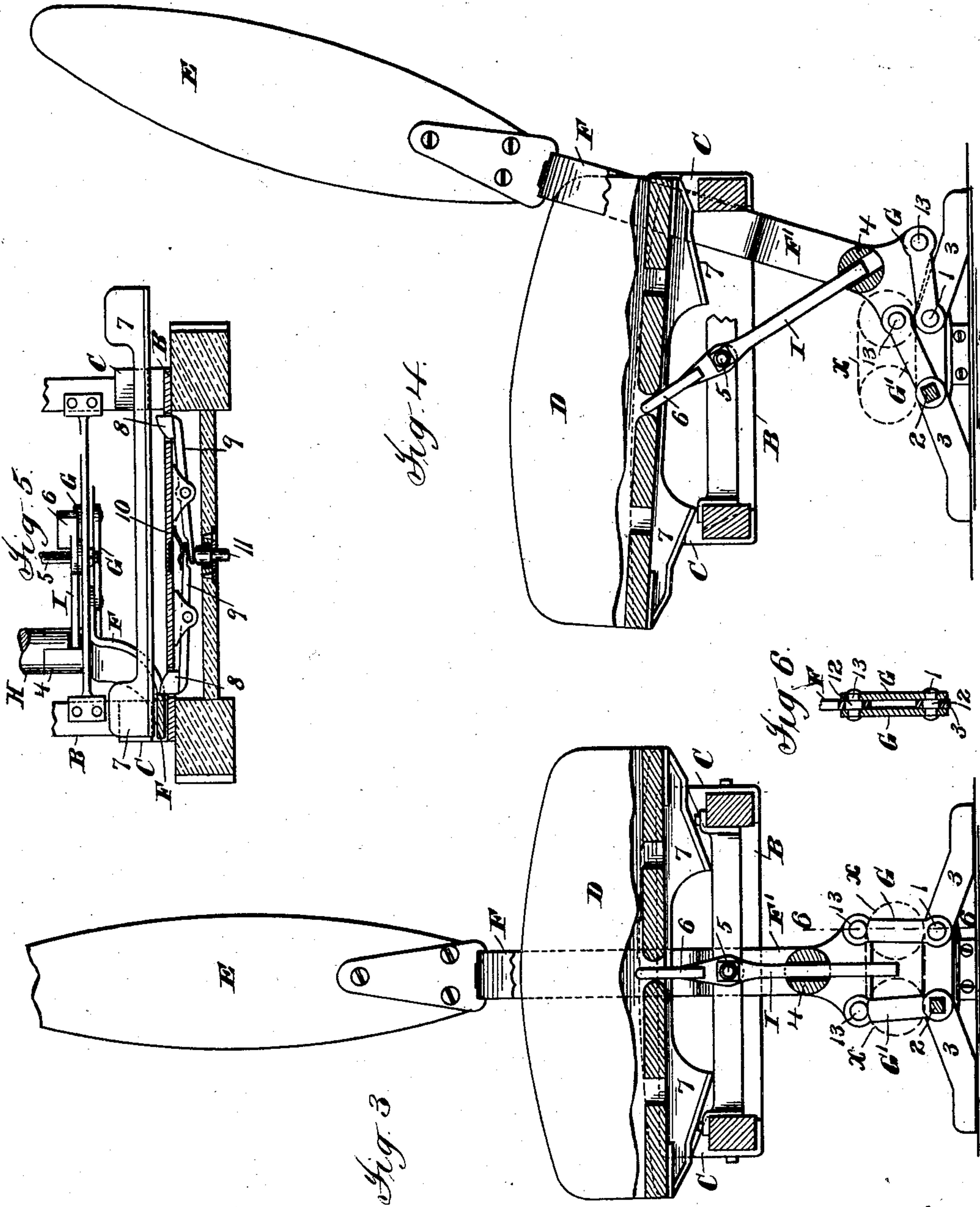
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

JOHN S. JOHNSTON, OF NEW YORK, N. Y., ASSIGNOR TO THE HALE AND KILBURN MANUFACTURING COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

CAR-SEAT.

SPECIFICATION forming part of Letters Patent No. 734,560, dated July 28, 1903.

Application filed February 2, 1901. Serial No. 45,664. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. JOHNSTON, a citizen of the United States, residing at New York city, county of New York, and State of New York, have invented certain new and useful Improvements in Car-Seats, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to car-seats of that class in which the back is reversed or transferred from one side of the seat to the other without being inverted or turned upside down, the object of the invention being to provide an improved construction of this class.

I aim especially at the production of a seat which shall be simple, compact, strong, and smooth in movement, and, further, to provide a foot-rest construction which shall secure large space for baggage below the seat and avoid the steam-pipes, if these be placed under the seat, and improved means for shifting the seat-cushion with the back and for locking the back in either position.

For a full understanding of the invention a detailed description of a construction embodying all the features of the same in their preferred form will now be given in connection with the accompanying drawings, forming a part of this specification, and the features forming the invention will then be specifically pointed out in the claims.

In the drawings, Figure 1 is an end view of the outer or aisle end of the seat with the frame partly broken away to show the construction. Fig. 2 is a vertical section on the line 2 of Fig. 1. Fig. 3 is a section on the line 3 of Fig. 2, showing the seat in the middle position of reversal. Fig. 4 is a similar view showing the seat fully reversed from the position shown in Fig. 1. Fig. 5 is a horizontal section on the line 5 of Fig. 1. Fig. 6 is a detail section on the line 6 of Fig. 3.

Referring to said drawings, A is the side wall of the car, which serves as a support for one end of the seat-frame B, which frame may be of any suitable form, and is provided with seat-sills C, on which the seat D rests,

the sills and seat being inclined, as usual in such constructions, so as to change the incline of the seat as it is shifted. The seat-back E is carried by back-arms F, one at each end of the back, these arms preferably being connected to the back by passing into grooves in the latter, as indicated in dotted lines, so that the back may readily be removed therefrom while held firmly by the arms. These seat-arms F extend downward nearly to the floor and at their lower ends are pivoted to the upper end of a pair of short arms or links G G', the lower ends of which links are pivoted at 1 to the seat-frame. The links at opposite ends of the seat are preferably tied together by an angular bar 2, connecting one link of each pair, this bar serving to secure the movement of the seat-arms and links at opposite ends of the seat together, which aids in obtaining smoothness of movement in the seat construction. The lower ends of the seat-arms F rest upon the upper edges of the frame-bars 3 of the seat when the seat is in either position of use, so that the back is supported by the links G G' only during reversal. The back-arm F at the outer or aisle end of the seat is preferably curved inward below the cushion, as shown, together with the frame-bar, as usual in car-seat constructions. At the inner end of the seat the back-arm F carries an inwardly and downwardly extending arm F', of such form and position as to accommodate the usual steam-pipes placed next the wall, these pipes being indicated at x in dotted lines.

In the outer back-arm F and the arm F' are mounted short metal sleeves 4, free to rotate, and in these sleeves is carried a bar H, preferably of wood, which forms a foot-rest, being carried from one side of the seat to the other by the seat-arms as the back is shifted, so as to be always in position for use at the rear side of the seat and leave the space in front of it free for baggage or for the steam-pipes x if they are arranged centrally beneath the seat, as shown in dotted lines. One of the sleeves 4 is slotted to receive a lever I, which is secured to a small shaft 5, mounted

to rotate in cross-bars on the seat-frame, and this shaft 5 carries at opposite ends arms 6, one of which is shown as a continuation of the lever I above its pivoting-shaft 5, which arms 6 pass between the base-bars of the seat proper, so as to shift the seat as the back is reversed, the rockers 7 on the bottom of the seat-cushion giving the desired inclination of the seat-cushion in connection with the inclined sills C of the frame, as usual in such constructions. The two arms 6 at opposite ends of the seat secure the desired uniform movement of the opposite ends of the seat-cushion. If a foot-rest is not to be provided, which may be desirable in some cases where the steam-pipes are placed under the seat and too high for the use of a foot-rest, it will be understood that the same construction for moving the seat-cushion may be used, in which case the arm F may of course be omitted, and the lever I have any suitable form of sliding pivotal connection with either seat-arm F.

For locking the seat in its positions of use I provide novel means, consisting of the two catches 8, carried by levers 9, pivoted on the seat-frame and having the inner adjacent ends of the levers normally pressed outward by a spring 10, a thumb-push 11 in the outer plate of the seat-frame serving to press these ends of the levers inward, and thus draw the catches outward to release the seat-back, the outer back-arm F being caught by the square end of one or the other of the catches 8 when the back is fully reversed, as shown in Fig. 5.

A detail feature of importance in connection with the attachment of the back-arms F to the links G G' consists in the use of links made of two plates on opposite sides of the plate forming the seat-arm. This construction is shown clearly in section in Fig. 6, the preferred construction consisting of a stud 12, on the central portion of which the seat-arm is mounted and having reduced ends 13, on which the links are mounted. The use of the links made of two plates on opposite sides of the seat-arm avoids all twisting of the arm and links relatively to each other, and thus aids materially in securing a uniform movement and a durable construction.

The operation of the back, seat-cushion, and foot-rest in reversing the seat will be understood without extended description, Figs. 1, 3, and 4 showing clearly the position of the parts during reversal. As the reversing movement commences the back is raised by the action of the links G G', so that the back clears the cushion sufficiently to pass it, although close to the cushion in either position of use, the foot-rest being also raised, so as to clear the steam-pipes below the seat, as shown in Fig. 3. As the back swings over, the rotating foot-rest bar, through sleeve 4 and lever I, shaft 5, and arms 6, shifts the seat-cushion and the desired inclination is secured by the

rockers and inclined sills, as usual in such constructions.

As shown in Figs. 1 and 5, the seat is locked by the engagement of the square outer end of the left-hand catch 8 with the back-arm F. For reversal the thumb-push 11 is pressed in, moving this catch outward to release the seat-arm until the latter has passed the catch, when the thumb-push is released, and the locking of the seat-frame F with the other catch 8 is secured automatically as the seat-arm reaches its proper position on full reversal of the back.

It will be understood that modifications may be made in the construction shown without departing from the invention and that I am not to be limited to the exact form or arrangement of parts in the construction shown.

What I claim is—

1. The combination with a seat frame and back, of back-carrying arms at opposite ends of the seat extending a substantial distance below the seat frame and cushion, and pairs of links pivoted to the lower ends of the arms also a substantial distance below the seat-cushion and to the seat-frame, substantially as described.

2. The combination with a seat frame and back, of back-carrying arms at opposite ends of the seat extending a substantial distance below the seat frame and cushion, pairs of links pivoted to the lower ends of the arms also a substantial distance below the seat-cushion and to the seat-frame, and a foot-rest carried by the arms, substantially as described.

3. The combination with a seat frame and back, of back-carrying arms at opposite ends of the seat extending below the seat frame and cushion, pairs of links pivoted to the lower ends of the arms and to the seat-frame, an inwardly and downwardly extending arm on the inner back-arm below the seat frame and cushion, and a foot-rest carried by the outer back-arm and the inwardly and downwardly extending arm on the inner back-arm, substantially as described.

4. The combination with a seat frame and back and a movable seat-cushion, of back-carrying arms at opposite ends of the seat extending below the seat frame and cushion, pairs of links pivoted to the lower ends of the arms and to the seat-frame, an inwardly and downwardly extending arm on the inner back-arm below the seat frame and cushion, a foot-rest carried by the outer back-arm and the inwardly and downwardly extending arm on the inner back-arm, and a lever having its lower end connected to one of the back-arms for actuating the lever and having a connection with the seat-cushion for shifting the latter, substantially as described.

5. The combination with a seat frame and back and a movable seat-cushion, of back-carrying arms at opposite ends of the seat extending below the seat frame and cushion,

pairs of links pivoted to the lower ends of the arms and to the seat-frame, an inwardly and downwardly extending arm on the inner back-arm below the seat frame and cushion, a foot-rest carried by the outer back-arm and the inwardly and downwardly extending arm on the inner back-arm, and a lever having its lower end actuated by the foot-rest and its upper end provided with a connection to the seat-cushion for shifting the latter, substantially as described.

6. The combination with a seat frame and back and a movable seat-cushion, of back-carrying arms at opposite ends of the seat extending a substantial distance below the seat frame and cushion, pairs of links pivoted to the lower ends of the arms also a substantial distance below the seat-cushion and to the seat-frame, and a lever having its lower end connected to and actuated by one of the seat-arms and having a connection with the seat-cushion for shifting the latter, substantially as described.

7. The combination with a seat frame and back and a movable seat-cushion, of back-carrying arms at opposite ends of the seat extending a substantial distance below the seat frame and cushion, pairs of links pivoted to the lower ends of the arms also a substantial distance below the seat-cushion and to the seat-frame, a foot-rest carried by the back-arms, and a lever having its lower end connected to one of the seat-arms for actuating the lever and having a connection with the seat-cushion for shifting the latter, substantially as described.

8. The combination with a seat frame and back, of back-carrying arms at opposite ends of the seat extending a substantial distance below the seat frame and cushion, pairs of links pivoted to the lower ends of the arms also a substantial distance below the seat-cushion and to the seat-frame, a foot-rest carried by the back-arms, and a lever having its lower end actuated by the foot-rest and its upper end provided with a connection to the seat-cushion for shifting the latter, substantially as described.

9. The combination with a seat-back and back-carrying arms F, of bars 3 on which the lower ends of the back-arms rest near the floor normally, and pairs of links G, G' on which the lower ends of said arms are mounted, substantially as described.

10. The combination with a seat-back and back-carrying arms F, extending a substantial distance below the seat frame and cushion, of pairs of links G, G' also below the seat-cushion on which the lower ends of said arms are mounted, and rod 2 connecting links at opposite ends of the seat, substantially as described.

11. The combination with a seat-back and back-carrying arms F, extending a substantial distance below the seat frame and cushion, of

pairs of links G, G' also below the seat-cushion on which the lower ends of said arms are mounted, each of said links consisting of two plates on opposite sides of the seat-arm, and rod 2 connecting links at opposite ends of the seat, substantially as described.

12. The combination with a seat-back and back-carrying arms F, of pairs of links G, G' on which the lower ends of said arms are mounted, foot-rest H carried by said arms and free to rotate, lever I having a sliding connection with said foot-rest, and a connection between the upper end of said lever and seat-cushion, substantially as described.

13. The combination with a seat-back and back-carrying arms F, of pairs of links G, G' on which the lower ends of said arms are mounted, foot-rest H carried by said arms and free to rotate, lever I having a sliding connection with said foot-rest, shaft 5 actuated by said lever, and arms 6 at opposite ends of said shaft for shifting the seat-cushion, substantially as described.

14. The combination with a seat-back and back-carrying arms F, of pairs of links G, G' on which the lower ends of said arms are mounted, lever I having a sliding connection with one of said back-arms, shaft 5 actuated by said lever, and arms 6 at opposite ends of said shaft for shifting the seat-cushion, substantially as described.

15. The combination with a seat-back and back-carrying arms F, of pairs of links G, G' on which the lower ends of said arms are mounted, arm F' on one of said back-arms below the seat-cushion, and a foot-rest carried by said arm F' and the other back-arm, substantially as described.

16. The combination with a seat frame and back and back-reversing arms, of catch-levers 9 carrying locking-catches 8 and spring-pressed to normally hold the catches in locking position, and an unlocking device in the frame for releasing either catch, substantially as described.

17. The combination with a seat-back and back-carrying arms F extending a substantial distance below the seat frame and cushion, of pairs of links G, G' also below the seat-cushion on which the lower ends of said arms are mounted, each of said links consisting of two plates on opposite sides of the back-arm, substantially as described.

18. The combination with a seat frame and back, of back-carrying arms at opposite ends of the seat, extending a substantial distance below the seat frame and cushion, and pairs of links pivoted to the lower ends of the arms and to the seat-frame and constituting, in effect, movable fulera for said back-carrying arms, located a substantial distance below said cushion, substantially as described.

19. The combination with a seat frame and back, of back-carrying arms at opposite sides of the seat, extending a substantial distance

below the seat frame and cushion, and pairs
of links pivoted to the lower ends of the arms
and to the seat-frame, whereby, said back-
carrying arms being relatively long, said back
5 may be reversed by the application of mini-
mum power, substantially as described.

In testimony whereof I have hereunto set

my hand in the presence of two subscribing
witnesses.

JOHN S. JOHNSTON.

Witnesses:

C. J. SAWYER,
T. F. KEHOE.