

(No Model.)

2 Sheets—Sheet 1.

H. S. HALE.
CAR SEAT.

No. 417,822.

Patented Dec. 24, 1889.

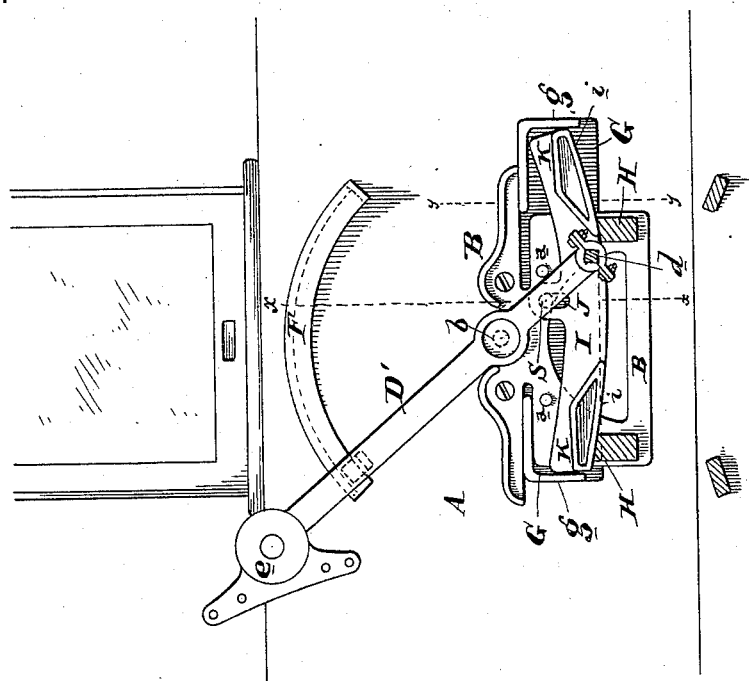


FIG. 2

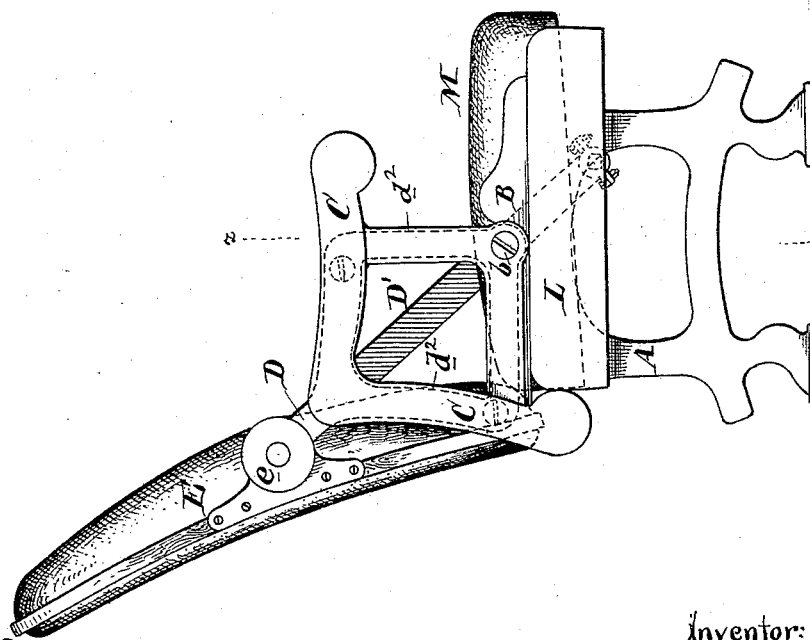


FIG. 1

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Inventor:

Harry S. Hale

By *W. L. Smith*

W. L. Smith

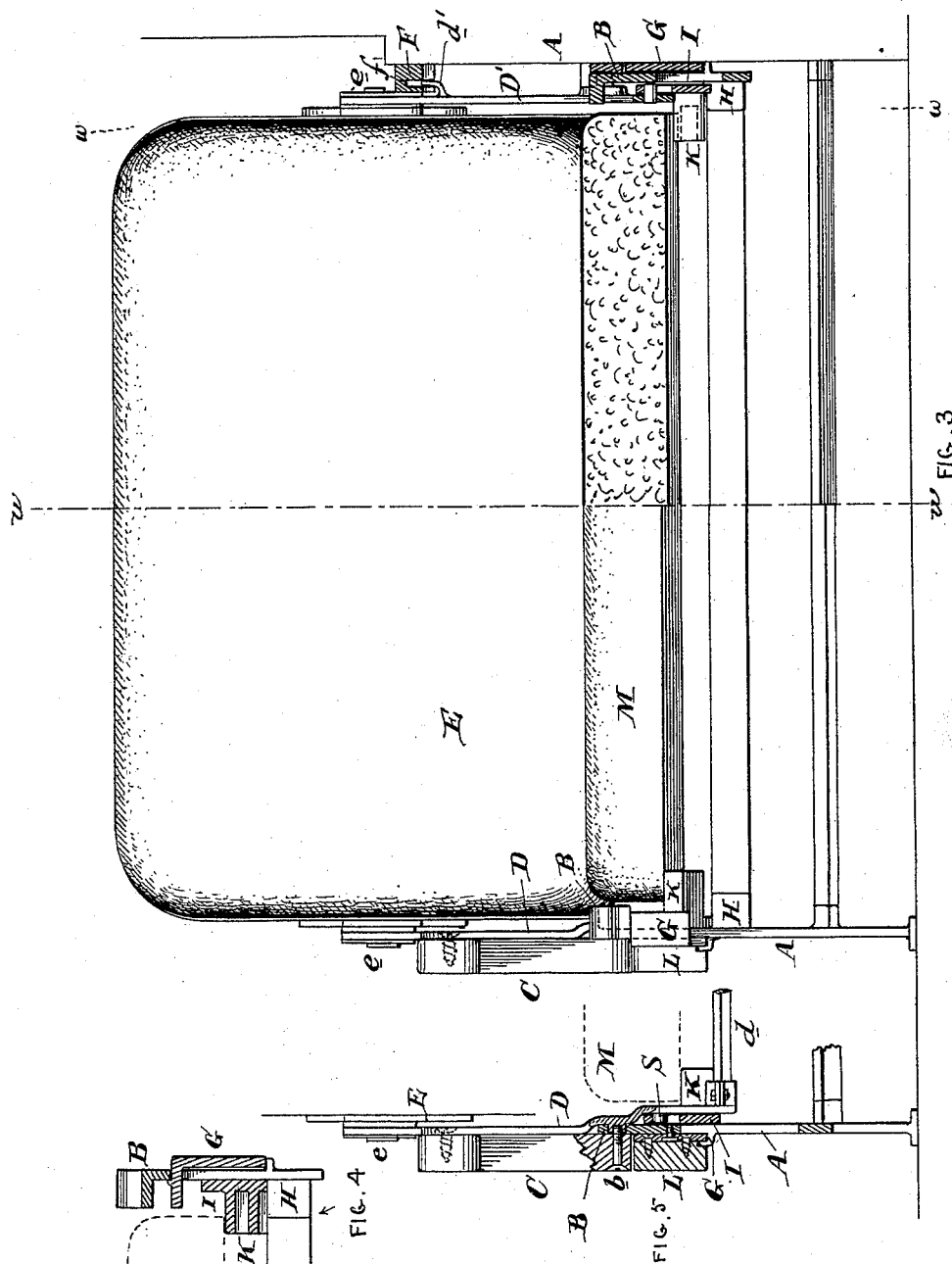
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[Signature]

UNITED STATES PATENT OFFICE.

HENRY S. HALE, OF PHILADELPHIA, PENNSYLVANIA.

CAR-SEAT.

SPECIFICATION forming part of Letters Patent No. 417,822, dated December 24, 1889.

Application filed September 12, 1888. Serial No. 285,186. (No model.)

To all whom it may concern:

Be it known that I, HENRY S. HALE, of the city and county of Philadelphia, and State of Pennsylvania, have invented an Improvement in Car-Seats, (Case A,) of which the following is a specification.

My invention has reference to car-seats; and it consists of certain improvements fully set forth in the following specification and shown in the accompanying drawings, which form part thereof.

My invention has particular reference to that class of car-seats in which the back is made reversible, and in which the seat is simultaneously shifted with the reversing of the back. In this improvement the back is hinged by the hinge-arms to the stationary frame-work, which in a car consists of the outer frame, the car-wall, and the intermediate rigid connections. I prefer to connect the hinge-arms rigidly together at their lower parts to hold the shifting seat-supports at each end of the seat to the main frame and cause them to be simultaneously shifted through the mediation of suitable connections between said plates and the hinge-arms. The inner hinge-arm is held toward the car-wall by a suitable guide-frame to prevent the said hinge-arm being moved longitudinally with reference to the car-seat. The outer hinge-arm has no guide, but carries the seat-arms, which are brought into position upon reversing the seat-back, and by the construction here employed the said arms are enabled to be made very low and short. The hinge-arms are indirectly caused to shift sliding frames, which move with the seat-supporting plates, and the outer of said frames carries an end frame, of wood or other material, which is thereby shifted to correspond with the movement of the seat, to enable the rear seat-arm to pass down back thereof and be out of the way, allowing a proper length of seat-arm being used with a pivot-connection for the hinge-arm down on a level with the seat.

In the drawings, Figure 1 is a side elevation of my improved car-seat. Fig. 2 is a sectional elevation of the other end of same on line *vv* of Fig. 3. Fig. 3 is a front elevation with one-half in section, taken on line *xx* of Fig.

2. Fig. 4 is a cross-section of Fig. 2 on line *yy*, and Fig. 5 is a sectional elevation of the outer end of the seat on line *zz* of Fig. 1.

A is the main frame and may be made in any suitable manner. As here shown it constitutes part of the car-wall and is provided with the castings or stationary parts B B, to which the hinge-arms are pivoted at *b*.

D is the outer hinge-arm, and D' is the inner hinge-arm, which arms are pivoted to the seat-back E at *e*. The lower part of the hinge-arms extend down below the pivot or fulcrum point *b*, and are united by a rigid connection *d*. By this means the inner hinge-arm D' is guided in a grooved frame F, secured to the car-wall and having the guide-grooves *f*, in which the projection *d'* on the hinge-arm D' extends, preventing the movement of the said hinge-arm toward or away from the car-wall, or in a direction longitudinally with the car-seat. The outer hinge-arm D has its upper portion made diamond shape, as indicated at *d''*, (dotted lines,) Fig. 1, to which the seat-arms C are secured. These seat-arms C are preferably formed of wood, and are arranged at right angles to each other, or substantially so, and project equally on both sides of the hinge-arm, as shown in Fig. 1, so that the opposite arms come into use with the reversing of the seat-back.

H H are guides secured to the frames B, and upon which the shifting seat-supporting plates I rest, running upon the cam-surface *i*, so as to shift and tilt the seat. The hinge-arms are provided with pins S, working in slots J in the plates I, so that any movement of the said hinge-arms in reversing the seat-back also shifts the seat-supporting plates I and their seat M upon the supports H. The hinge-arms have their throw limited by stops *a* on the frames B, as shown in Fig. 2. Arranged back of the stationary parts B and guided thereby are frames G, having flanges *g*, extending over the seat-supporting plates I, whereby the shifting of the seat will also cause the sliding frames G to shift in a corresponding direction and to substantially the same distance; but while the plates I are caused to tilt, the frames G reciprocate in the same plane. The frame G next to the car-wall might be dispensed with; but that on

the outer end of the seat is made to support the wooden frame L, which is caused to reciprocate, so as to move out of the way of the descending arm C, as shown in Fig. 1, and moving to the right or left of the fulcrum-point b, (see Fig. 1,) according to whether the back E is thrown to the left or right of the said fulcrum-point. By the shifting of the part L, I am enabled to use the proper length of arm-rests c, and located sufficiently close to the seat M without any inconvenience.

The entire construction of car-seat is one which is simple and has the advantage of enabling the proper proportion of parts to be used, employing what may be termed a "short arm" when compared with the stationary or fixed arm-rests at present in common use in railway-car seats.

I do not limit myself to the details of construction here shown, as they may be modified without departing from my invention; but the construction here set out is preferred.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a car-seat, a main frame, in combination with a reversible seat-back, hinge-arms pivoted to the main frame at the bottom and connected at the top with the seat-back, reversible seat-arms for the outside of the seat, secured to and moving with the hinge-arm and projecting laterally away from the seat and secured upon the outside of the hinged arms, a movable frame supported on the outside of the main frame and located under the projecting seat-arms and movable to one side or the other of the pivot of the hinge-arm to allow the seat-arm to pass down in the rear of said movable frame, and a seat-cushion supported independently of the movable frame, but on the outside of the main frame.

2. In a car-seat, a main frame, in combination with a reversible seat-back, hinge-arms pivoted to the main frame at the bottom and connected at the top with the seat-back, reversible seat-arms for the outside of the seat, secured to and moving with the hinge-arm and projecting laterally away from the seat and secured upon the outside of the hinge-arms, a movable frame supported on the outside main frame and located under the projecting seat-arms and movable to one side or the other of the pivot of the hinge-arm to allow the seat-arm to pass down in the rear of said movable frame, a connection between the said movable frame and hinge-arm, whereby the movement of the hinge-arm shifts the movable frame upon reversing the seat-back, and a seat-cushion supported independently of the movable frame, but on the inside of the main frame.

3. In a car-seat, the combination of a main frame, a shifting seat, a reversible back, hinge-arms connecting the back to the stationary frame, a shifting seat-support at each end of the frame, connected to the hinge-arms, and a sliding frame upon outer end of the

seat held by and movable with the seat-support.

4. In a car-seat, the combination of a main frame, a shifting seat, a reversible back, hinge-arms connecting the back to the stationary frame, a shifting seat-support at each end of the frame, connected to the hinge-arms, a sliding frame upon the outer end of the seat held against movement by and movable with the seat-support, and two seat-arms arranged at an angle to each other and connected to and movable with the outer hinge-arm.

5. The combination of the end iron main frame, a thin metallic hinge-arm for supporting the back, made diamond shape and pivoted to the main frame, a thick double seat-arm of wood, having the arm-rests arranged at an angle to each other and projecting beyond and secured to said diamond-shaped part of the hinge-arm, and a common pivot-pin for the iron hinge-arm and wooden arm-rests, in which said hinge-arm and arm-rests extend upon opposite sides of the main frame and secure the pivot on both sides.

6. In a car-seat, the combination of a main frame, a reversible seat-back, metallic hinge-arms pivoted at one end to the seat-back and at the other end to the main frame, two wooden seat-arms arranged at an angle of about ninety degrees with each other, secured to and projecting upon each side of the outer hinge-arm, and stops on the main frame acting on the metallic hinge-arms to limit the movement of the hinge-arms, but without contact with the wooden arm-rest.

7. In a car-seat, the combination of a main frame having no rigid arm-rest at the outer end, a reversible seat-back, a hinge-arm at the outer end of the seat, having its ends respectively pivoted to the main frame and seat-back and unsupported between its pivoted points against lateral movement, a hinge-arm at the inner end of the seat, having its ends respectively pivoted to the main frame and seat-back, and a guide to limit the travel and lateral movement of the inner hinge-arm, whereby the outer hinge-arm and seat-back are held against lateral movement by the inner hinge-arm and guide.

8. In a car-seat, the combination of the main frame, a reversible seat-back, a hinge-arm at the inner end of the seat, having its ends respectively pivoted to the main frame and seat-back, a continuous guide to limit the travel and lateral movement of the hinge-arm, and a hinge-arm at the outer end of the seat, having its ends respectively pivoted to the main frame and seat-back, and a metallic connection below the seat rigidly uniting the two hinge-arms, so that they shall move simultaneously, whereby the outer hinge-arm and seat-back are held against lateral movement by the continuous guide and inner hinge-arm, and no supports above the seat at the outer end are required.

9. The combination of the end iron main

frame, a thin metallic hinge-arm for supporting the back, made diamond shape and pivoted to the main frame, a thick double seat-arm of wood, having the arm-rests arranged at an angle to each other and projecting beyond and secured to said diamond-shaped part of the hinge-arm, whereby said hinge-arm and arm-rests extend upon opposite sides of the main frame, a pivot-pin common to the hinge-arm and arm-rests and main frame, and a wooden frame adjustably supported upon the outside of the main frame and directly below the wooden arm-rests, so as to be capable of being shifted transversely to the length of the seat to allow of the descent of the hinge-arm and arm-rests in reversing the seat.

10. The combination, in a car-seat, of the main frame A, having stationary parts B, the sliding frames G, guided thereby, the movable seat-supporting plates I, movable with and to move the frames G, the seat M, resting thereon, the seat-back E, and the hinge-arms D D', pivoted to the parts B and seat-back and provided with extensions and connections with the supporting-plates I, whereby the seat is shifted when reversing the seat-back.

11. The combination, in a car-seat, of the main frame A, having stationary parts B, the sliding frames G, guided thereby, the movable seat-supporting plates I, movable with and to move the frames G, the seat M, resting thereon, the seat-back E, and the hinge-arms D D', pivoted to the parts B, and seat-back provided with extensions, connections with the supporting-plates I, whereby the seat is shifted when reversing the seat-back, and a rigid connection between the two hinge-arms to hold them a given distance apart and cause them to move together.

12. The combination, in a car-seat, of the main frame A, having stationary parts B, the sliding frames G, guided thereby, the movable seat-supporting plates I, movable with and

to move the frames G, the seat M, resting thereon, the seat-back E, the hinge-arms D D', pivoted to the parts B and seat-back and provided with extensions, connections with the supporting-plates I, whereby the seat is shifted when reversing the seat-back, seat-arms C, secured to the outer hinge-arm D, and movable end frame L, secured to and moving with the outer sliding frame G.

13. The combination, in a car-seat, a main frame, a reversible seat-back, independent sliding seat-supporting plates arranged one at each end and guided by the main frame and shifted by the hinge-arms, hinge-arms pivoted to the main frame, seat-back and seat-supporting plates, a loose shifting seat supported on the independent plates, and a rigid frame for holding the said hinge-arms against said plates to prevent them from becoming displaced.

14. A car-seat having a reversible back and shifting seat-arms, combined with a shifting frame independent of the seat-cushion, arranged upon the outside of the main frame and below the arm-rests, and capable of being shifted transversely to the length of the seat to allow the descent of the shifting seat-arms.

15. A car-seat having a reversible back and shifting seat-arms, combined with a shifting frame independent of the seat-cushion, arranged upon the outside of the main frame and below the arm-rests and capable of being shifted transversely to the length of the seat to allow the descent of the shifting seat-arms, and mechanical connections between the arm-rests and the shifting frame to cause them to move simultaneously in opposite directions.

In testimony of which invention I hereunto set my hand.

HENRY S. HALE.

Witnesses:

J. WARREN HALE,

JNO. B. KILBURN.