

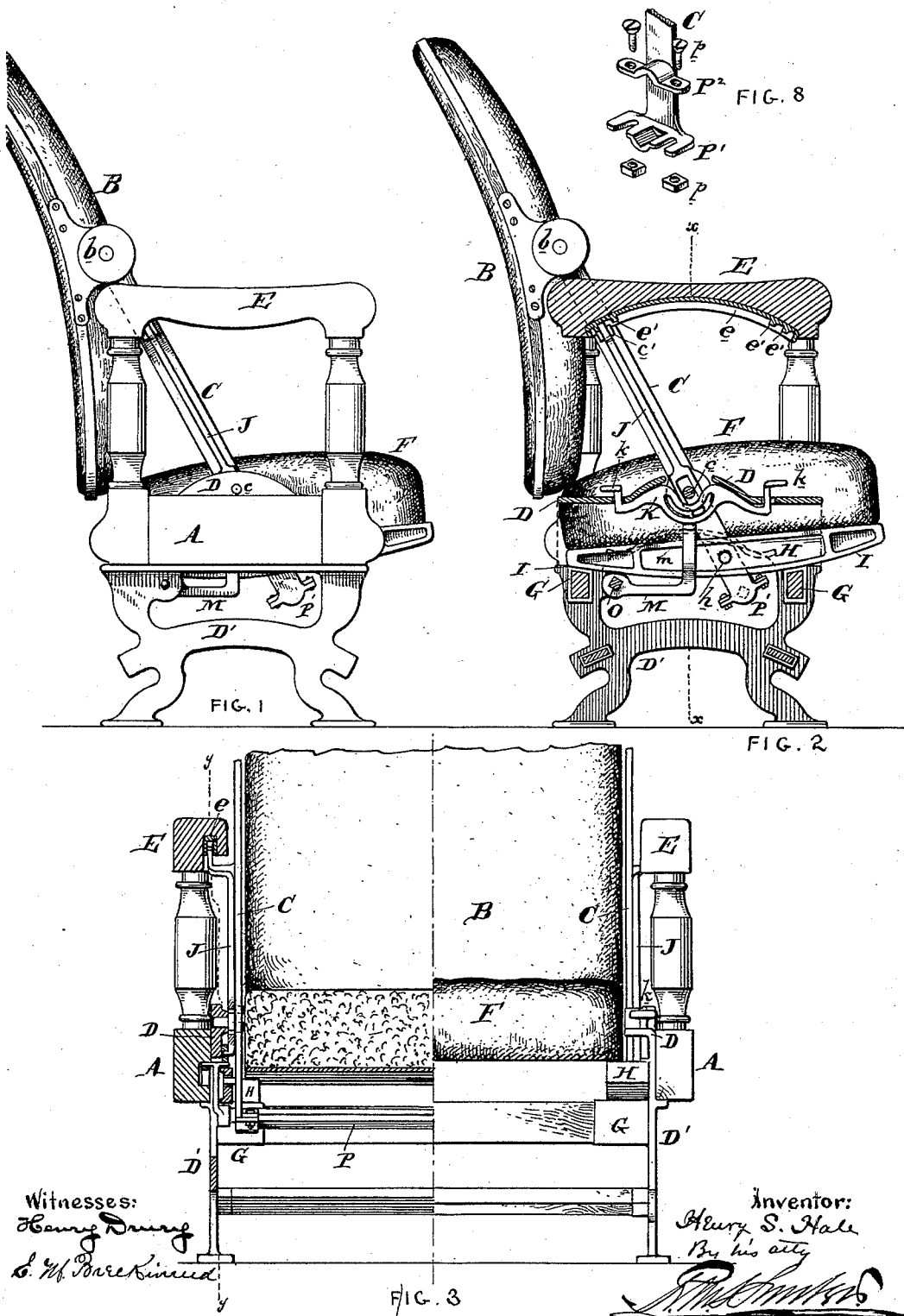
(No Model.)

2 Sheets—Sheet 1.

H. S. HALE.
CAR OR OTHER SEAT.

No. 417,823.

Patented Dec. 24, 1889.



Witnesses:
Henry D. Dwyer
C. W. Breckinridge

Inventor:
Henry S. Hale
By his atty
[Signature]

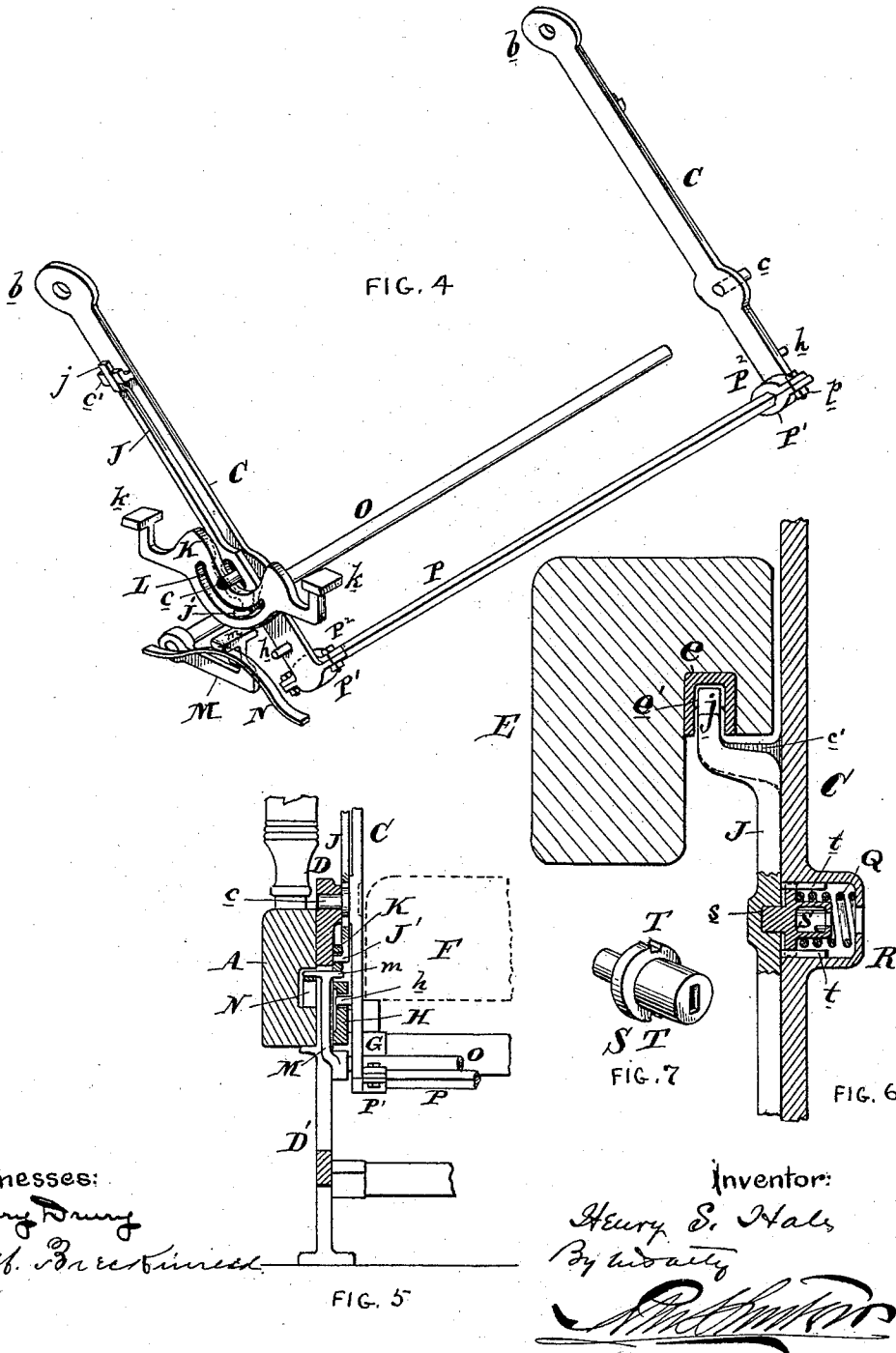
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2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

HENRY S. HALE, OF PHILADELPHIA, PENNSYLVANIA.

CAR OR OTHER SEAT.

SPECIFICATION forming part of Letters Patent No. 417,823, dated December 24, 1889.

Application filed September 12, 1888. Serial No. 285,187. (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 or other Seats, (Case B,) of which the following is a specification.

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

The object of my invention is to provide a more suitable construction, whereby there are no projections or other objectionable obstructions upon the seat-arms upon which to catch and tear the clothes.

My object is also to provide a more perfect means of guiding and supporting the hinge-arms upon which the back is pivoted, and to give them a provision for variable throw to vary the adjustment of the seat-back.

My object is also to provide a durable connection between the two hinge-arms, whereby they move as a rigid structure.

In carrying out my invention I prefer to adapt it to car-seats having not only reversible backs, but also provided with shifting and tilting seat-cushions. However, this latter is not necessary to my present invention.

The main frame, at one or both ends, is provided with an arm-rest, furnished, preferably, upon its under side with a continuous guide, into which a projection from the hinge-arm extends, and by which it is guided throughout the entire throw and prevented from rubbing against the wood-work of the seat-arm. The ends of this guide may be provided with one or more stops, on which suitable spring-catches carried by the hinge-arm may catch to hold the hinge-arms in different adjustments, and by suitable mechanism said catches at both ends of the seat may be simultaneously operated from either end. These spring-catches may be locked by suitable locks carried by the hinge-arms, so as to prevent the seat-back being reversed without first operating the lock. I also connect the two pivot-hinged arms at the bottom by means of a rigid connection secured in place by clamping devices of peculiar construction, hereinafter set out.

The general features of construction are

clearly shown in the drawings and fully described hereinafter.

In the drawings, Figure 1 is a side elevation of my improved seat. Fig. 2 is a sectional elevation of same on line *yy* of Fig. 3. Fig. 3 is a front elevation of my improved seat, with one-half in section on line *xx* of Fig. 2. Fig. 4 is a skeleton perspective view showing the hinge-arms, their connections, and catch-operating device. Fig. 5 is a sectional elevation of the lower part of the seat on line *xx* of Fig. 2, but with the hinge-arm raised to a vertical position. Fig. 6 is a sectional view through the hinge-arm, arm-rest, and guide, showing a suitable lock for securing the catch against movement. Fig. 7 is a perspective view of the locking-bolt removed; and Fig. 8 is a perspective view of one of the lower ends of one of the hinge-arms, showing the means for clamping the connecting-bar.

A is the main frame, having the legs D' extending down to the floor and formed at the upper part into the frames D, to which the hinge-arms are pivoted at *c*. The said frames D are also provided with the guides G, upon which the seat-supporting frames H rest and are shifted. The under or cam surfaces I of the frames H insure the tilting of the seat during the act of shifting.

F is the seat-cushion, which rests upon the frames H.

C are the hinge-arms, pivoted, as before stated, to the frames D at *c*, and connected at their lower parts below the said fulcrum points *c* with the frames H by pins *h*. The upper ends of these hinge-arms are pivoted to the seat-back B at *b* in any suitable manner. The lower ends of the hinge-arms are rigidly connected by a bar P, made rectangular in cross-section and received in sockets P', and clamped on its ends by caps P² and clamping screws or bolts *p*, as clearly shown in Figs. 4 and 8. By this construction both hinge-arms are required to move together, and much binding and jarring are obviated.

The frame A is provided with fixed arm-rests E, which are preferably curved upon their under side and provided with a metallic continuous guide *e* set therein, as shown in Figs. 2 and 6, into which the projections

c' from the hinge-arms extend and guide the
 said hinge-arms, preventing lateral move-
 ment and wear upon the arm-rests. By this
 construction it is evident that there are no
 5 projections or other obstructions upon the
 arm-rest upon which to catch the clothes or
 strike the arms. It is preferable that this
 guide *e* be made curved, as shown in Fig. 2,
 using *c* as the center, and I prefer to provide
 10 each end of the guide with stops *e'*, against
 which or between which a suitable spring-
 catch J, carried by the hinge-arms, may work,
 to control the adjustment of the seat-back.
 The catch J is clearly shown in Figs. 2, 4, and
 15 6, and extends down so as to be guided upon
 the fulcrum *c* of the hinge-arm, its lower ex-
 tremity being provided with a lug J'. This
 lug is received in a curved slot L of the lever-
 frame K, which is held up toward the ful-
 20 crum *c* by a lever M, having a cross-head at
 the top *m*, resting under said lever-frame K,
 and a spring N, arranged in the frame A and
 adapted to press upon the under side of the
 cross-head, to move the lever M upward. The
 25 action of these parts is to thrust the catch J
 upward, causing its end *j* to catch upon the
 stops *e'*. The curved groove L allows the hinge-
 arms to be shifted in reversing the seat-back
 without displacing the connection between the
 30 catch J and the lever-frame K. The lever-
 frame K is held up against the upper flange of
 the frame D, through which it has two pro-
 jections *k*, one upon either side of the ful-
 crum *c*. The function of these projections *k*
 35 is to provide means for the occupant to de-
 press the lever-frame K against the action of
 the spring N and withdraw the catch J from
 the projection *e'*, and it is evident that one
 of such projections at each end of the seat
 40 will be in easy reach of the occupant for each
 reversed position of the seat-back. There is
 a similar spring-catch device upon each end
 of the seat, and such spring-catches may be
 45 operated from either end of the seat by sim-
 ply connecting the levers M by means of a
 bar O, extending the length of the seat.

Referring to Fig. 6, I have shown a form of
 lock which may be employed to prevent the
 reversal of the seat, if desired. In this con-
 50 struction R represents the locking device car-
 ried by the hinge-arms C. S is the locking-
 bolt, which is adapted to snap into a recess *s*
 in the catch J, and is operated through the me-
 diation of a spring Q. In the socket of the
 55 lock are two parallel ribs *t*, upon which the
 bolt S is guided. The bolt S is provided with
 a flange having notches T, for receiving the
 guide-ribs *t*, and said bolt may be drawn back
 by the insertion of the key until it leaves the
 60 guide-ribs, and then by turning its flanges
 will rest against the said ribs and the bolt
 will be thrown out of action. Any other form
 of locking device may be employed, if de-
 sired.

65 I do not limit myself to the mere details of
 construction, as it is evident that they may
 be modified and varied to suit the ideas of

the designer; but the principles of construc-
 tion would remain the same. While I have
 shown a complete seat with both ends exactly
 alike, it is evident that one end may be con-
 structed against the car-wall, as is customary,
 and in that case the guide *e* may be bolted
 to the said walls in place of the arm-rests.

Car-seats of this nature can readily be
 made in pairs, each having independently-
 operated backs and seat-cushions, so as to be
 separately adjusted and with capacity to form
 what are known as "tête-à-tête chairs," which
 are simply two such seats as here shown ar-
 75 ranged side by side.

In this application I do not claim, broadly,
 the hinge-arm and locking-bolt carried wholly
 thereby to engage a groove in the seat-arm,
 nor the hinge-arm having a lug thereon to
 85 engage a continuous groove in the seat-arm
 to prevent lateral play of the back, as these
 features are the subject-matter of my appli-
 cation, Serial No. 286,395, wherein they are
 broadly claimed.

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

1. In a car or other seat, the combination
 of the rigid main frame, a reversible seat-
 95 back independent of the seat-cushion, two
 hinge-arms pivoted to the main frame and
 permanently connected at their upper ends
 to the seat-back, stationary or fixed arms se-
 cured to the main frame and provided with
 a continuous guide having stops to limit the
 throw of the hinge-arms, catches to secure
 said hinge-arms to said stops, a lock to pre-
 vent said catches being operated, and a slid-
 ing connection between the hinge-arms and
 100 guides.

2. In a car or other seat, the combination
 of the rigid main frame having an arm formed
 with a continuous curved guide for the hinge-
 105 arm connected to the main frame below the
 guide, a pivoted hinge-arm for supporting
 the seat-back at its middle by a permanent
 pivotal connection and guided in said arm-
 guide, and a hand-operated locking device
 extending to the pivot of the hinge-arm with
 the main frame to secure said hinge-arm
 rigidly at each end of the guide.

3. In a car or other seat, the combination of
 the rigid main frame having an arm formed
 with a continuous guide for the hinge-arm,
 120 having two or more stops at each end, a pivoted
 hinge-arm for supporting the seat-back, guided
 in said arm-guide, a spring-catch carried by
 the hinge-arm to catch upon said stops to sup-
 port the hinge-arm in different positions, and
 a locking device carried by hinge-arm and
 acting upon the spring-catch to hold it rig-
 idly against movement on the hinge-arm and
 thereby to secure said hinge-arm rigidly at
 each end of the guide.

4. In a car or other seat, the combination of
 the rigid main frame having an arm-rest pro-
 vided with a continuous guide, a reversible
 seat-back reversible on its hinge-arms, a

hinge-arm permanently pivoted to the middle of the back and also to the main frame below the curved guide, and a spring-catch carried by the hinge-arm and engaging with lugs or stops on the guide to hold said hinge-arm in different positions in the guide, and connecting mechanism arranged at the level of the seat for operating said spring-catch.

5. In a car or other seat, the combination of the rigid main frame, a reversible seat-back independent of the seat-cushion, the hinge-arms pivoted to the main frame and permanently connected at their upper ends to the seat-back, stationary or fixed arms secured to the main frame and provided with a continuous guide having stops to limit the throw of the hinge-arms, hand-operated catches having fixedly-located hand-operating pieces to secure said hinge-arms to said stops, and a sliding connection between the hinge-arms and guides.

6. In a car or other seat, the combination of the main frame, a reversible seat-back, two hinge-arms pivoted to the back and also the main frame, and having extensions below their pivotal connections with the main frame and terminating in a socket P', a connecting-bar P between the two hinge-bars, made rectangular in cross-section, caps P², and clamping bolts or screws p for clamping said bars in the sockets at each end.

7. In a car or other seat, the combination of the rigid main frame, a reversible seat-back, two hinge-arms having their ends respectively pivoted to the main frame and back at its middle, stop mechanism, substantially as described, carried by the arm-rests of the main frame and hinge-arms for supporting each of

the hinge-arms, and thereby hold the seat-back in different positions in each of its reversals, a hand-lever supported by the main frame at each end of the seat to operate the stop mechanisms, and positive connections extending from one end of the seat to the other to operate the stop mechanism at each end from either end.

8. In a car or other seat, the combination of the main frame, hinge-arms pivoted at one end to the main frame and at the other to the middle of the seat-back, and seat-back with spring-catches carried by the hinge-arms, and stops on the arms of the main frame to support said hinge-arms at different adjustments, said spring-catches extending down to or near the fulcrum of the hinge-arms and having a projection J', a lever-frame K, having groove or slot L for receiving the projection J' and projections k to operate it, the pivoted lever M, pressing upward against the lever-frame K, and the spring N for operating said lever M, substantially as and for the purpose specified.

9. In a car or other seat, the combination of the main or stationary frame-work, a reversible seat-back independent of the seat-cushion, hinge-arms pivoted to the main frame and to the middle of the seat-back, and a movable locking-bolt movable longitudinally upon and carried by the hinge-arm to lock it to the main frame-work.

In testimony of which invention I hereunto set my hand.

HENRY S. HALE.

Witnesses:

J. WARREN HALE,
JNO. B. KILBURN.