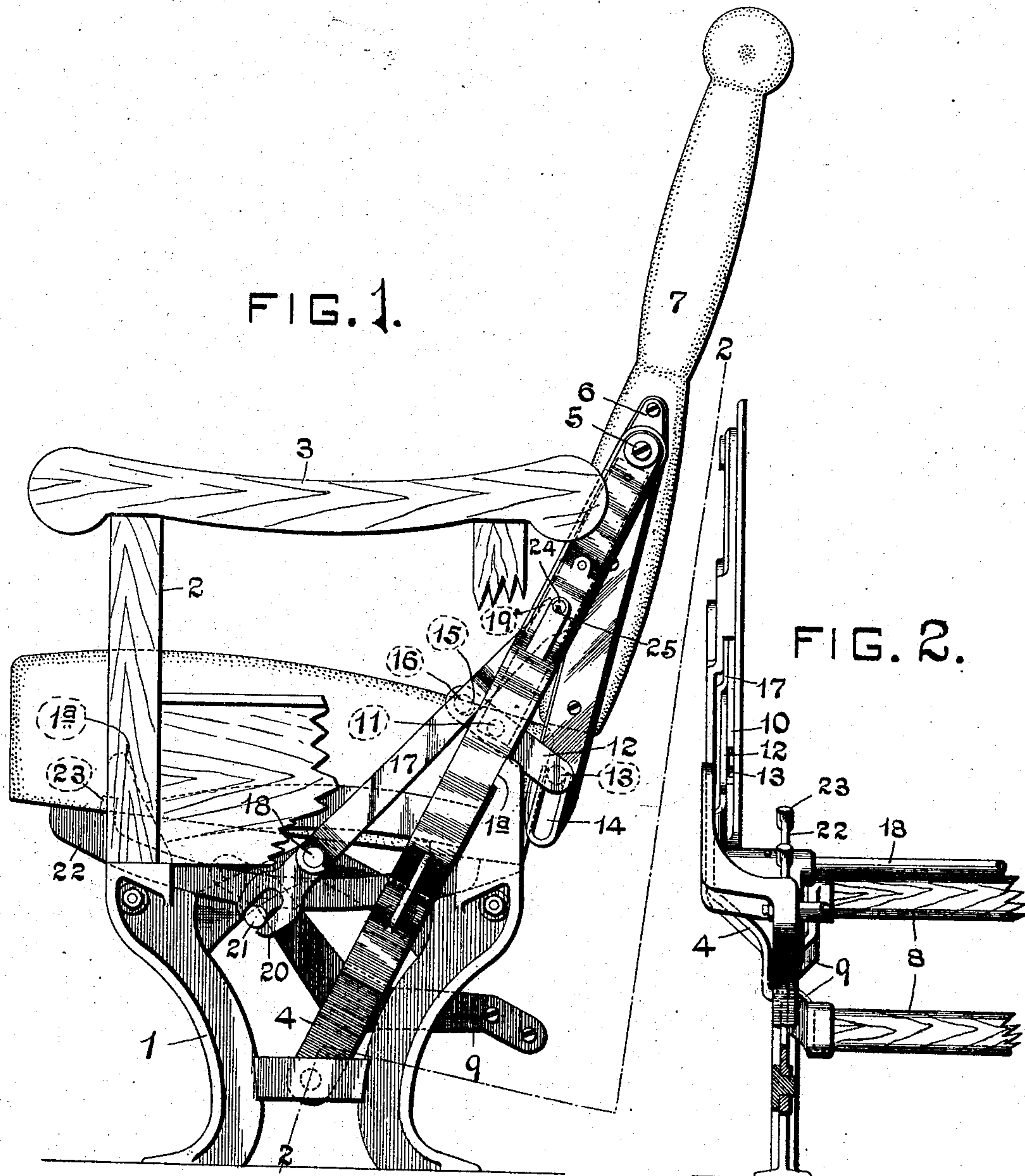


No. 806,652.

PATENTED DEC. 5, 1905.

F. K. FASSETT.  
REVERSIBLE CAR SEAT.  
APPLICATION FILED NOV. 5, 1904.

3 SHEETS—SHEET 1.



WITNESSES

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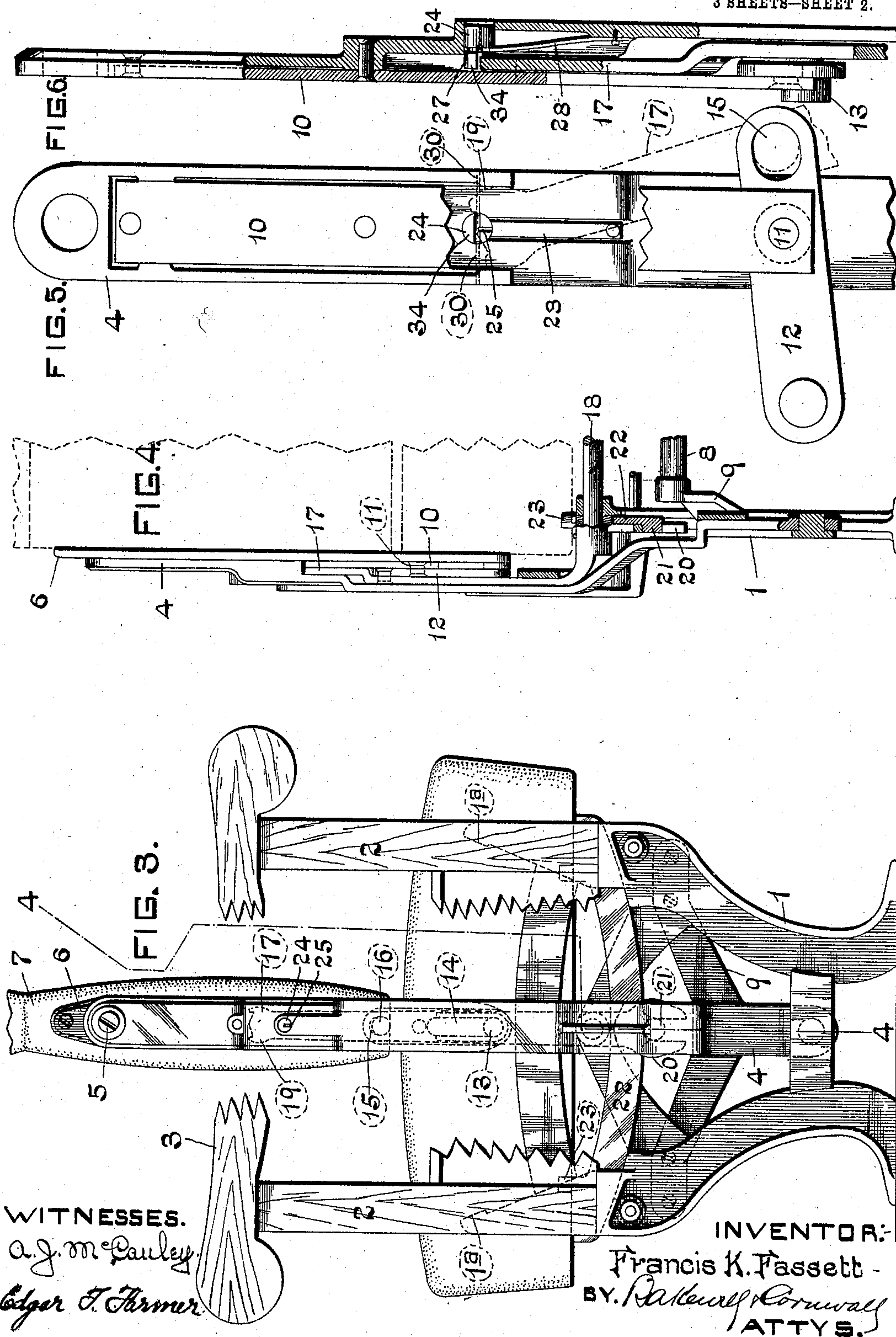
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

FIG. 9.

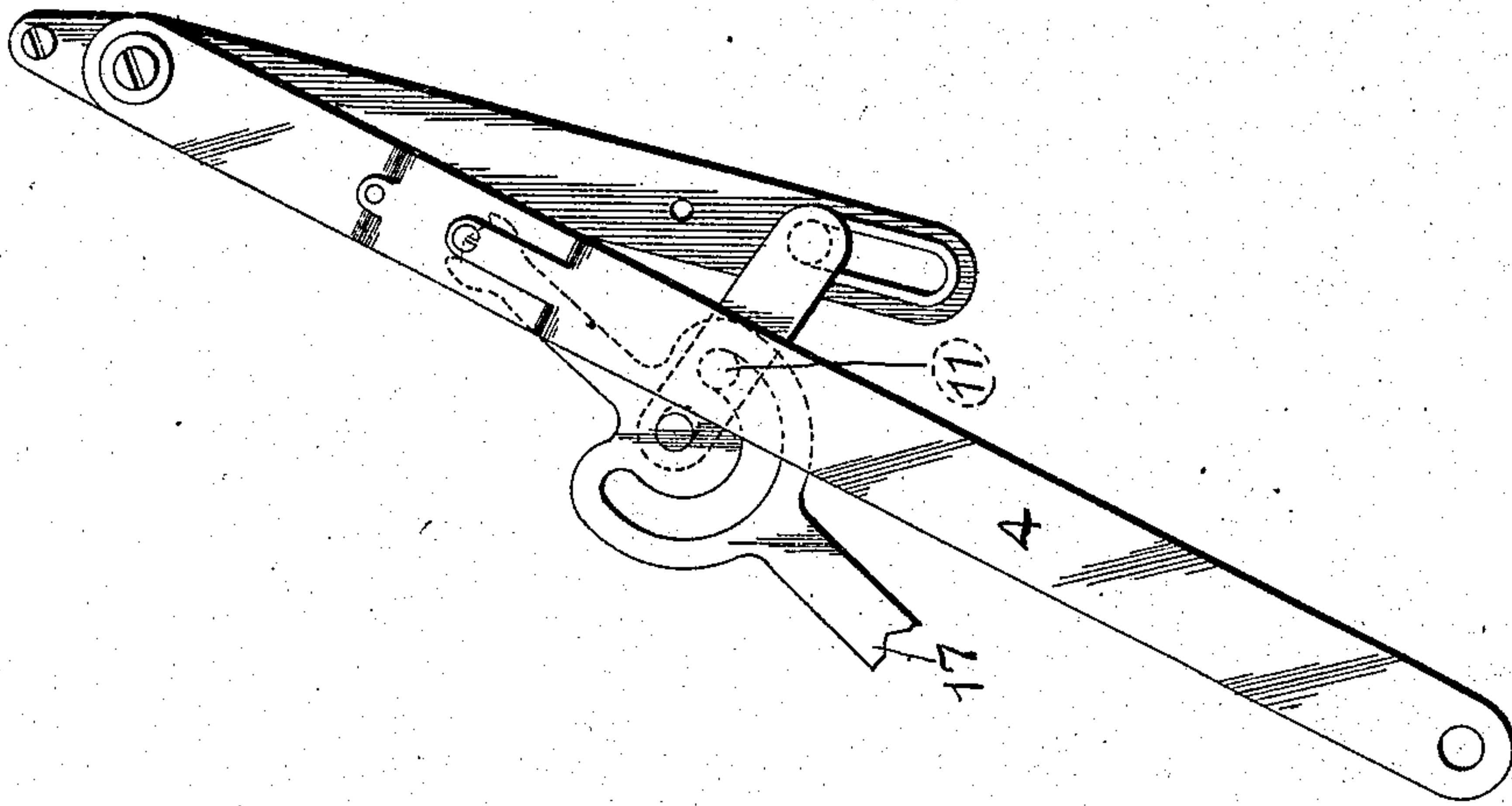


FIG. 8.

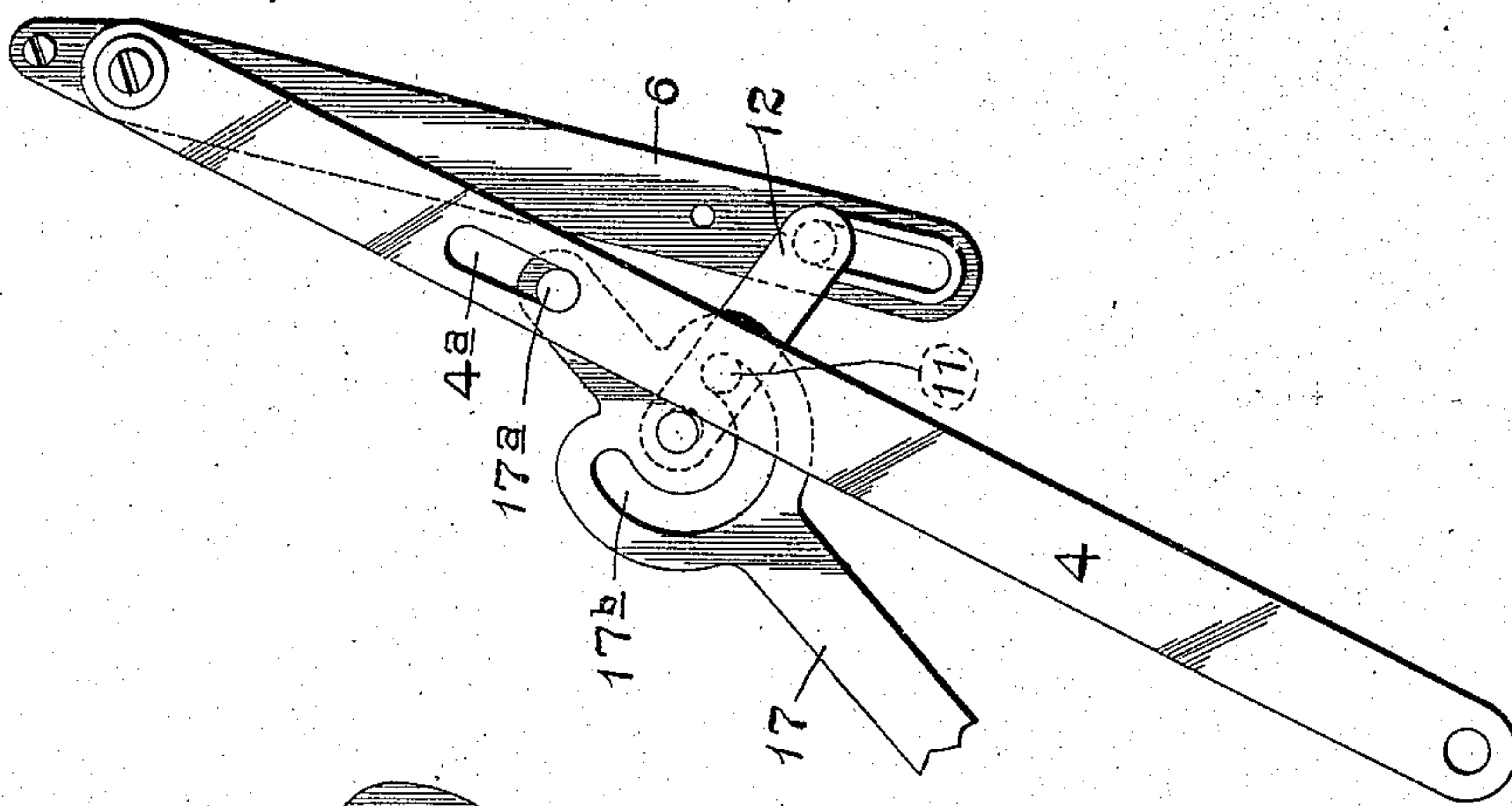
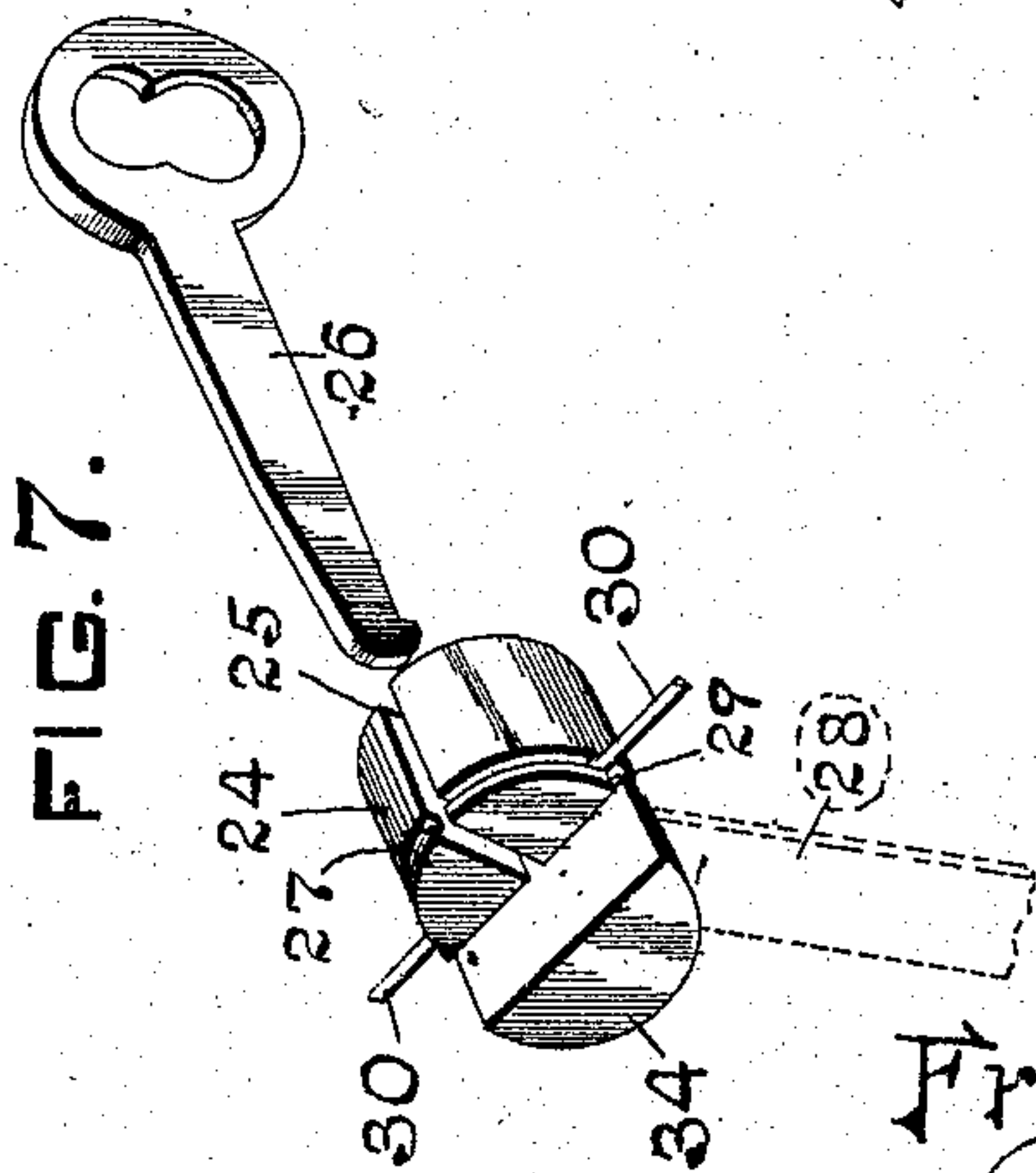


FIG. 7.



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# UNITED STATES PATENT OFFICE.

FRANCIS K. FASSETT, OF ST. LOUIS, MISSOURI.

## REVERSIBLE CAR-SEAT.

No. 806,652.

Specification of Letters Patent.

Patented Dec. 5, 1905.

Application filed November 5, 1904. Serial No. 231,586.

*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 Reversible 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 a side elevational view of my improved car-seat. Fig. 2 is a sectional view on the line 2 2 of Fig. 1 with the seat back and bottom removed. Fig. 3 is a side elevational view with the seat-back in a central position. Fig. 4 is a vertical sectional view on the line 4 4 of Fig. 3. Fig. 5 is a detail view showing the upper portion of the seat-back-carrying lever and its connections. Fig. 6 is a sectional view through said lever. Fig. 7 is a detail view of the lock for the seat-back. Fig. 8 is a modified form of rock-arm. Fig. 9 is another modified form of said rock-arm.

This invention relates to a new and useful improvement in reversible car-seats, the object being to simplify the construction of seats of this character, and also to reduce the cost of manufacture of said seats.

With these objects in view the invention consists in the construction, arrangement, and combination of the several parts of my device, all as will be more specifically described hereinafter and afterward pointed out in the claims.

In the drawings, 1 indicates the side frames in the form of castings, which support posts 2, carrying the arm 3 next the aisle. The post 2 and the arm 3 may be omitted from the seat next the window; but there is preferably one of the castings 1 at each end of the seat. In the following description I will refer to the mechanism located at one end of the seat; but it is to be understood that this mechanism is duplicated at the opposite end of the seat.

Mounted upon the casting 1, preferably on the cross-piece forming a connection between the supporting-legs of said casting, is what I will term the "main lever" 4, said main lever being pivotally connected at its upper end by means of the pivot-bolt 5 to the bracket 6, secured to the lower portion of the seat-back 7. The pivotal connection between the main lever 4 and the seat-back, as shown in

the drawings, is preferably slightly below the center of the seat-back. The main lever 4 in addition to supporting the seat-back also carries foot-rests 8, said foot-rests being mounted upon the ends of arms 9, extending from opposite sides of the main lever 4 near its lower end. There are several ways of constructing the upper end of this main lever 4 in order to adapt it for its associate parts, and I have shown three of such constructions in the drawings; but it is obvious that changes other than those illustrated in the drawings could be made without departing from the nature and principle of my invention.

In the preferred construction illustrated in Figs. 1 to 6, inclusive, the upper end of the main lever 4 is recessed on its inner face, said recess being covered by a tongue 10, riveted to the upper end of the lever and extending down over said recess to form an inclosed space. The tongue 10 may for all intents and purposes be considered as a part of the main lever 4, and in some instances the main lever 4 may be cast with a core, so that said tongue 10 will be an integral part thereof. The lower end of the tongue 10 carries a pivot-pin 11, on which is pivotally mounted a lever 12, said lever being formed with an opening of slightly-larger diameter than the pivot-pin 11, so as to allow free movement of the lever without cramping or binding. One end of lever 12 is provided with a projection 13 in the form of a pin or roller operating in a slot 14, formed in the lower end of the bracket-plate 6, which is secured to the seat-back. The opposite end of the lever 12 is provided with an elongated slot 15, which slot receives a pin or roller 16, carried by a rock-arm 17, mounted upon a rock-shaft 18, journaled in the upper cross-piece of the end casting 1 and extending the length of the seat, there being two rock-arms 17 arranged upon the ends of said rock-shaft. The upper end of each rock-arm 17 is provided with an enlarged head 19, having surfaces which are adapted to engage the marginal flanges or side walls which form the recess in the upper end of the main lever 4. As shown in Fig. 6, this rock-arm 17 is located between the main lever 4 and the lever 12, and in this manner it is possible for the rock-arm 17 to pass the pivotal point 11 of the lever 12 in reversing the seat. The rock-shaft 18 has depending slotted arms 20, which engage projections 21 on a sliding seat-frame 22. The end castings 1 are provided with curved ways



for accommodating the sliding frame 22, which frame 22 is provided with dowels 23, which fit into suitable openings in the seat-bottom, whereby the seat-bottom is prevented from becoming displaced with respect to the frame 22. The end castings 1 are provided with upward extensions 1<sup>a</sup>, which serve as abutments for the main lever 4.

The operation of the seat above described is as follows: Should it be desired to reverse the seat from the position shown in Fig. 1, it is only necessary for the operator to take hold of the seat-back and move it to its designed position. The pivotal connection between the main lever 4 and the seat-back 7 is such that the entire weight of the seat-back is carried thereby, and the upper end of the main lever moving in an arc of a relatively large circle it will be observed that the operator has little or no weight to overcome in reversing the seat. The main lever carrying the lever 12, connected to the rock-arm 17, will move said rock-arm, and in the reversing movement the rock-arm will lift the end of the lever 12, connected thereto, and force the projection 13 on said lever 12 to travel down the slot 14. The slot-and-pin connection between the lever 12 and the rock-arm 17 permits the lever 12 to have a small amount of lost motion with respect to the main lever to prevent the lever 12 from being cramped in its movement. In the central position of the seat-back all the parts are in vertical alinement, as shown in Fig. 3. As this position of dead-centers is passed, the projection 13 travels up the slot 14 and reaches the upper end of said slot coincidently with the engagement of the main lever 4 with the abutment 1<sup>a</sup> on the opposite side of the side frame. During this reversing movement the upper end of the rock-arm 17 is moved up into the housing of the main lever 4, as shown by dotted lines in Fig. 3. This telescoping action is taken advantage of to lock the seat in one of its two positions by an extremely simple locking device, which I will hereinafter describe. The reversal of the main lever 4 also reverses the position of the foot-rests and in addition the rock-shaft 18 will, through its arms 20, move the sliding seat-carrying frames in their curved ways and reverse the inclination of the seat so that the forward edge of the seat will be higher. The object of fixing the arms 17 and 20 to the rock-shaft 18 is to insure a parallel movement of the levers at the opposite ends of the seat. It will be observed that the arms 17 at each end of the rock-shaft move in unison, and consequently the seat-back will not wobble or bind in its walk-over or reversing movement. Likewise the arms 20 operate the two seat-bottom-supporting frames 22 simultaneously and avoid binding or cramping of the parts.

While I prefer to have the upper ends of the rock-arms 17 telescope into the housings

at the upper ends of the main lever 4, as shown in the preferred construction illustrated in Figs. 1 to 6, it will be obvious that one or both arms 17 may be cut off above the projections 16 and in this manner the housing in the main lever 4 will be unnecessary.

In Fig. 8 I have shown a modified form of levers in which in lieu of the housing for the upper end of the rock-arm I have provided a slot 4<sup>a</sup> in the main lever 4 for receiving a projection 17<sup>a</sup> of the rock-arm 17. In this construction the rock-arm 17 operates close to the inner face of the main lever 4, and the lever 12 is located in a plane between the rock-arm 17 and the slotted bracket-plate 6. In order to avoid interference of the pivot 11 with the rock-arm 17, I provide a curved slot 17<sup>b</sup> in the upper end of the arm 17, through which slot the pivot 11 passes and supports the lever 12 inside the rock-arm 17.

In Fig. 9 I have shown the upper end of the rock-arm 17 provided with a curved slot through which passes the pivot 11; but in lieu of the slot 4<sup>a</sup> the upper end of the rock-arm 17 in this construction operates in a housing, as heretofore described with respect to the construction shown in Figs. 1 to 6.

In order to lock my improved seat-back in its different positions, I take advantage of the telescoping action of the upper end of the rock-arm 17 and mount in the main lever 4 a locking-bolt 24, which bolt consists of a cylindrical body portion having a longitudinally-disposed slot 25 for the insertion of a key 26. This bolt 24 is provided with a circumferential groove 27, in which are fitted the prongs of the bifurcated end of a leaf-spring 28, said spring being secured to the main lever 4 and tending to hold the bolt in its inner position. A recess or slot 29 is also provided to receive cross-pins 30, which hold the bolt in its adjusted position. The body portion of the bolt to one side of the slot 29 is removed, so as to leave a locking projection 34. As shown in Fig. 6, this locking projection 34 is in the path of the upper end of the rock-arm 17, and thus it is impossible for said rock-arm to slide up into its housing, and consequently the seat is locked when the bolt is in this position. To unlock the seat, it is only necessary to insert the key 26 until its hooked end engages the inner face of the reduced portion of the bolt, when the bolt can be pulled outwardly and rotated when the reduced portion gets beyond the cross-pins 30. The locking portion 34 by this rotary movement is now placed so as to bear against the outer face of the rock-arm 17, and consequently it is possible to move the seat-back to and fro without interference from this locking device. The slot 29 is deep enough to receive the pins 30 when the bolt is in its unlocked position, and in this way the movement of the rock-arm 17 will not rotate the bolt to a locking position.

I am aware that minor changes in the con-



struction, 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, the combination with an end supporting-frame, of a main lever pivotally mounted in said frame, foot-rests carried by said main lever, and a lever 17 pivotally mounted on the end frame, said lever being pivotally connected to the upper end of said main lever and to the seat-bottom for reversing the inclination of the seat-bottom when the seat-back is reversed, said end frame being provided with curved ways to support the seat-bottom and accommodate its movement; substantially as described.

2. In a car-seat, the combination with a seat-back, of a main lever pivotally connected thereto, a rock-arm having a pivotal axis different from that of the main lever, said rock-arm at its upper end having a sliding engagement with the main lever, and a lever 12 pivotally connected to the main lever and to said rock-arm, said lever 12 having a slot-and-pin connection with the seat-back; substantially as described.

3. In a car-seat, the combination with end castings, of main levers 4 pivotally mounted in said castings, a rock-shaft 18 mounted in said castings, rock-arms 17 and 20 fixed to said rock-shaft, seat-supporting frames which are engaged by the rock-arms 20, a seat-back pivotally connected to the upper ends of the main levers 4, and levers 12 pivotally mounted on the levers 4 and having slot-and-pin connection with the upper ends of the rock-arms 17 and the lower end of the seat-back; substantially as described.

4. In a car-seat, the combination with an end casting, of a lever pivotally mounted thereon and pivotally supporting the seat-back at its upper end, an arm 17 moving about an axis different from that of said lever, the upper end of said arm 17 slidingly engaging said lever, a slotted plate mounted on the seat-back, and a lever 12 pivoted on the first-mentioned lever, said lever 12 having a pivotal connection with the arm 17 and a sliding connection with said sliding plate; substantially as described.

5. In a car-seat, the combination with an end casting having abutments 1<sup>a</sup>, a main lever 4 pivotally supporting the seat-back at its upper end, said lever 4 being provided with a housing, an arm 17 whose upper end fits in said housing, and a lever 12 pivotally connected to the main lever and said arm 17, said lever 12 having a slot-and-pin connection with the seat-back; substantially as described.

6. In a car-seat, the combination with two levers having axes of movement about differ-

ent centers, the free ends of said levers being in sliding engagement with each other, and a locking device carried by one of said levers for preventing a sliding movement between said levers; substantially as described.

7. In a car-seat, the combination with a lever for pivotally supporting the seat-back, of a rock-arm having an axis of movement about a center different from that of said supporting-lever, the upper ends of said rock-arm and said lever slidingly engaging each other, and a locking device carried by one of said sliding members for preventing sliding movement of the other member with respect thereto; substantially as described.

8. In a car-seat, the combination with a main lever for supporting the seat-back, of a rock-arm 17 having sliding engagement with said main lever, and a locking device carried by the main lever and adapted to engage the rock-arm to prevent movement of said rock-arm with respect to said main lever; substantially as described.

9. In a car-seat, the combination with a main lever having a housing at its upper end, a rock-arm whose upper end fits in said housing and is adapted to telescope therein, and a locking-bolt carried by said main lever and having a projection designed to extend into the housing in the path of said rock-arm; substantially as described.

10. In a car-seat, the combination with a lever for supporting the seat-back, a rock-arm having a sliding engagement with said lever, and a locking-bolt mounted in said main lever and having a projection capable of being placed in the path of said rock-arm, a spring bearing upon said locking-bolt, and a cross-pin passing through the main lever for holding the locking-bolt in its adjusted positions; substantially as described.

11. In a car-seat, the combination with a seat-back, of a main lever pivotally connected thereto, a rock-arm having a pivotal axis different from that of the main lever, said rock-arm at its upper end having a sliding engagement with the main lever, and means for utilizing the difference in the arcs of movement of the rock-arm and said main lever for controlling the movement of the seat-back; substantially as described.

12. In a car-seat, the combination of a main lever, a seat-back carried thereby, a rock-arm having a stationary pivotal axis different from that of the main lever, and a lever uniting the main lever, the seat-back and the said rock-arm, said lever controlling the tilting movements of the seat-back; substantially as described.

13. In a car-seat, the combination with an end frame, of a lever pivotally mounted thereon, a seat-back pivotally connected to the upper end of said lever, a rock-arm having sliding engagement at its upper end with the upper end of said lever, said rock-arm being



mounted on said end frame and having a pivotal axis different from that of the main lever whereby the difference in the arcs of movement of said main lever and the rock-  
5 arm controls the position of the seat-back, and a foot-rest carried by the main lever; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 2d day of November, 1904.

FRANCIS K. FASSETT.

Witnesses:

F. R. CORNWALL,

GEORGE BAKEWELL.