(No Model.) 3 Sheets—Sheet 1.

A. J. BARBER.

REVERSIBLE SEAT.

No. 368,270. Patented Aug. 16, 1887.

Fig. 1.

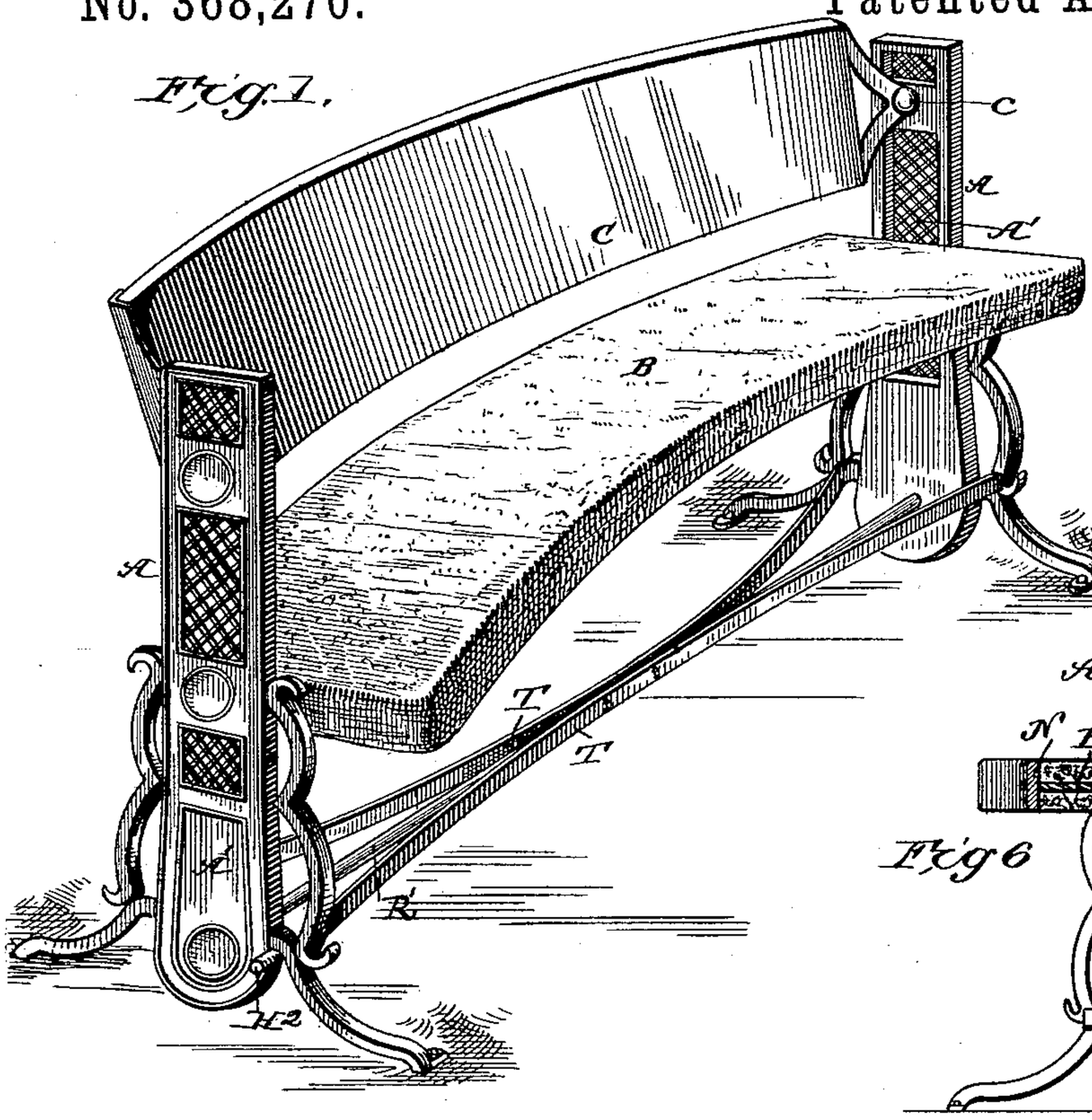


Fig 6

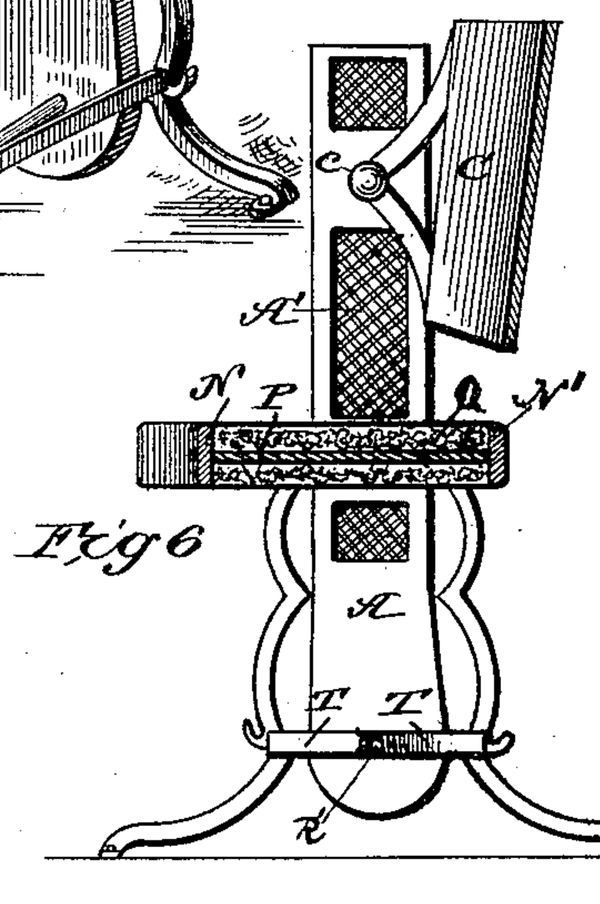
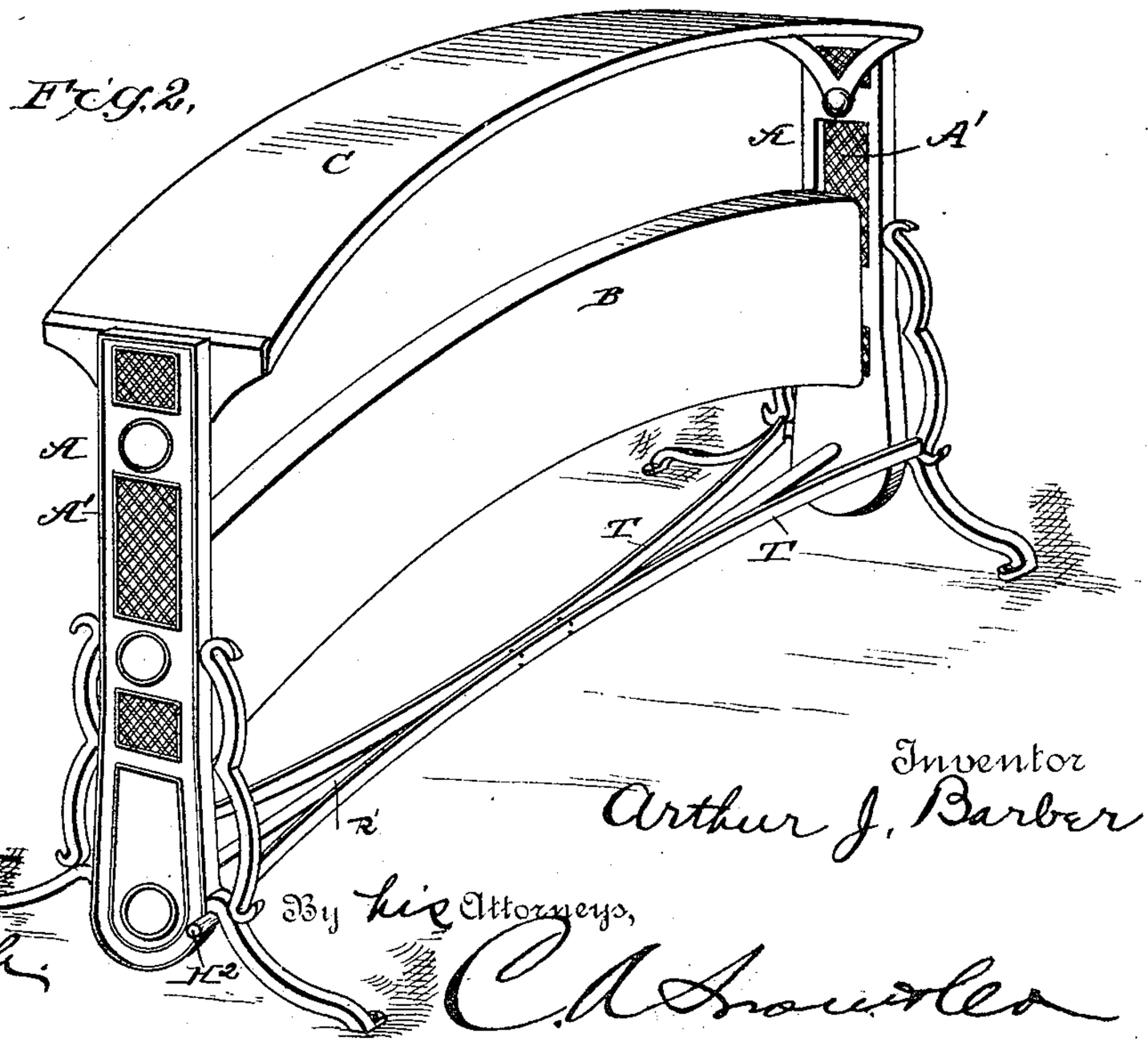


Fig. 2.



Witnesses
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C. E. Doyle

Inventor
Arthur J. Barber

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C. A. Snow & Co.

(No Model.) 3 Sheets—Sheet 2.

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Fig. 5.

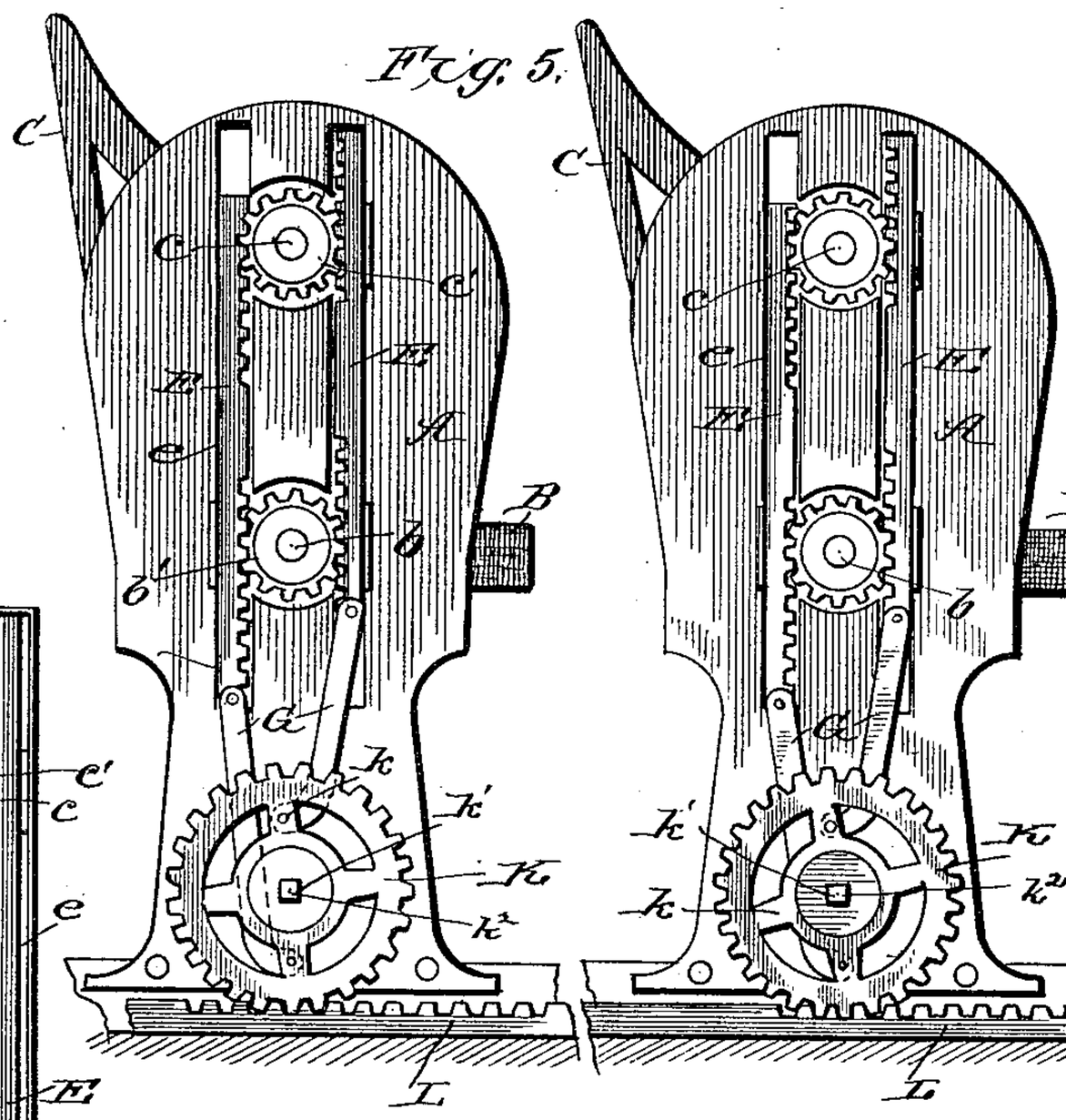


Fig. 4.

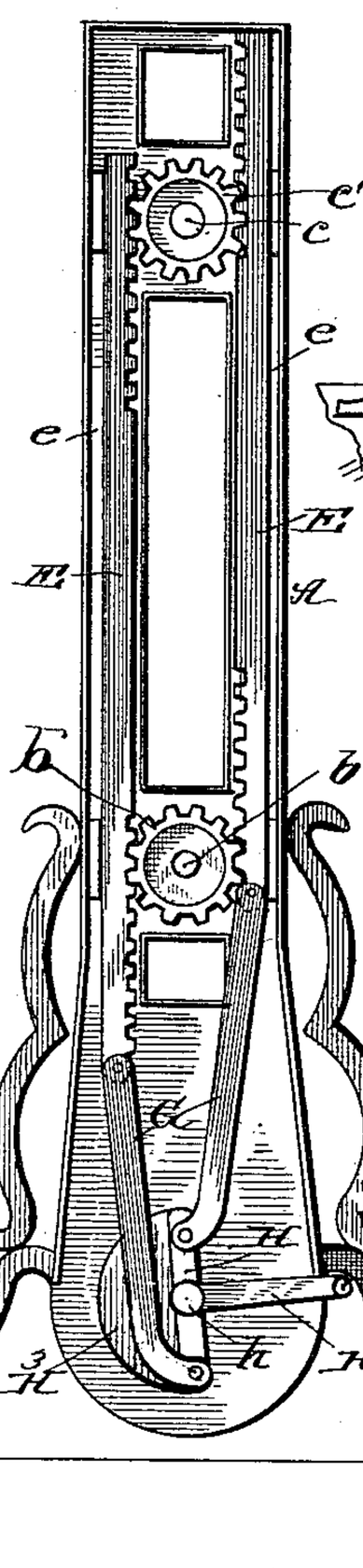


Fig. 8.

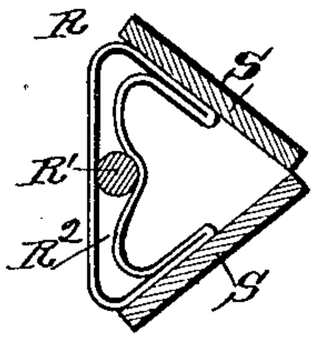
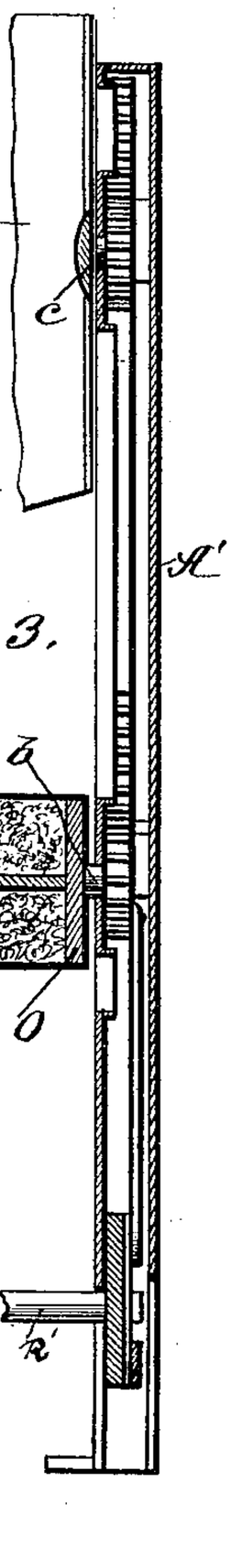


Fig. 3.



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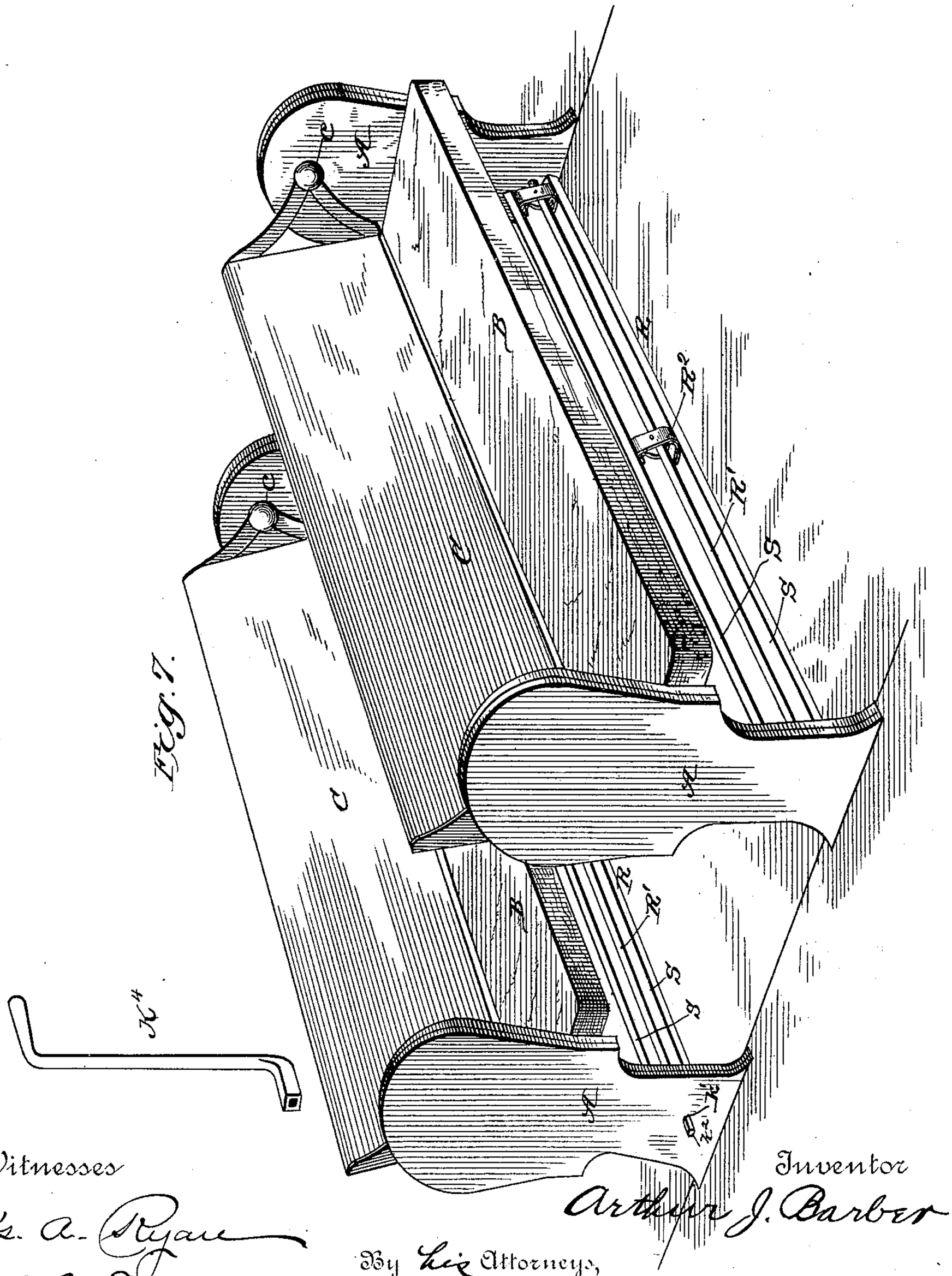

Fig. 1.

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Inventor
Arthur J. Barber
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UNITED STATES PATENT OFFICE.

ARTHUR J. BARBER, OF AUBURN, ASSIGNOR OF ONE-HALF TO CHARLES D. GAYLORD, OF SODUS, NEW YORK.

REVERSIBLE SEAT.

SPECIFICATION forming part of Letters Patent No. 368,270, dated August 16, 1887.

Application filed March 16, 1887. Serial No. 231,172. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR J. BARBER, a citizen of the United States, residing at Auburn, in the county of Cayuga and State of New York, have invented a new and useful Improvement in Reversible Seats, of which the following is a specification.

My invention relates to improvements in reversible seats; and it consists in certain novel features hereinafter first fully described, and then pointed out in the claims.

The primary objects of my invention are to provide a device in which the seat, back, and foot-rest will be simultaneously reversed, and in which the seat and back may be simultaneously turned to a vertical and horizontal position, respectively, and held in such position.

A further object is to improve the operating mechanism.

In the drawings hereto annexed I illustrate my improved reversible seat, showing clearly the construction and arrangement of the parts to produce the results named, and in which—

Figure 1 is a perspective view of my improved seat. Fig. 2 is a similar view thereof with the seat raised out of the way, as seen when not in use. Fig. 3 is a vertical section through one of the standards at the sides of the seats, showing the manner of pivoting the seat and back. Fig. 4 is a side elevation of the standard with the face-board removed to show the mechanism employed to operate the seat and back simultaneously. The form of seat shown in this figure (in which the seat and back are both movable and the seat curved) is adapted for use in Sunday-schools. Fig. 5 is a similar view showing two adjacent seats and the means employed to reverse them simultaneously, this arrangement being adapted more particularly for use in street-cars and passenger-coaches. Fig. 6 is a transverse vertical central section through the seat as seen in Fig. 1 with the seat in position for use, to show the construction of the seat and the foot-rest. Fig. 7 is a perspective view of two car-seats in series. Fig. 8 is a cross-section through the foot-rest.

Referring to the drawings by letter, A A designate the side standards or arms, resting upon the floor at each end of the seat B, and between which the said seat B and the back C are reversibly pivoted.

In Figs. 1 and 2 of the drawings I show the seat and back curved, this being a convenient form for use in Sunday-school rooms, as the class occupying them is thus brought closer to the teacher, and also enables the scholars to face the teacher without the inconvenience of turning partly around. The pivots *b* of the seat B and the pivots *c* of the back C pass through suitable openings in the standards A, and are provided on the ends in one of the said standards with the gear-wheels *b'* and *c'*, respectively, which are adapted to operate in recesses in the said standard, in rear of the face-plate A'.

Engaging with and adapted to operate said gear-wheels *b'* and *c'* are the vertical rack-bars E, sliding in vertical ways *e* in the standard A, in rear of the face-plate. It will be seen that if said rack-bars are moved vertically in the ways *e*, one bar moving up while the other moves down, the pinions or gears *b' c'* will be rotated both in the same direction, and will therefore reverse the seat and back simultaneously.

To the lower ends of the rack-bars E are pivotally secured the upper ends of the bars G, which in Figs. 1 to 4 of the drawings are attached at the lower ends to the extremities of the lever bar or arm H, pivoted at its central point, *h*, to the standard A, and having the angle-arm H' at right angles to the arm H, and provided with the handle H^2, with which to operate the arm H'. The said handle H^2 is adapted to be swung downwardly through a half-circle, and when so moved operates the lever H, draws one of the rack-bars E down and forces the other up, thereby reversing the seat and back. The said lever-arm H' is formed integrally with the arm H, and H^3 is a semicircular disk, also formed integrally with the said bar H on the opposite side thereof from the arm H', and adapted to balance the said arm to make the operation thereof easier. When the seat is in position for use, the arm H is vertical or slightly inclined, so that a pressure or force exerted upon the said seat or back will not turn the same, it being necessary to

move the handle H^2 in order to draw the lever-arm H from its inclined position past the vertical to allow the reversal of the seat and back.

It will be seen that the lower ends of the bars G are bent toward each other slightly, and this allows the said lever-arm to assume the inclined position necessary to lock the device.

In Fig. 5 is illustrated the manner of simultaneously reversing a series of seats—as in a street-car or passenger-coach; and as there is no reason for having the seats curved for this purpose, and as it would be considerably in the way also, the seats in this view are shown straight.

The pivoted bars G are secured at their lower ends to the spokes *k* of the large toothed wheel K, pivoted at *k'* to the standard, and adapted to engage with the teeth of the horizontal rack-bar L, which is designed to extend the entire length of the car and operate in a groove in the floor thereof. As the spokes *k*, to which the bars G are attached, are slightly inclined in a similar manner to the arm H when the seat is in position for use, the said seat is thus locked securely and cannot be reversed until the said wheel is turned by moving the lever H' by means of the detachable handle H^4, to be applied to the squared post k^2 at the center of the wheel K. As the horizontal rack-bar L engages with the wheels K of a series of seats, it will be seen that if one of the said wheels is turned, thus moving the said rack-bar, all the seats in the series will be reversed, and all of the seats in the series will also be locked in the new position.

It will be seen that there is no absolute necessity for the seat of a car-seat to be reversible, as the said seat is usually straight, and when it is desired to reverse only the back the pinion *b'* and the teeth on the vertical bars for it to engage in are omitted, and the said seat is fixed rigidly to the standards.

The reversible seat which I show in connection with the device is double-faced, as is obviously necessary, both sides being used at different times, and is constructed as follows: The front and rear bars, N N', are connected at the ends by the cross-pieces O, and a thin board or partition, P, is secured in the framework thus formed midway between the upper and lower edges of the bars forming said framework, and padding Q is applied in the ordinary manner on both sides of the said partition, thus making both sides of the seat similar. The seat thus formed is very comfortable, not so expensive as the ordinary cushioned seats, and will be found very durable.

R represents my improved foot-rest for use on street-car and railway-coach seats, and consists of a horizontal rod, R', secured at one end to the central point of the gear-wheel K, and extends the entire length of the seat, and is journaled in the standard at the opposite end.

A triangular bracket or frame, R^2, is secured on the said bar at the central point and at each end, and secured to the said brackets are the slats S S, one on each side, the upper of said slats forming an inclined foot-rest for the seat in rear of the one having the said rest. Thus, when the wheel K is turned to reverse the seat and back, the bar or rod R is also turned and swings the foot-rest over from one side of the said rod to the other, and thus presents an inclined surface or slat to the seat in the rear. It will be seen that by reversing the rest a different side thereof is presented in each position; hence the two sides converge to an edge at the rear of the said rest, (this converging being necessary in order to form an inclined upper side to the rest, as described.)

It will be also seen that the said foot-rest is raised a considerable distance from the floor when the back is in the elevated or protecting position, thus giving ample opportunity to sweep and clean the floor thereunder.

T T represent braces secured at the ends, respectively to the side standards, near the front and rear sides thereof, and the central points of the said braces are drawn together and secured, thus forming a secure brace for the lower ends of the standards, at the same time being out of the way of the foot-rest, which, when said braces are used, comprises simply a rod, R'; also, by springing in the centers of the brace-bars, as described, said braces are held out of the way of the persons sitting on the middle of the curved seat, as a straight bar would be liable to interfere and be troublesome.

It will be understood that when the back is supported over the seat, as shown in Fig. 2, dust is prevented from settling on the seat, and when such an arrangement is used on the lawn or in parks the seat will be protected from falling leaves, rain, &c.

It will also be understood that the operation of reversing the seats also locks, thus obviating the necessity of unlocking, turning, and relocking each seat separately, this being a laborious undertaking when all the seats in a long train of cars are to be changed.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a reversible seat, the pivoted seat B and back C, having pivots *b* and *c*, provided with pinions *b'* and *c'*, and the vertically-movable rack-bars E, to engage the said pinions and revolve the same to reverse the seat and back, substantially as described, for the purpose set forth.

2. In a reversible seat, the standards A, resting on the floor, the seat B and back C, having pivots *b* and *c*, respectively, journaled in openings in the standards, the pinions *b'* and *c'* on the outer ends of the said pivots at one end of the seat, the vertical rack-bars E, sliding in ways of the said standard and adapted to engage with the pinions *b'* and *c'* on opposite sides thereof, pivoted bars G, secured at the upper end to the lower ends of the bars E, and lever-arm H, having the lower ends of the bars G secured pivotally to the extremities

thereof, said lever being adapted to be operated to reverse the seat and back simultaneously, substantially as described, for the purpose set forth.

3. In a reversible seat, the standards A, seat B, and back C, pivoted between said standards, pinions b' c', secured to the pivots of said seat and back, rack-bars E, sliding in ways of the standards A and adapted to engage with the pinions b' c' on opposite sides thereof, bars G, pivoted to the lower end of the rack-bars, lever H, secured at the extremities to the lower ends of the bars G, and angle-arm H′, having a handle, H^2, on the outer end to operate the said arm, substantially as described, for the purpose set forth.

4. In a reversible seat, the pivoted seat B and back C, pinions b' and c', connected to the seat and back, respectively, and rack-bars E, to operate the said pinions, combined with the pivoted bars G, secured to the lower ends of the rack-bars and having inwardly-bent lower ends, lever-arm H, secured at the extremities to the lower ends of the bars G, and the angle-arm H′, to operate the said lever, substantially as described, for the purpose set forth.

5. A reversible seat having the pivoted seat B and back C, pinions b' and c', for the seat and back, respectively, rack-bars E, the toothed wheel K, to operate the said rack-bars, and the rack-bar L, to operate a series of wheels, K, and turn the seats attached thereto to reverse a series of seats simultaneously, substantially as described, for the purpose hereinbefore set forth.

6. In a reversible seat, the back C, combined with the seat B and the reversing mechanism connecting the seat and back, so that both the seat and back are reversed simultaneously, the seat turning into a vertical position, while the back turns into a horizontal position, projecting over the seat, so as to protect the latter, as set forth.

7. In a reversible seat, the pivoted seat B and back C, pinions b' and c', and rack-bars E, to operate said pinions, combined with the pivoted bars G, secured to the lower ends of the rack-bars and having inwardly turned or bent lower ends, and lever-arm H, secured at the extremities to the lower bent ends of the arms G, said lever being adapted to be inclined when the seat is in position for use to lock the same against movement, and the angle-arm H′, to turn the lever H to reverse the seat, substantially as described.

8. A seat having the standards A, and brace-bars T, secured at the ends to the front and rear sides of the said standards and extending the entire length of the seat and being sprung together at the central points, for the purpose set forth, substantially as described.

9. A reversible seat having the standards A A, pivoted back and seat, vertical rack-bars to reverse the said seat and back, and the wheel K, to operate the said bars, combined with the foot-rest R, having the rod R′, secured at one end to the center of the said wheel K and adapted to be turned thereby to reverse the said foot-rest, substantially as described, for the purpose set forth.

10. In a reversible seat, the curved back C and curved seat B, and reversing mechanism connecting the seat and back, the seat being turned into a vertical position and the back into a horizontal position and covering the seat, said seat and back being sustained in these positions without locking the reversing mechanism, as set forth.

11. The seat, back, and foot-rest, all connected together by the same mechanism, so as to be reversed by the same operation.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

ARTHUR J. BARBER.

Witnesses:

E. G. SIGGERS,

WM. N. MOORE.