

No. 795,596.

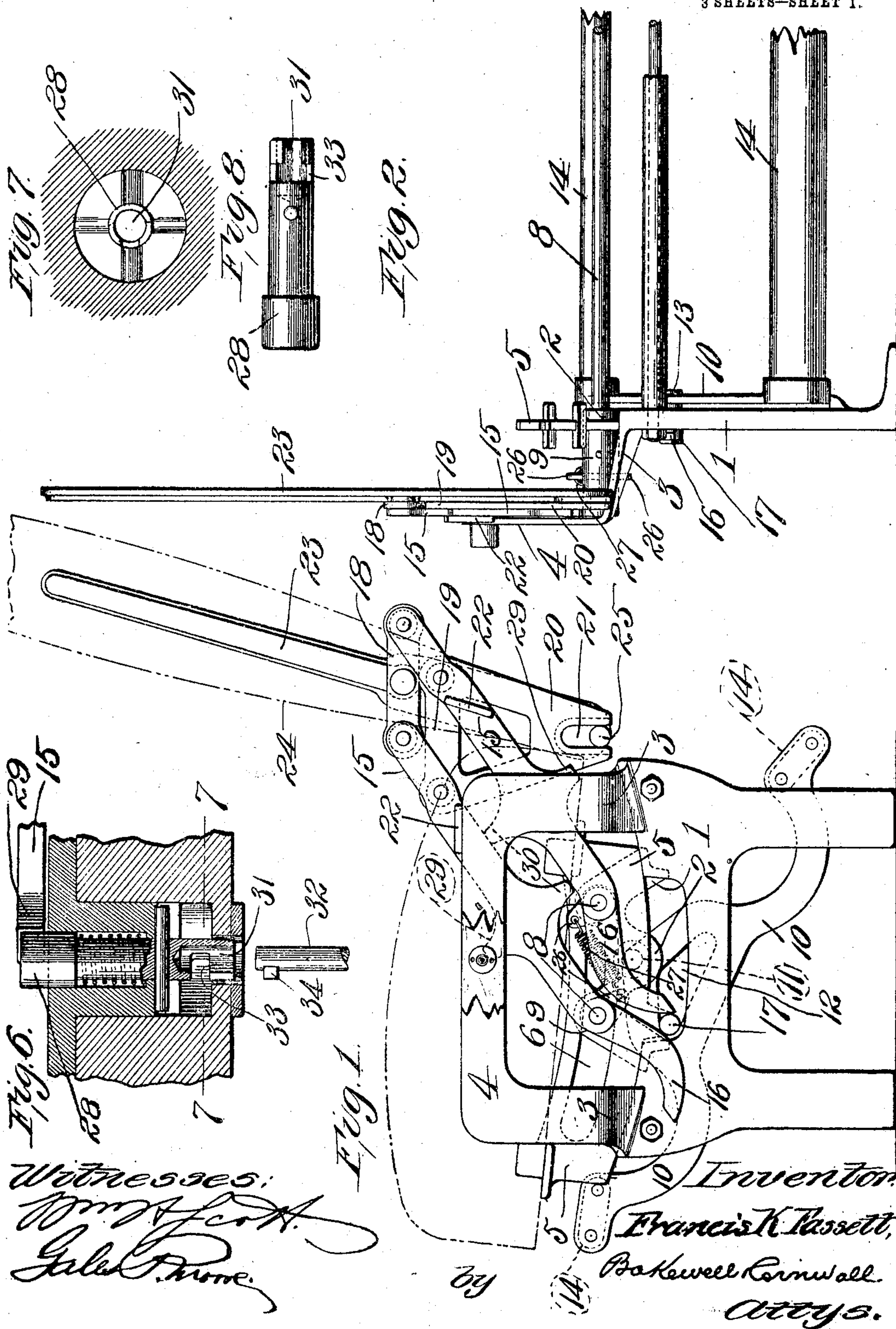
PATENTED JULY 25, 1905.

F. K. FASSETT.

CAR SEAT.

APPLICATION FILED JULY 20, 1903.

3 SHEETS—SHEET 1.



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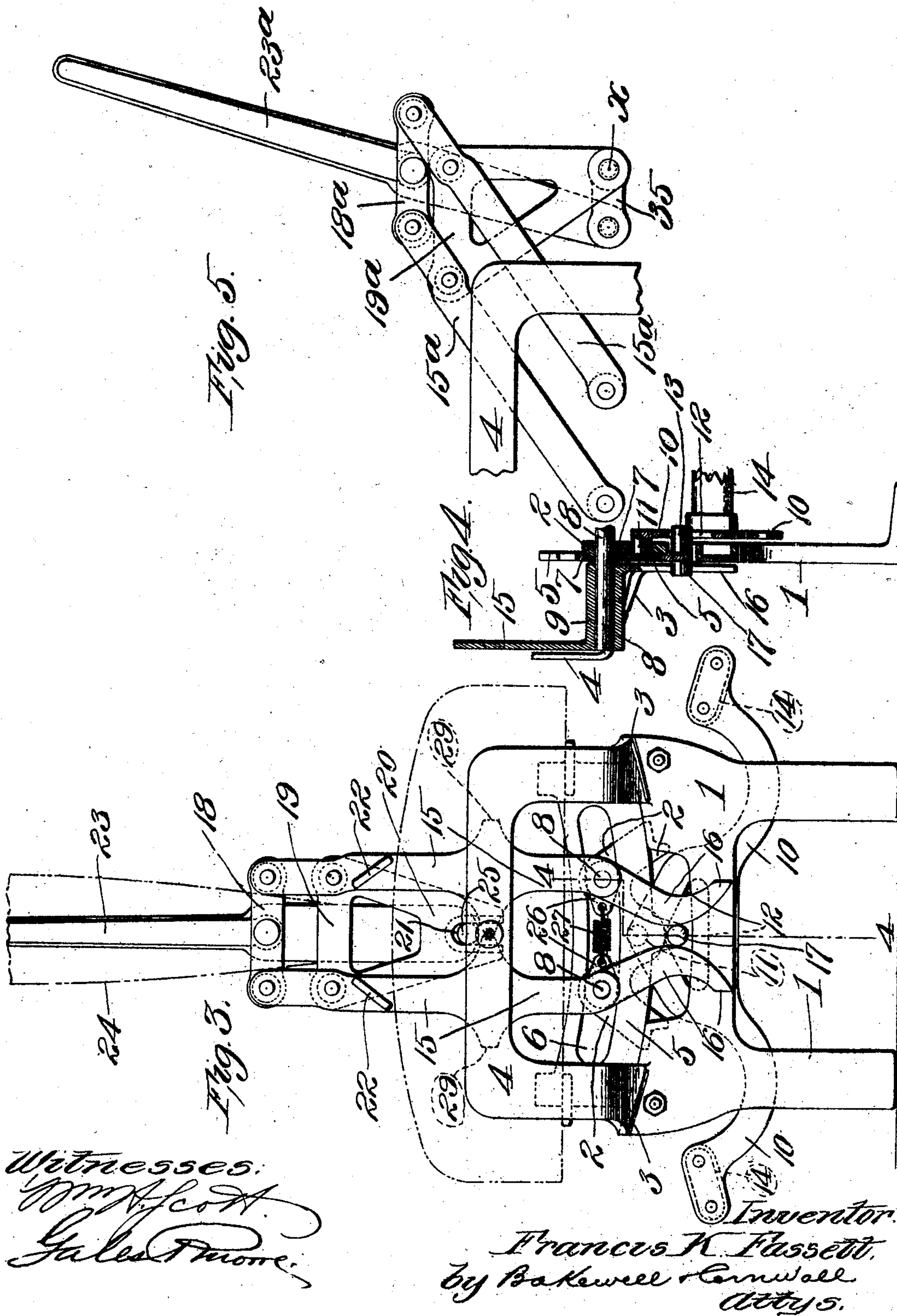
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3 SHEETS—SHEET 2.





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3 SHEETS—SHEET 3.

Fig. 10.

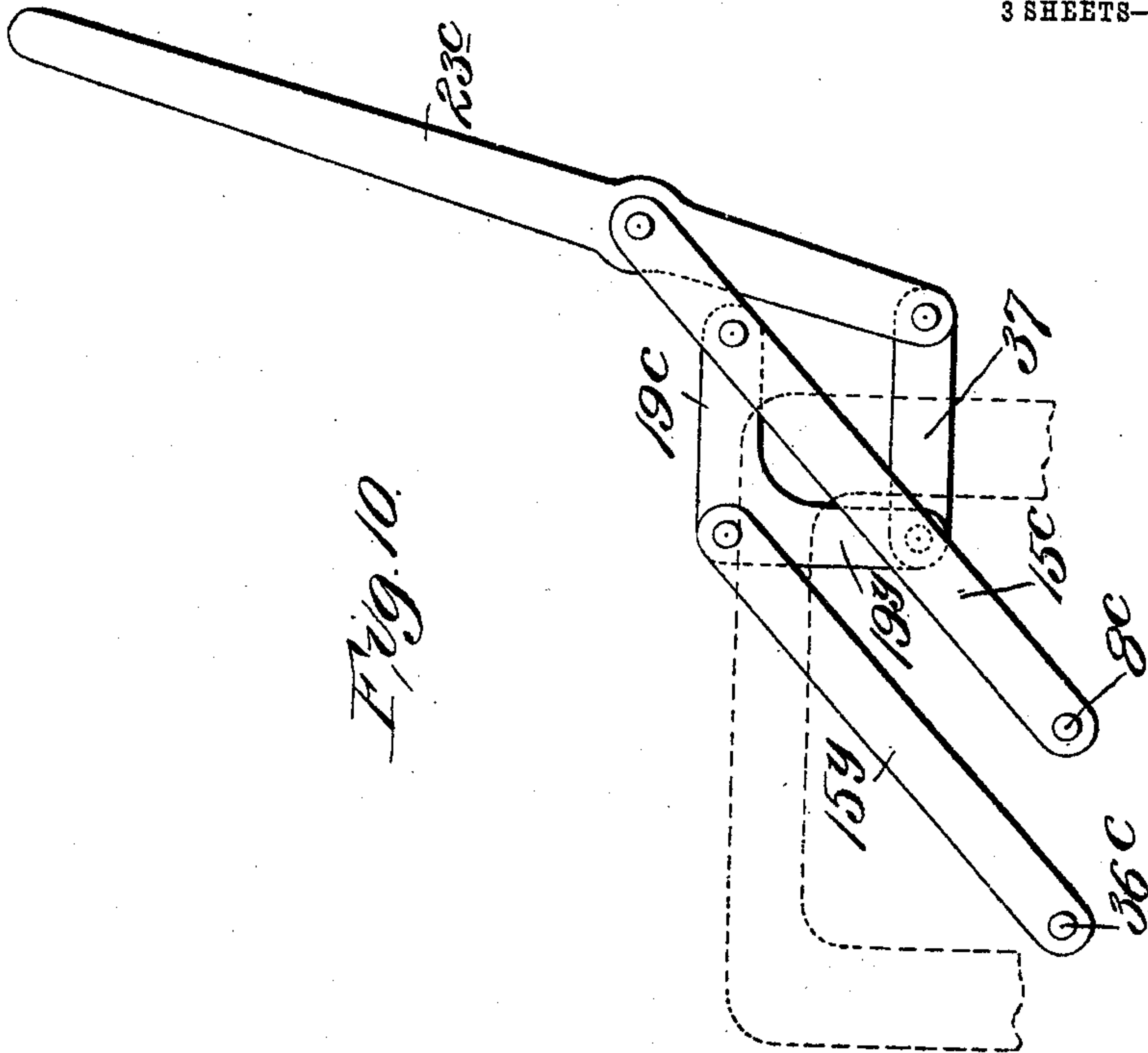
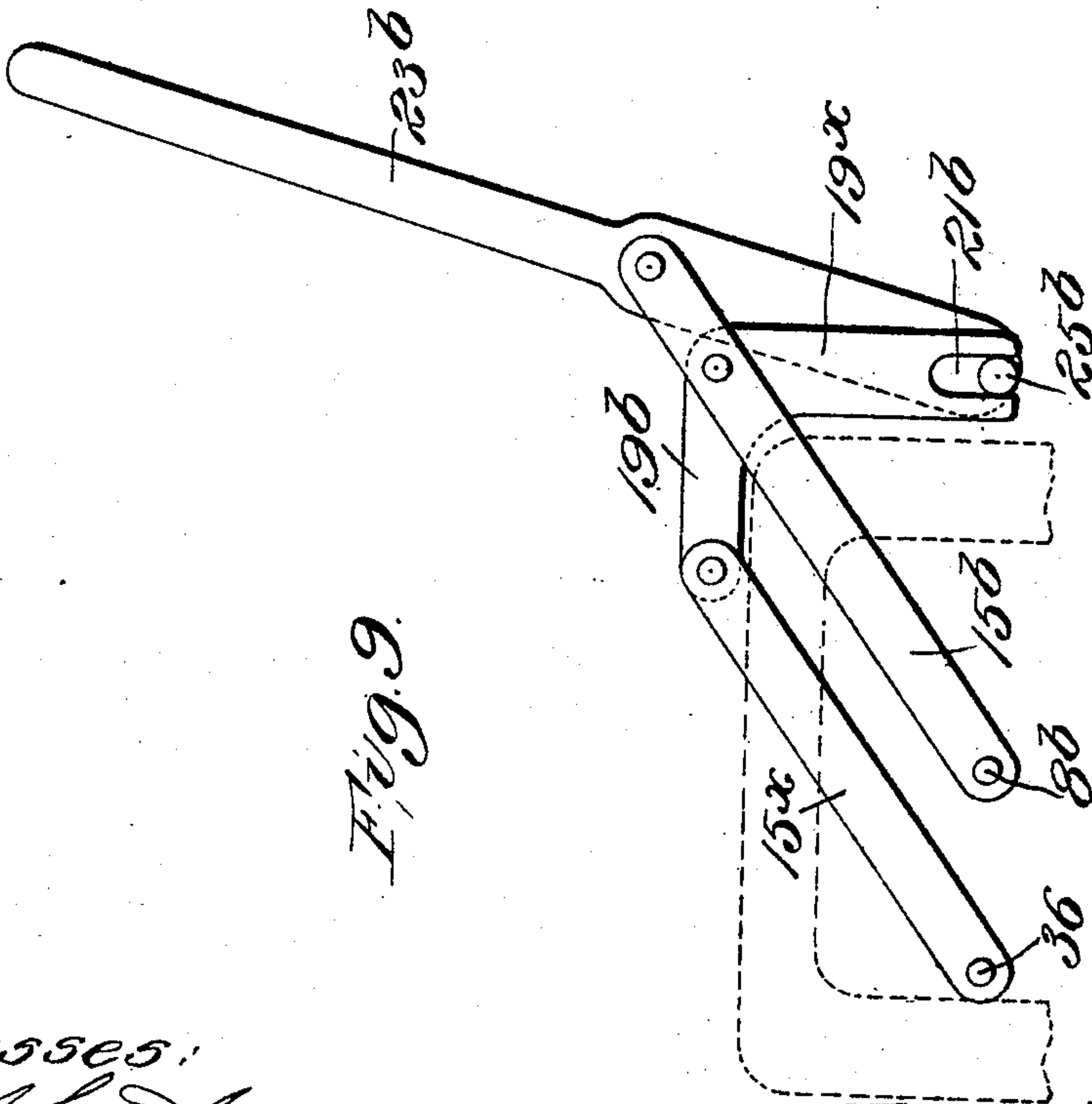


Fig. 9.



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# UNITED STATES PATENT OFFICE.

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## CAR-SEAT.

No. 795,596.

Specification of Letters Patent.

Patented July 25, 1905.

Application filed July 20, 1903. Serial No. 166,289.

*To all whom it may concern:*

Be it known that I, FRANCIS K. FASSETT, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Car-Seats, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an end elevation, the seat-back and the seat proper being shown in broken lines. Fig. 2 is an edge view, certain of the parts being broken away in order to economize space. Fig. 3 is an end view showing the movable elements in central position. Fig. 4 is a fragmentary sectional elevation on about the line 4 4 of Fig. 3, certain studs carried by the saddle-plate being shown in full lines. Fig. 5 illustrates a modification. Fig. 6 is a horizontal sectional view illustrating a form of lock which can be employed. Fig. 7 is an elevation, partly in section, on about the line 7 7 of Fig. 6. Fig. 8 is a view of the locking-bolt. Fig. 9 illustrates a second modification, and Fig. 10 illustrates a third modification.

This invention relates to improvements in car-seats, the present structure being of what is known as the "walk-over" type.

The primary object is to provide a convenient and strong structure which produces practically no friction in its operation.

To this end and also to improve generally upon devices of the character indicated the invention consists in the various matters hereinafter described and claimed.

Referring now more particularly to the drawings, 1 indicates the end support, which has an upper extension 2. It will of course be understood that the side of the car can, if desired, be employed as an end support. Near or at its upper end the end support has outwardly-extending offset 3, from which rises a U-shaped member 4, to which the seat-arm is adapted to be connected in any usual or desired manner.

The upper edge of what may be termed the "body portion" of the end support is curved to produce a rest and guide for the saddle 5, upon which the seat proper is supported, the curvature of said saddle-support and guide being provided for well-understood purposes.

The upper projection 2 of the end support extends upon the inner side of the saddle, and thus forms a guide for the latter. The saddle is provided with a curved slot 6, through which project bosses 7 on the upper portion 2 of the end support, these bosses being equidistant from the vertical center of the car-seat, as shown most clearly in Fig. 3. A shaft 8, which extends across the car-seat, is journaled in each of said bosses, said shafts projecting beyond the outer sides of the saddles, and to each of these shafts is pinned or otherwise secured a sleeve 9, the saddle being guided between the inner ends of said sleeves and the before-mentioned upper portion 2 of the end support. It will be manifest that the saddle can slide upon the upper edges of the body portions of the end supports and that the inclination of the seat can thus be reversed in a manner which is well understood.

Upon the inner side of each end support is a frame-plate 10, which is hung from its adjacent end support by means of a pivot-stud 11, which enters a suitable socket in the said portion 2 of said end support. Each of these frame-plates has cam-surfaces 12 at a point beneath the said pivot-stud 11, said surfaces inclining downwardly and outwardly from the vertical center of the frame-plate when such plate is in what may be termed a "neutral" or horizontal position, as shown in Fig. 3. A stud 13 projects inwardly from each saddle-plate and coöperates with said cam-surfaces 12 of the adjacent end frame-plates 10. Foot-rest bars 14 extend between said end frame-plates 10 and are carried thereby. It will be manifest that as the saddle is moved the studs 13 upon the saddle-plates serve to rock the foot-rest frame, the purpose of rocking such frame being well understood.

Extending upwardly from each sleeve 9, at or near the outer end thereof, is a lever-arm 15, and extending downwardly from each sleeve and near the inner end thereof is a lever-arm 16, one of said lever-arms 16 lying upon each side of a stud 17, which projects outwardly from the saddle-plate 5. Each lever-arm 16 has a curved or cam surface adjacent said stud 17, as clearly illustrated in Figs. 1 and 3, in order to provide for proper movement of said stud 17 by the said lever-arms 16. It will now be apparent that said lever-arms 16 being caused to move together, as



will be more fully explained hereinafter, when said lever-arms are rocked said stud 17 is moved, and in this manner the seat-carrying saddle is moved upon its curved support and the foot-rest frame is rocked upon its pivotal stud.

The before-mentioned upwardly-extending lever-arms 15 are arranged in pairs at each end of the seat, and the said lever-arms of a pair are pivotally connected to opposite ends of a horizontal link 18. Intermediate said link 18 and the shafts 8 is a second horizontal link 19, to the opposite ends of which the said pair of lever-arms 15 are respectively pivoted. Said link 19 is provided with a depending extension 20, which has a central vertical slot 21, open at its lower end. Upon each lever-arm 15 is a stop lug or projection 22, one of these lugs being adapted to engage the portion 4 of the end support, as clearly shown in Fig. 1, in order to limit the movement of the levers in one direction and the other of said lugs being adapted to correspondingly engage said portion 4 of the end support in order to limit the movement of said levers in the opposite direction. The back support or plate 23, to which the seat-back proper, 24, is secured in a well-understood manner, is pivoted to the link 18 and has at its lower end a stud 25, which is received in the before-mentioned slot 21 in the link-plate produced by the link proper, 19, and its extension 20.

It will be apparent that the stud 25 has less travel in a curved line than has the point at which the back-carrying plate 23 is pivoted to the link 18 and that when the parts are in neutral or central position, as shown in Fig. 3, the said pivotal point and the stud 25 are in substantially vertical alinement. Therefore if the lever-arms 15 be thrown to one side or the other the back will be inclined for well-understood purposes. In the movements necessary to transfer the back from one side of the seat to the other there is practically no friction and the parts are strongly supported and connected together. By reason of the structure heretofore described it will be manifest that as the back is thrown the seat proper and the foot-rest are correspondingly moved.

Preferably each sleeve 9 is provided with a short rock-arm 26, which extends inwardly or toward the vertical center of the seat, these rock-arms being in substantially horizontal alinement when the sleeves are in central or neutral position, as shown in Fig. 3, and a spring 27 has its opposite ends connected to said respective rock-arms. Therefore when the rock-arms are in central or neutral position the spring is not under tension (or is under minimum tension,) while as the sleeves 9 rock in one direction or the other said rock-arms 27 move away from each other, and thus place the spring 27 under tension, as shown in Fig. 1. This spring serves to counterbalance the seat-back and the mechanism by

which the same is carried, and thus prevents the back from reaching the end of its movement with a sudden jar.

Preferably means is provided for locking the parts in either of the positions to which they may be thrown. As herein illustrated, a locking-bolt 28 is seated in the portion 4 of the end support at one end of the seat and is adapted to project beyond the inner side of said portion of the end support, the lever-arms 15 lying adjacent to said inner face of said portion of the end support. When the lever-arms are thrown to one side or the other, a locking-surface 29 upon the lever-arm which lies uppermost is engaged by the projecting locking-bolt, as illustrated in Figs. 1 and 5, and the movable parts of the seat are thus locked in position. Upon retracting the bolt, however, the parts of the seat can be thrown into opposite position. The lever-arms are provided with inwardly-extending portions 30, which when the lever-arms 15 are in central or neutral position, as shown in Fig. 3, lie a distance from each other which is less than the width of the inner end of the locking-bolt, so that after the bolt is retracted and one of the lever-arms is moved sufficiently to cause the same to extend over the end of the locking-bolt the inner end of the locking-bolt bears against the face of one or the other of the lever-arms 15 until both of said lever-arms have passed the inner end of said locking-bolt.

Manifestly many types of locking-bolts can be employed. The bolt herein shown has a socket 31 adapted to receive a key 32, said socket opening into an angular slot 33, in which an angular projection 34 upon the key can be received when the key is inserted and partially turned, so that the bolt can be retracted by the key in a manner which will be readily apparent.

In the modification illustrated in Fig. 5 the lever-arms 15<sup>a</sup>, the link 18<sup>a</sup>, and the back-support 23<sup>a</sup> are similar to the corresponding parts in the structure heretofore described. The link-plate 19<sup>a</sup> is pivoted to the lever-arms 15<sup>a</sup> in substantially the same manner in which the corresponding link-plate of the first-described structure is pivoted to the lever-arm 15; but said link-plate 19<sup>a</sup> is connected to the back-support 23<sup>a</sup> by a link 35. As the back is thrown from one position, as that illustrated in Fig. 5, toward its opposite position the back-support 23<sup>a</sup> is elevated with respect to the pivotal point between the link-plate 19<sup>a</sup> and the link 35, so that in the movement of the structure from one position to the reverse position the lower portion of the back-support 23<sup>a</sup> is thrown from one side of the pivotal point X to the other side thereof, thus reversing the inclination of the seat-back as desired.

In the modification illustrated in Fig. 9 a single rock-shaft 8<sup>b</sup> is employed, this rock-shaft extending across the car-seat in a man-



ner which will be well understood. Fixedly connected to each end of the shaft is a lever 15<sup>b</sup>. A second lever 15<sup>x</sup> is suitably pivoted to the supporting-frame, as by a stud 36, so that the levers 15<sup>b</sup> and 15<sup>x</sup> form a pair generally similar to the levers 15, previously described. Said pair of levers are connected by a link 19<sup>b</sup>, which has a depending arm 19<sup>x</sup>, provided with a guide-slot 21<sup>b</sup>. The seat-back 23<sup>b</sup> is pivoted to the end of the lever 15<sup>b</sup> which extends above the before-mentioned link 19<sup>b</sup>, and a pin or stud 25<sup>b</sup> upon the seat-back is received and guided in said guide-slot 21<sup>b</sup>.

In the modification shown in Fig. 10 a single shaft 8<sup>c</sup> is provided, as just described in connection with the modification shown in Fig. 9, and the levers 15<sup>c</sup>, connected to said shaft, are substantially similar to levers 15<sup>b</sup>, above described, the levers 15<sup>y</sup>, pivoted to the frame, as by the studs 36<sup>c</sup>, being substantially similar to the levers 15<sup>x</sup>, described in connection with the modification shown in Fig. 9. Said levers 15<sup>c</sup> and 15<sup>y</sup> are connected by a link 19<sup>c</sup>, which has a depending arm 19<sup>y</sup>, and the seat-back 23<sup>c</sup> is pivoted to the lever 15<sup>c</sup>, as in connection with the modification shown in Fig. 9. The lower end of said seat-back is connected to said arm 19<sup>y</sup> by a link 37, which serves as a means for guiding the lower end of the seat-back in the movements of the latter.

It is believed that the operation of the modified forms last described will be clearly understood.

I am aware that minor changes in the construction, arrangement, and combination of the several parts of my device can be made and substituted for those herein shown and described without in the least departing from the nature and principle of my invention.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In a car-seat, a support, a pair of lever-arms each of which is pivoted to said support, a link connected to said lever-arms, a seat-back carried by said lever-arms and in pivotal connection therewith, and guiding connection between said seat-back and said link; substantially as described.

2. In a car-seat, a support, a pair of lever-arms each of which is pivoted to said support, a link connected to said lever-arms, a seat-back carried by said lever-arms and in pivotal connection therewith above the connection between said lever-arms and said link, and guiding connection between said link and said seat-back; substantially as described.

3. In a car-seat, a support, a pair of lever-arms each of which is pivoted to said support, a link connected to said lever-arms, a seat-back carried by said lever-arms and in pivotal connection therewith above the connection between said lever-arms and said link,

and guiding connection between said link and said seat-back and below said connection between said lever-arms and said link; substantially as described.

4. In a car-seat, a support, a pair of lever-arms each of which is pivoted to said support, a link connected to said lever-arms, a seat-back pivoted to said link, a guide for said seat-back carried by said lever-arms, and guiding connection between said guide and said seat-back; substantially as described.

5. In a car-seat, a support, a pair of lever-arms each of which is pivoted to said support, a link connected to said arms, a seat-back pivoted upon said link, a second link connected to said arms, and guiding connection for said seat-back between said second link and said seat-back; substantially as described.

6. In a car-seat, a support, a pair of lever-arms each of which is pivoted to said support, a link connecting said arms, a seat-back pivoted upon said link, a second link connecting said arms, and slot-and-pin connection between said second link and said seat-back for guiding the latter; substantially as described.

7. In a car-seat, a support, a pair of lever-arms each of which is pivoted to said support, a link connecting said arms, a seat-back pivoted upon said link at a point intermediate said arms, a guide for said seat-back carried by said arms, and guiding connection between said guide and said seat-back; substantially as described.

8. In a car-seat, a pair of lever-arms, a seat-back connected to said arms, and a spring having its opposite ends in connection with parts connected to said lever-arms, and movable away from each other as said lever-arms move from neutral position; substantially as described.

9. In a car-seat, a pair of lever-arms, a seat-back connected to said arms, rock-arms connected to said lever-arms and movable away from each other as said lever-arms move from neutral position, and a spring having its opposite ends connected to said rock-arms; substantially as described.

10. In a car-seat, a saddle-plate, a projection thereon, a pair of lever-arms, a seat-back connected thereto, a second pair of lever-arms between which said projection is received, a foot-rest frame, and a second projection upon said saddle-plate and cooperating with a surface upon said foot-rest frame to move the latter upon movement of said saddle-plate; substantially as described.

11. In a car-seat, a support provided with a boss, a shaft through said support and said boss, a sleeve upon said shaft, a lever-arm upon said sleeve, a seat-back connected to said lever-arm, and a saddle-plate having a slot receiving said boss, said saddle-plate lying between said support and said sleeve; substantially as described.

12. In a car-seat, a seat-back, a support, a



pair of lever-arms carrying said seat-back, said lever-arms being pivoted upon said support and having movement across a centrally-located point to permit both said lever-arms to lie upon either side of said point, and a locking-bolt at said centrally-located point and projecting into the path of said movement of said lever-arms, whereby when said lever-arms are in either extreme position they both lie upon the same side of said bolt and said bolt prevents their movement toward opposite position; substantially as described.

13. In a car-seat, a support, a locking-bolt upon said support, a pair of lever-arms having movement across said bolt, and a seat-back connected to said lever-arms, the distance between said lever-arms when adjacent surfaces of said arms are passing said bolt being less than the width of said bolt; substantially as described.

14. In a car-seat, the combination with parallel lever-arms, of means for maintaining parallelism thereof, a seat-back carried by said lever-arms and movable with respect to said means for maintaining parallelism, pivotal connection between said seat-back and said lever-arms, and guiding connection between said means and said seat-back for controlling the pivotal movement of the latter; substantially as described.

15. In a car-seat, the combination with parallel lever-arms, of a seat-back supported by said lever-arms, and means for maintaining parallelism of said lever-arms and for guiding said seat-back, said means being located between, on the one hand, the points of support between the seat-back and the lever-arms, and, on the other hand, the points of support of said lever-arms; substantially as described.

16. In a car-seat, the combination with parallel lever-arms connected at their free ends, a seat-back supported adjacent to the free ends of said arms, and a connection between the lower end of said seat-back and said lever-arms for guiding the seat-back, said guiding

connection being below the point of support between said seat-back and said lever-arms, and being independent of a particular configuration of the upper ends of said arms, substantially as described.

17. The combination with a pair of lever-arms, of a link connecting said arms and maintaining parallelism thereof, a seat-back, a pivotal connection between said seat-back and said link and means located below said link and therefore below the upper ends of said arms for guiding said seat-back in its pivotal movement, substantially as described.

18. In a car-seat, the combination with parallel lever-arms, of a seat-back, a carrying-link for said seat-back connecting the upper ends of said arms and maintaining parallelism thereof, and means also connected to said lever-arms below their upper ends and to the lower ends of the seat-back, for guiding said seat-back, substantially as described.

19. In a car-seat, the combination with parallel lever-arms, of a link connecting the upper ends thereof and forming a carrier for the seat-back, a seat-back pivotally connected to said carrying-link, a second link also connected to said arms, both of said links serving to maintain parallelism of said arms, and a guiding connection between said second link and said seat-back; substantially as described.

20. In a car-seat, a support, two arms pivoted at their lower ends to said support, a seat-back and connections between the same and said support through said arms, a link connected with said arms and a guiding connection between the same and said back, substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 17th day of July, 1903.

FRANCIS K. FASSETT.

Witnesses:

G. A. PENNINGTON,  
GEORGE BAKEWELL.