No. 784,386. PATENTED MAR. 7, 1905.

S. M. CURWEN.

CAR SEAT.

APPLICATION FILED OCT. 29, 1903.

3 SHEETS—SHEET 1.

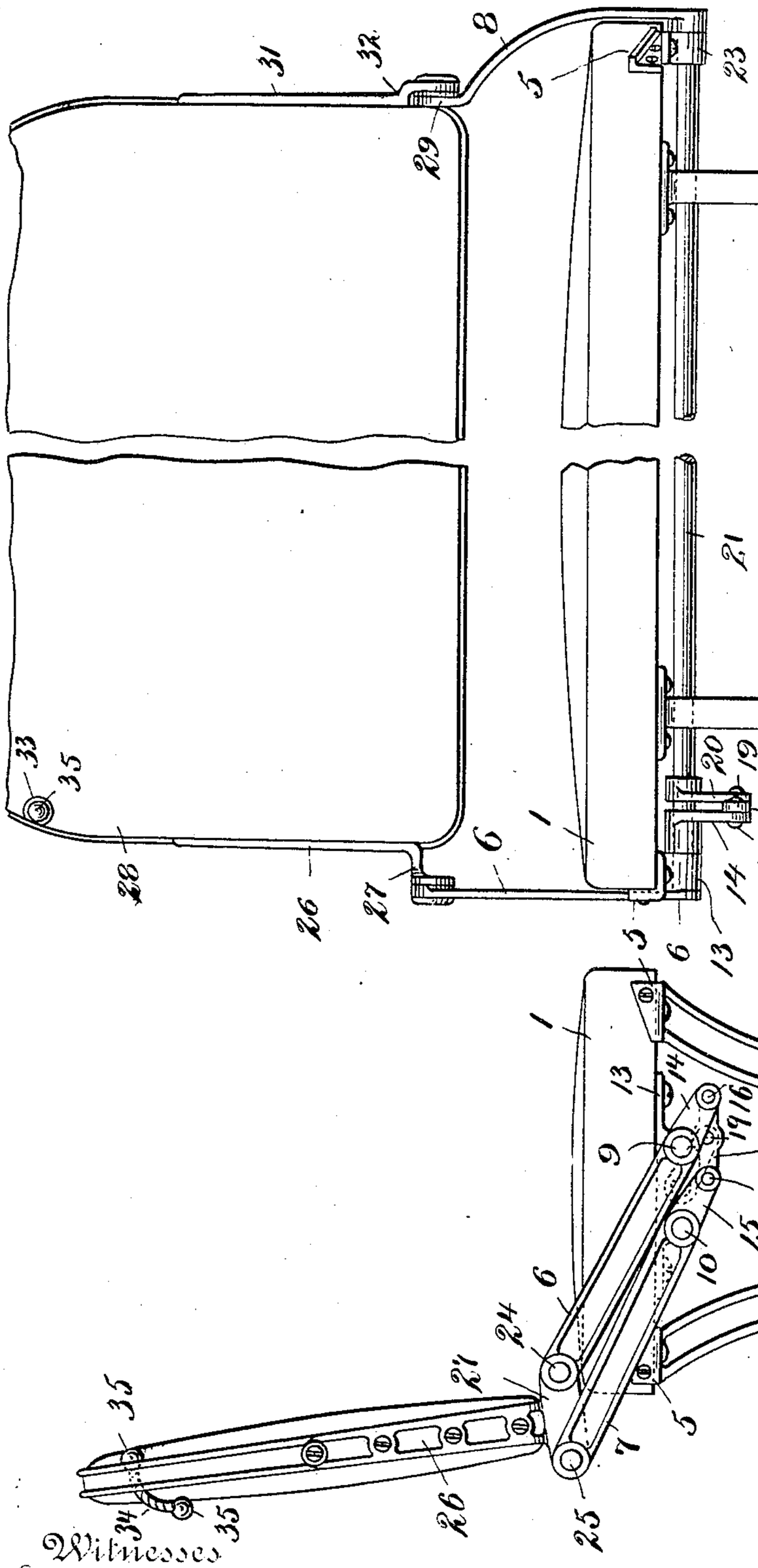

Fig. 2.

Fig. 1.

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3 SHEETS—SHEET 2.

Fig. 9.

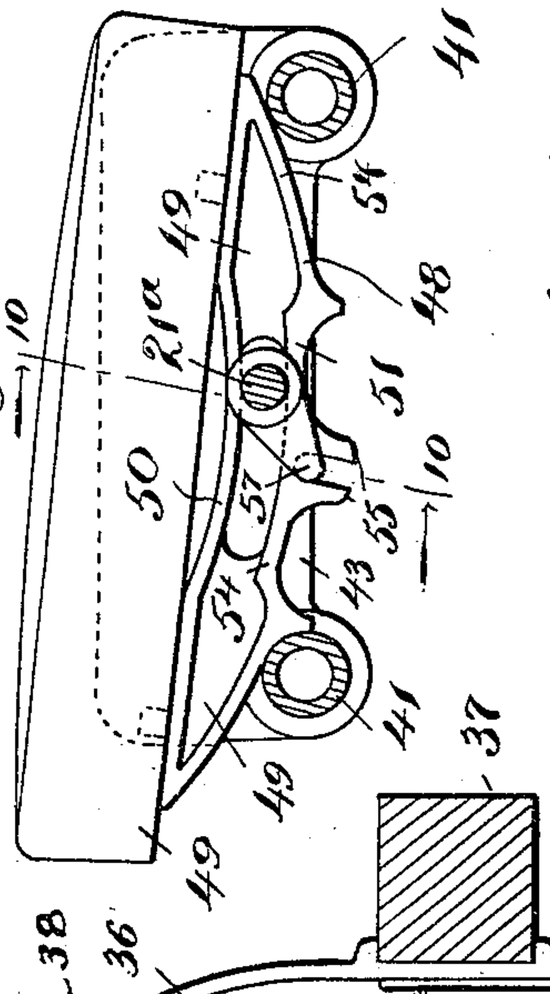


Fig. 4.

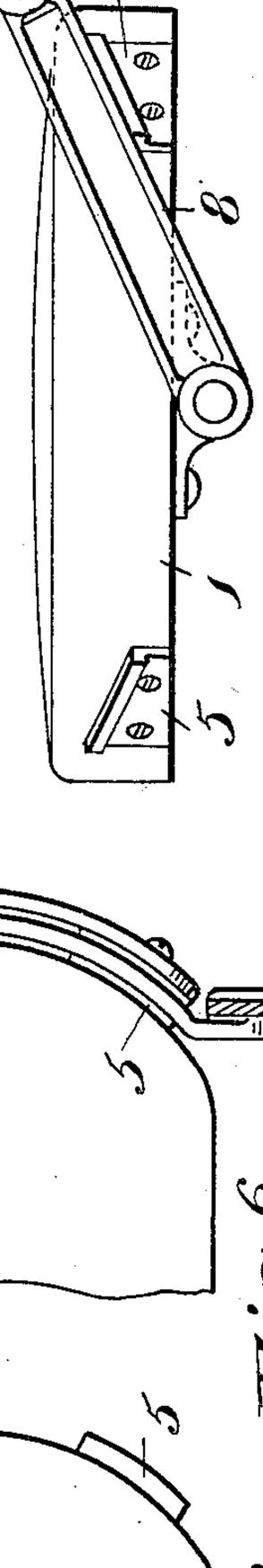


Fig. 11.

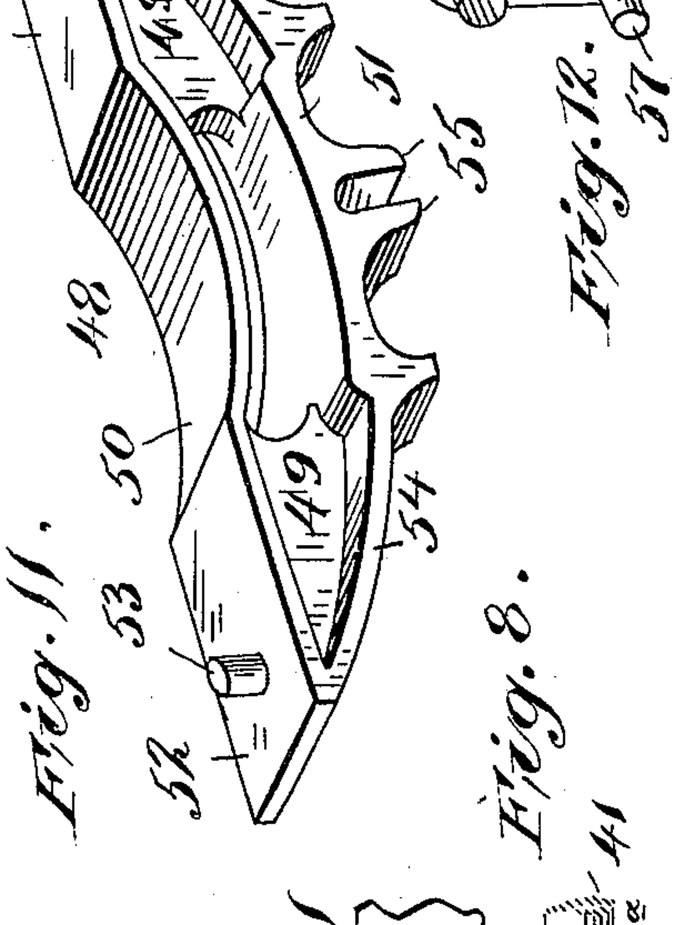


Fig. 12.

Fig. 8.

Fig. 5.

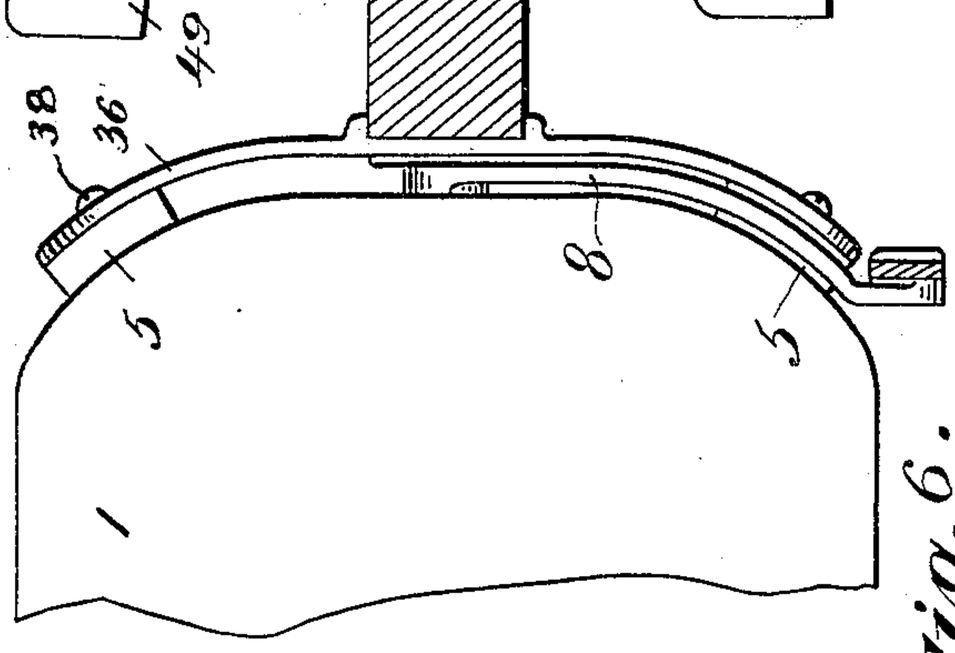


Fig. 6.

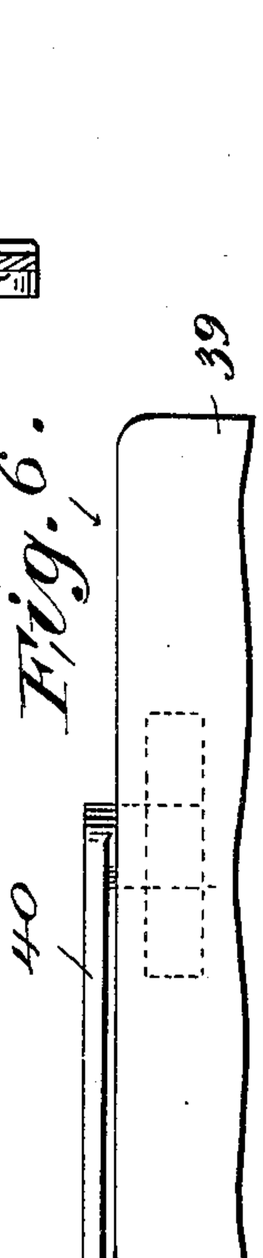
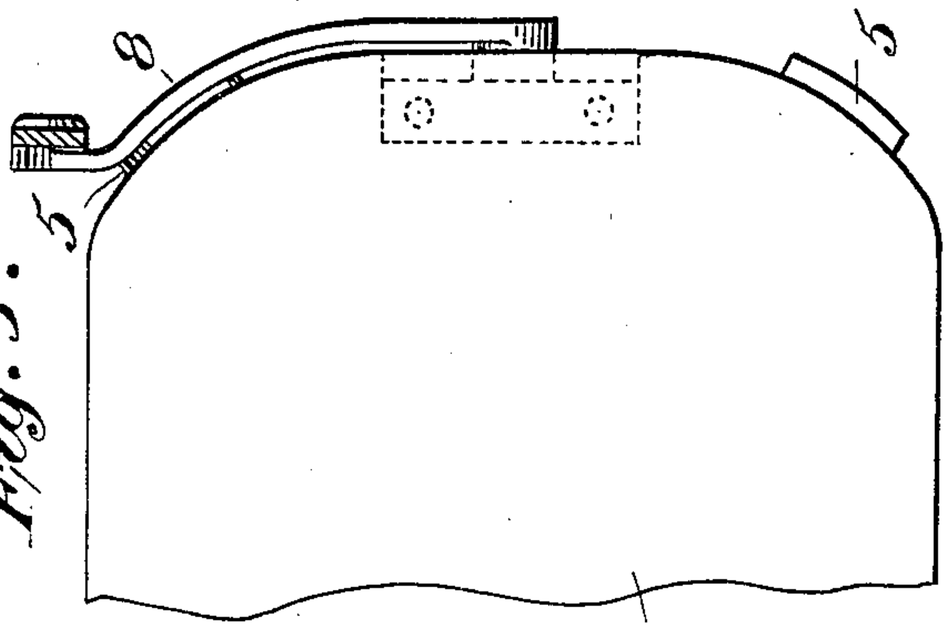


Fig. 7.

Fig. 3.



Witnesses
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3 SHEETS—SHEET 3.

Fig. 13.

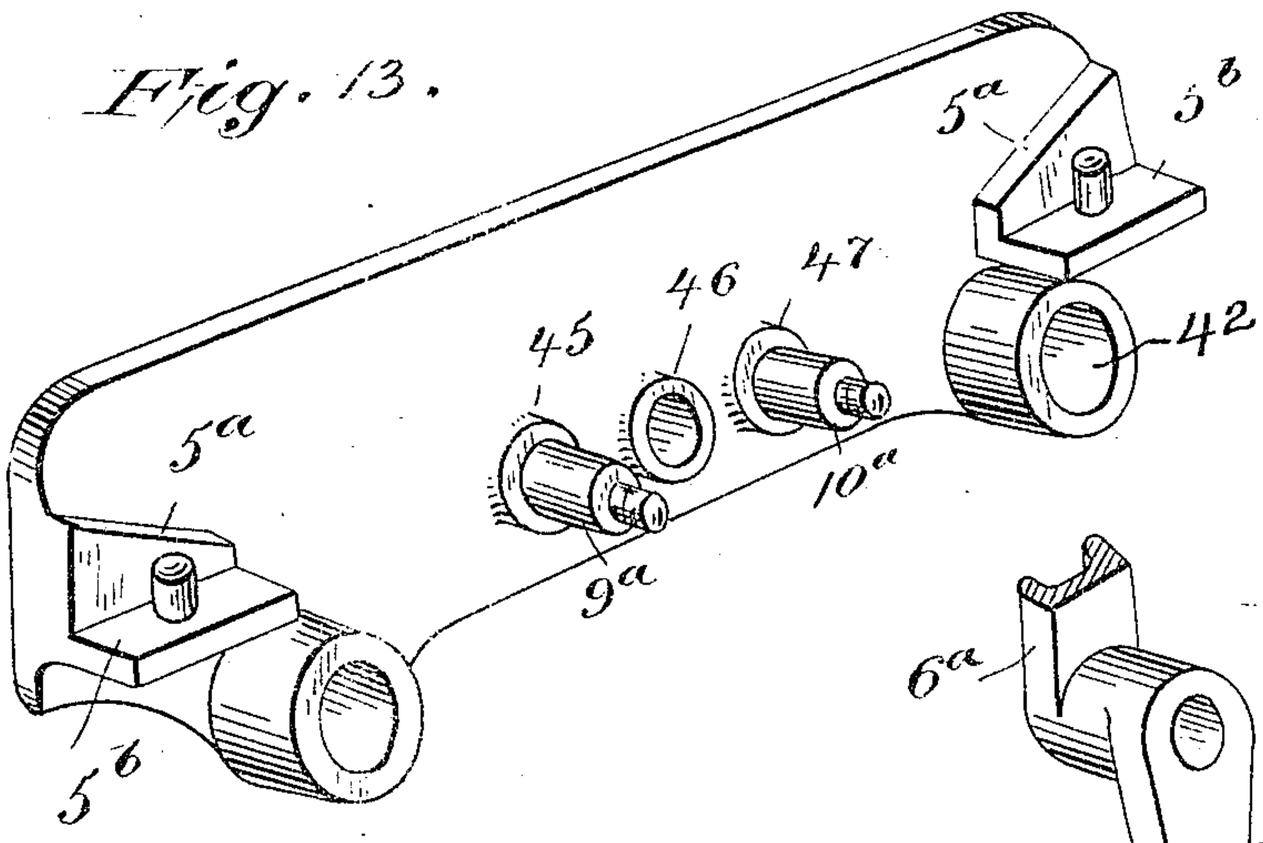
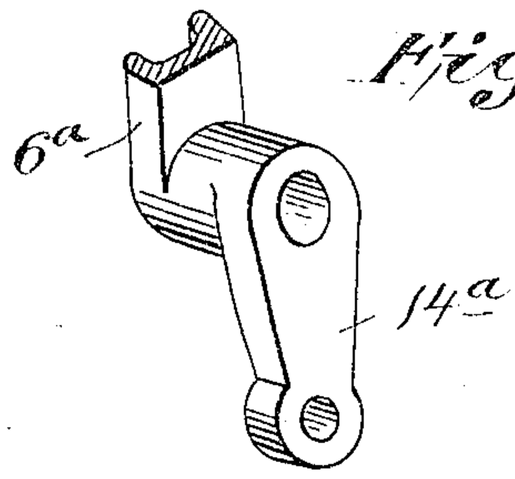


Fig. 15.



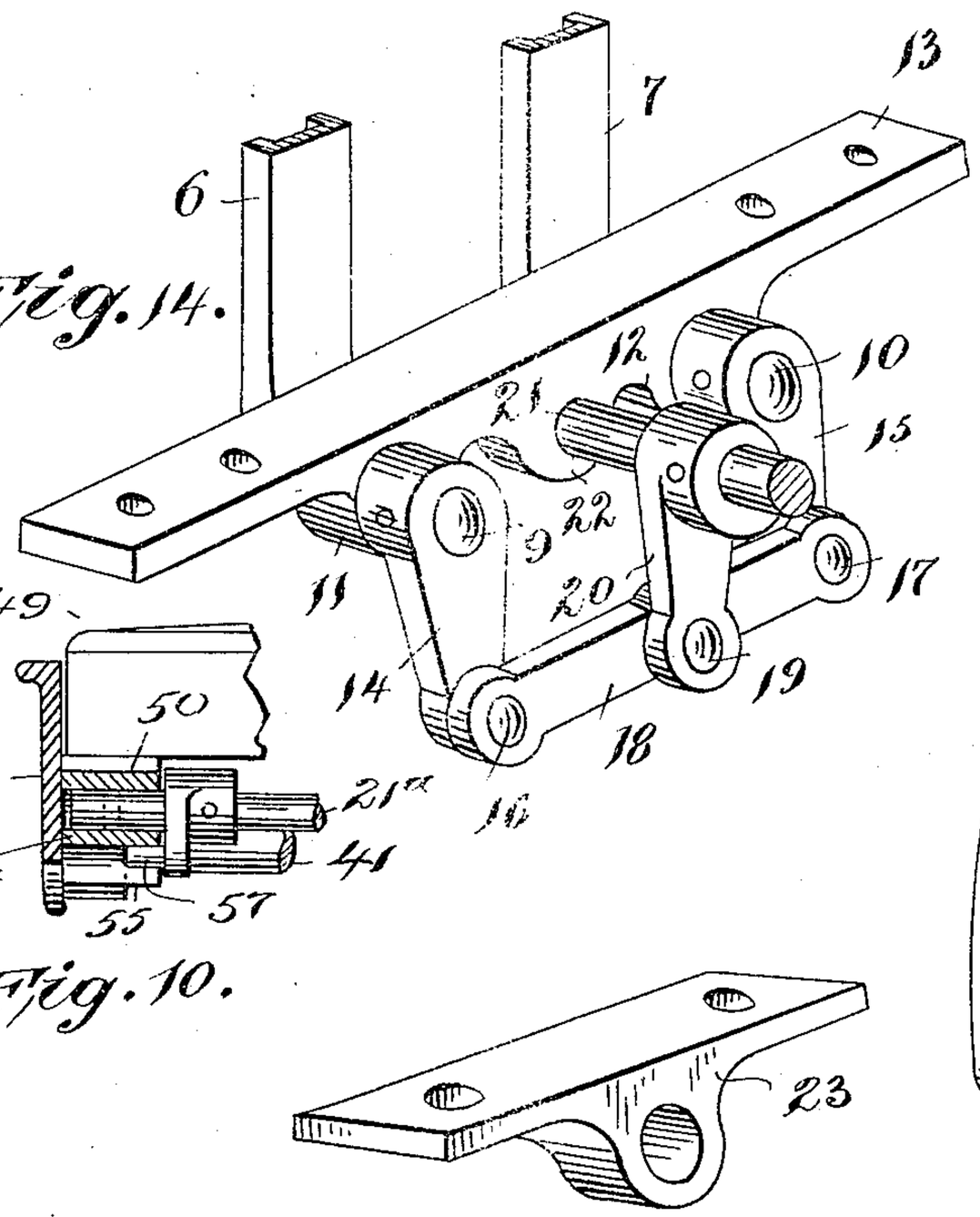


Fig. 14.

Fig. 16.

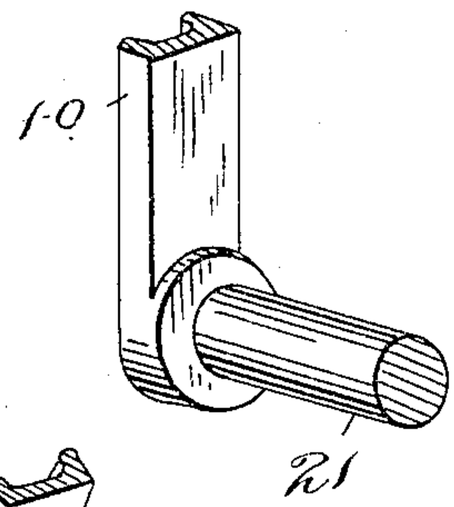


Fig. 10.

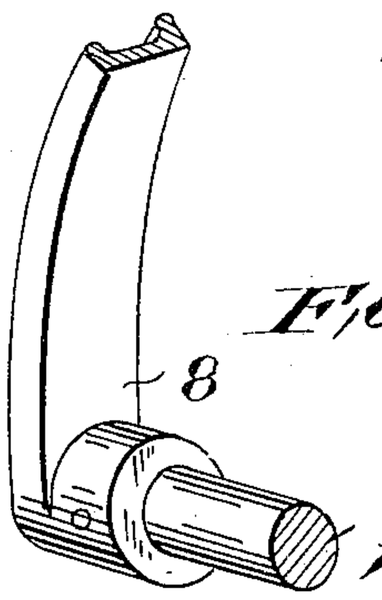


Fig. 18.

Fig. 17.

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No. 784,386. Patented March 7, 1905.

UNITED STATES PATENT OFFICE.

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CAR-SEAT.

SPECIFICATION forming part of Letters Patent No. 784,386, dated March 7, 1905.

Application filed October 29, 1903. Serial No. 179,105.

To all whom it may concern:

Be it known that I, SAMUEL M. CURWEN, a citizen of the United States, and a resident of the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Car-Seat, of which the following is a specification.

Car-seats have heretofore been in use with what is known as "walk-over" backs, which are pivoted to a plurality of links at each end. By my invention I simplify this construction by providing coöperating mechanism, so that a plurality of links at one end of a seat actuate a single link at the other, thereby simplifying the structure. Other improvements incidental to the one above mentioned form a part of my invention, as will appear below.

For a more detailed description of some embodiments of my invention reference is to be had to the accompanying drawings, forming a part hereof, in which—

Figure 1 is an end elevation of a seat provided with my invention, the end with a plurality of links being shown. Fig. 2 is a front elevation of the same; Fig. 3, a plan view of part of the same. Fig. 4 shows the end of the seat-cushion and back connected by a single link. Figs. 5 and 6 show portions of modified structures. Figs. 7 and 8 show yet another modification, the latter being taken on the line 8 8 of the former view looking in the direction of the arrows. Figs. 9 and 10 show a third modification, Fig. 10 being taken on the line 10 10 of Fig. 9 looking in the direction of the arrows. Figs. 11, 12, 13, 14, 15, 16, 17, and 18 are perspective views showing details of construction.

Throughout the various views similar reference characters designate similar parts.

In the embodiment of my invention shown in Figs. 1 to 4, inclusive, the seat-cushion 1 is supported by legs 2, which are united by foot-rests 3 and cross-braces 4. These parts may be of any usual construction and given any suitable shape. For convenience, however, the cushion 1 is preferably made straight at one end and curved at the other, as is apparent from Fig. 3.

Stops 5, which are suitably located at the ends of the cushion 1, limit the movement of links 6, 7, and 8. The links 6 and 7 are fixed to studs 9 and 10, which are journaled at 11 and 12 in a bracket 13, which is fixed to the cushion 1 below its straight end, so that one face of this bracket is in line therewith and is symmetrically disposed on each side of the center of said end. The inner ends of the studs 9 and 10 are fixed to crank-arms 14 and 15, respectively, with crank-pins 16 and 17, which are united by a link 18. A third crank-pin 19 is journaled in the center of the link 18, and this pin is fixed in a crank 20, which is fixed to a shaft 21. The shaft 21 runs parallel to the studs 9 and 10, but extends the length of the seat, being journaled at 22 in the bracket 13 midway between the journals 11 and 12, and at its other end the shaft 22 is journaled in a bracket 23, through which it passes to the link 8, which is fixed to said shaft. This mechanism causes the links 6, 7, and 8 to always move in unison, as is apparent.

The free ends of the links 6 and 7 are journaled on studs 24 and 25, which are fixed to an inverted-**T**-shaped plate 26, with an offset lower end 27, which is secured to the back 28. These studs 24 and 25 are preferably farther apart than the studs 9 and 10, so that the back 28 will be given a proper inclination.

The link 8 is curved to correspond with curved end of the seat-cushion 1, and at its upper end 29 it is journaled on a stud 30, which is secured to a bar 31, which is fixed to the end of the back 28, and the bar 31 is offset at 32, so that the end 29 of the link 8 rests between this bar and the back 28.

An eyelet 33 is secured in the back 28 at its upper and inner corner, and a hand-strap 34, with two handles 35, is passed through this opening, so that either handle may be held by a passenger.

From the above the operation of my improvement is apparent. Assuming the seat to be in the position shown in Fig. 1, it is thrown into the position indicated in Fig. 2 by moving the back 28 over the cushion 1, thereby causing the links 6 and 7 to rotate the studs 9 and 10, which in turn revolve the cranks 14 and 15 and shift the link 18, causing

it to rotate the crank 20, which rotates the shaft 21 and the link 8 in unison with the links 6 and 7. This movement continues until the links 7 and 8 rest against their stops 5. The seat may again be reversed in a similar way, the movements being in the opposite directions.

In Fig. 5 is shown a slight modification, as one set of legs 2 near the curved end are done away with, and instead the cushion 1 is secured to a seat-panel 36, which is fixed to a stanchion 37, and screws 38 pass through the stops 5 to secure the seat-cushion to the panel. The operation of the mechanism is identical with that described above.

In Fig. 6 is shown a second modification in which a seat-cushion 39, which is straight at both ends, is substituted for the cushion 1. This necessitates substituting a straight link 40 for the link 8 and in substituting a longer back for the back 28.

A further modification is shown in Figs. 7, 8, 13, and 15, wherein the legs or supports engage cross-rails 41, the ends of which rest in sockets 42 in plates 43, which run parallel with the ends of the cushion. The plate 43 is provided with projections 45, 46, and 47. The projection 46 forms a journal for the shaft 21^a, and studs 9^a and 10^a are fixed in the projections 45 and 47, as shown in Fig. 13. Links 6^a and 7^a are mounted on the studs 9^a and 10^a, respectively, and these links support one end of the back 28 in the same manner as the links 6 and 7. The other end of the back 28 is supported by a link which is identical with the link 8. The plate adjacent to the single link is identical with the plate 43, as above described, except that the projections 45 and 47, with their studs 9^a and 10^a, are omitted.

The shaft 21^a is journaled in the plates at each end of the seats, as described above, and is provided with a crank 19^a, which connects the shaft with a link 18^a, which engages the crank-pins 16^a and 17^a on the cranks 14^a and 15^a, which are integral extensions of the links 6^a and 7^a, respectively. As this mechanism operates precisely as described above, further description is believed unnecessary.

The end plates are provided with inwardly-projecting stops 5^a, which limit the movement of the links 6^a, 7^a, and 8^a, respectively, in a manner precisely similar to the stops 5 for the links 6, 7, and 8, and the stops 5^a are further extended and provided with cushion-supports 5^b, on which the seat-cushion 1 may rest.

If desired, the cushion-supports 5^b may be abolished and the cushion 1 may be supported on rockers 48, which rest on the cross-rails 41. These rockers each comprise vertical webs 49, which are united by horizontally-disposed curved webs 50 and 51. The web 50 is extended to form seats 52 for the cushion 1 and provided with dowels 53 to secure it in place. At their outer ends the seats 52 are united with cams 54, which extend to the web 51, and symmetrically disposed at each side of the center of the web 51 are downwardly-depending guides 55. All these parts of the rocker 48 are preferably formed integral. Two of these rockers are employed, and the shaft 21^a passes freely through the openings between the webs 49, 50, and 51. The cranks 56 with crank-pins 57 are so fixed to the said shaft 21^a that the pins 57 will engage the guides 55 and shift the rockers 48 on the cams 54, so that the seat-cushion 1 will be inclined to correspond with the movement of the back.

From the foregoing the advantage of my improved structure will be readily understood. Heretofore walk-over car-seats have been made with a plurality of supporting-links at each end. This prevents the links from fitting snug against the curved end of the seat or between the curved end and a correspondingly-curved panel. Furthermore, where a plurality of links are employed at each end of a walk-over seat the upper ends of said links are necessarily pivoted out of the plane back, so that a projecting pivot protrudes beyond the back and on each side. These protruding pivots are necessarily separated by several inches in an ordinary car-seat, so that a compact structure is impossible. On the other hand, the end of the single link is in the plane of the back, so that when the back is at either limit of its movement the single link may rest snugly and compactly against the end of the seat, whether the end be straight or curved, or, as shown in Fig. 5, the curved single link may rest in a narrow channel.

While I have shown and described certain embodiments of my invention, it is obvious that many others may be made which utilize all or some of its advantages and which come within the scope of the following claims.

What I claim is—

1. In a car-seat or similar device, a walk-over back with a single link at one end and a plurality of links at the other end and means for causing said links to move in unison when the back is reversed.

2. In a car-seat or similar device, a walk-over back with a single link at one end and a plurality of links at the other end of said seat, a shaft fixed to said single link and mechanism connecting said shaft and the plurality of links so that said links will act in unison when the back is reversed.

3. In a car-seat or similar device, a walk-over back with a single link at one end and a plurality of links at its other end, said single link being fixed to a shaft, a crank fixed to said shaft, a link connected with said crank, and means connecting said link and the plurality of links so that the link secured to the back will act in unison when it is reversed.

4. In a car-seat or similar device, a walk-over back with a single link at one end and a plurality of links at its other end, a shaft fixed

to said single link, cranks connected rigidly with each link of said plurality of links, and means connecting said plurality of links and shaft so that the links connected to the back will act in unison when the back is reversed.

5. In a car or similar device, a walk-over back with a single link at one end and a plurality of links at its other end, a shaft connected to said single link and a crank fixed on said shaft, a link connected to said crank and a plurality of cranks also connected to said link, said plurality of cranks being connected to the said plurality of links so that when the back is reversed the links secured thereto will act in unison.

6. In a car-seat or similar device, a walk-over back provided with a single link at one end and a plurality of links at its other end, means for causing said links to move in unison when the seat is reversed and stops to limit the movement of said links.

7. In a car-seat or similar device, a walk-over back provided with a single link at one end and a plurality of links at its other end, means for causing said links to act in unison when the back is reversed, a seat-cushion, and means for inclining said seat-cushion and shifting the same when said back is reversed.

8. In a car-seat or similar device, a walk-over back with a single link secured to one end and a plurality of links secured to its other end, a seat-cushion resting on rockers, means for causing said links to act together when the back is reversed, and means connecting said last-mentioned means with said rockers when the seat is reversed so that the seat-cushion will be inclined and shifted in unison with said back.

9. In a car-seat or similar device, a walk-over back with a single link at one end and a plurality of links at its other end a rotary shaft fixed to said single link, means connecting said shaft with said plurality of links, stops to limit the movements of said links, a seat-cushion and means connected with said shaft for tilting and inclining said cushion when said back is reversed.

10. In a car-seat or similar vehicle, a walk-over back provided with a single curved link at one end, and a plurality of links at the other end, and means for causing said links to move in unison when the seat is reversed.

11. In a car-seat or similar device, a walk-over back provided with a single curved link at one end, and a plurality of links at its other end, means for causing said links to move in unison when the seat is reversed, a cushion, means for tilting the said cushion when the back is reversed.

Signed in the city and county of Philadelphia, State of Pennsylvania, this 11th day of August, 1903.

SAMUEL M. CURWEN.

Witnesses:

DAVID ASHWORTH,

WM. H. FLEISCHMAN.