2 Sheets—Sheet 1.

# PERRY & BILLINGS.

## Railway Car Seat.

No. 84,755. Patented Dec. 8, 1868.

FIG. 1.

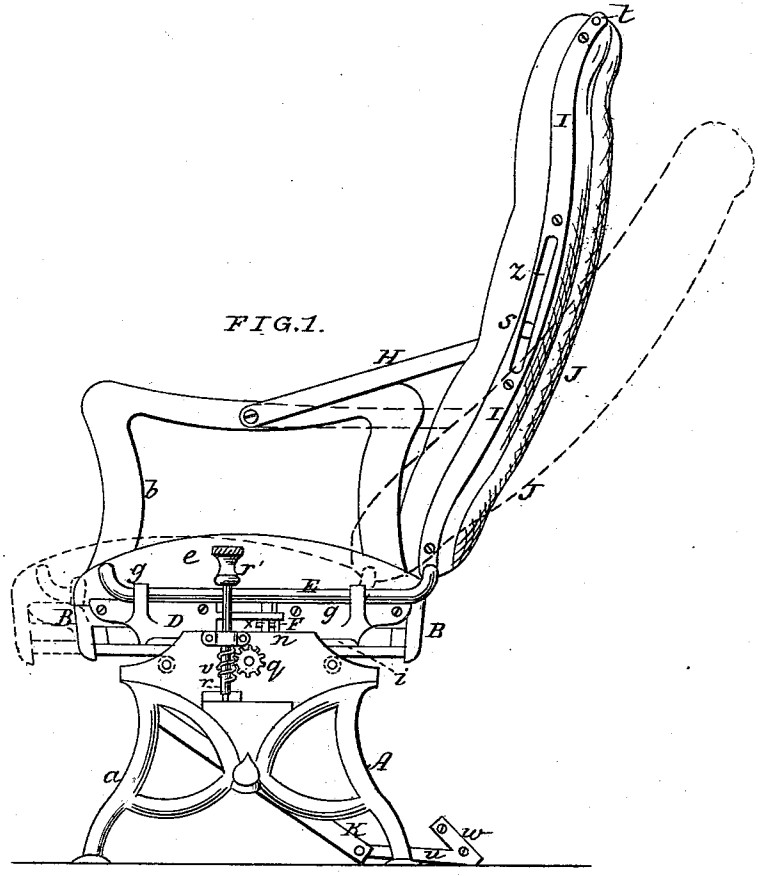
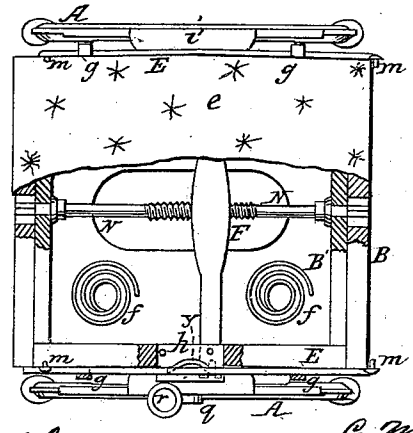



FIG. 2.




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A. Howson

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2 Sheets—Sheet 2.

# PERRY & BILLINGS.

## Railway Car Seat.

No. 84,755. Patented Dec. 8, 1868.

FIG 3.

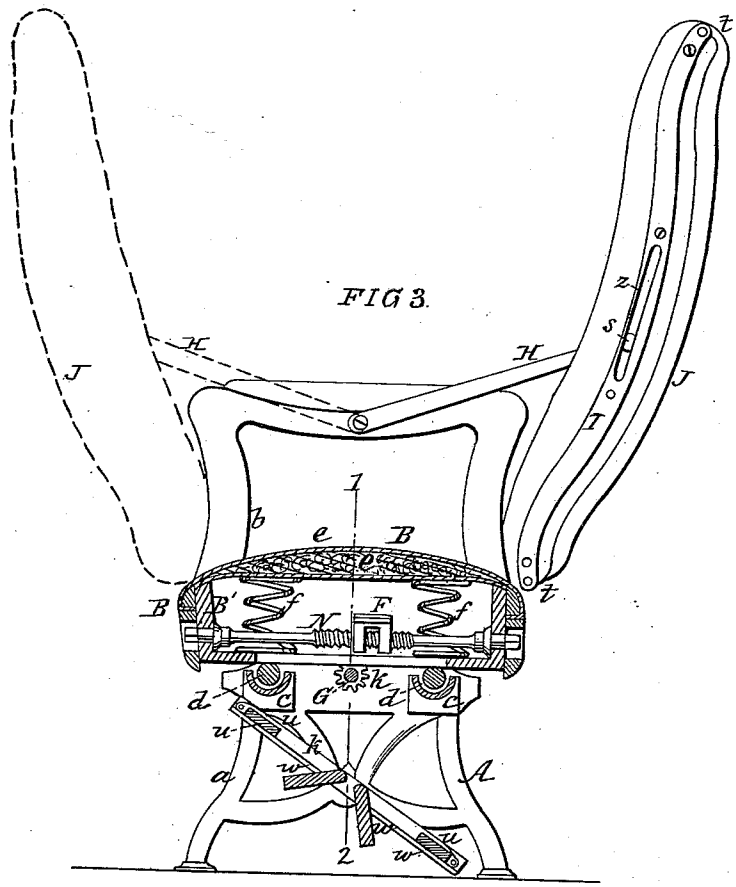


FIG 4.

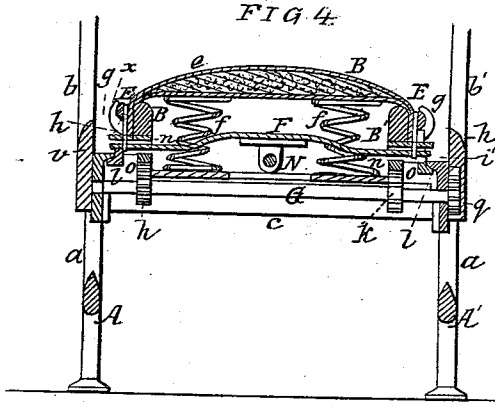
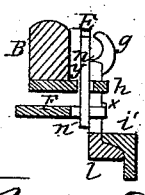


FIG. 5



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N. PETERS. Photo-Lithographer. Washington. D. C.

# United States Patent Office.

G. W. PERRY AND J. D. BILLINGS, OF WILMINGTON, DELAWARE.

*Letters Patent No.* 84,755, *dated December* 8, 1868.

## IMPROVED SEAT FOR RAILWAY-CARS.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern.*

Be it known that we, G. W. PERRY and J. D. BILLINGS, of Wilmington, Delaware, have invented certain Improvements in Seats for Cars, &c.; and we do hereby declare the following to be a full, clear, and exact description of the same.

Our improvement consists of a chair car-seat, having a reversible back, which may be readily adjusted and secured on either side of the seat, and at any desired inclination to the latter.

In order to enable others skilled in the art to make our invention, we will now proceed to describe its construction and operation, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1, Sheet No. 1, is a side elevation of our improved seat, one of the arms being removed;

Figure 2, a plan view, a part of the seat being removed;

Figure 3, Sheet No. 2, a sectional elevation;

Figure 4, a sectional elevation on the line 1–2, fig. 3; and

Figure 5, a detached view of part of the chair, drawn to an enlarged scale.

The side frames A A′ of the chair each consists, in the present instance, of a metal standard, *a*, and a wooden "arm," *b*, the standards being connected together by cross-pieces *c c*, and in the frames turn the journals of rollers *d d*, which extend across the chair above the cross-pieces.

On the rollers rests a seat, B, consisting of a box, B′, covered by a cushion, *e*, the latter resting upon springs, *f*, which bear on the bottom of the box.

At each side of the box is a plate, D, fig. 1, having in the centre an opening, *x*, and at the lower edge of the plate is a flange, *i*, which projects below a flange, *i′*, on the side frame, fig. 5.

At each side of the box B′ slides a bar, E, which is curved upward at each end, and at the centre of the bar is an arm, *n*, which extends downward into a curved slot, *y*, in a plate, *h*, projecting from the adjacent side of the box into the opening *x*, figs. 2 and 5.

Each bar E is retained in its place by lugs, *g g*, on the plate D, and at each end of the bar, on the inner side of the same, is a pin, *m*, fig. 2.

Below the seat is secured a foot-rest, consisting of an oblong frame, K, arranged to vibrate on trunnions adapted to bearings in the frames A A′, and to the opposite sides of the frame are hinged arms, *u*, connected together by strips, *w*, placed at such an angle that, when the rear arms *u* are parallel with the floor, the rear strip *w* will be at an angle to the latter, as shown in fig. 1.

Across the box B′ extends a plate, F, each end of which is slotted, to receive one of the arms *n*, and through a nut, secured to the centre of the plate F, extends a screw, N, the opposite ends of which project through, and turn in the front and rear sides of the box B′.

Shoulders on the screw prevent any longitudinal motion of the same, and at each end is a square projection, for the reception of a key, by which the screw may be turned, the revolution of the screw moving the plate F, and the bars E E, to which it is connected, towards the front or rear side of the seat.

At the under side of the seat are two racks, *o o*, to which are adapted the teeth of pinions *k*, on a shaft, G, which turns in the side frames A A′, and at one end of the shaft is a worm-wheel, *q*, figs. 1 and 4, which gears into a worm, *v*, on a vertical spindle, *r*, the latter turning in bearings on the side frame A′, and having at the upper end a knob, or other suitable handle, *r′*.

To the inner side of each arm *b*, at the centre of the same, is jointed a rod, H, the opposite end of which is connected to a pin or block, *s*, arranged to slide in a slot, *z*, in a plate, I, secured to each edge of the back, J, of the chair, and at the opposite ends of each plate I are openings or recesses, *t*, for the reception of the pins *m* on the bars E.

The slots *y*, in the plates *h*, are of such a form, that when the arms *n*, of the bars E, are at the centres of the slots, the bent ends of the opposite bars E will be far enough apart to receive between them the lower end of the back, J, and when, by turning the screw N, the plate F is moved so as to bring each arm *n* to either end of the slot *y*, the bent ends of the opposite bars will be turned inward towards each other, so as to introduce the pins *m* into the openings or recesses *t*, the back, J, being thus clamped between the bent ends of the opposite bars E, and jointed to the pins *m*.

By turning the spindle *r*, and thereby rotating the shaft G, the seat B is moved longitudinally, so as to impart any desired inclination to the back, J, which turns on the pins *s*, this inclination being greatest when the seat is at the limit of its forward movement, as shown by dotted lines, fig. 1.

Where it is desired to reverse the back, the screw N is turned so as to move the arms *n* to the centres of the slots *y*, thereby moving apart the rods E E, withdrawing the pins *m* from the openings *t*, and releasing the back, J.

The back is now turned to the opposite side of the chair, and upon the pins *s*, so that the end that was uppermost will be brought against what was the front edge of the seat. The back is then so adjusted that on turning the shaft N, the pins *m* will be introduced into the adjacent openings or recesses *t*, and will secure the back in the desired position, as shown in dotted lines, fig. 3.

It will be seen that as the bent ends of the rods E are brought towards each other, to secure the back, J, the rods are also carried towards the back of the seat,

their front bent ends being thus drawn back from the edge of the seat, where they would otherwise be in the way of the occupant.

As the back J is reversed, the pins or slides *s*, to which the rods are secured, are brought towards the lower ends of the slots *z*, and the fulcrum on which the back turns is thus brought so much below the centre of the back that a slight forward movement of the seat will impart a much greater inclination to the back than if the rods H were jointed to the back, near the centre of the same.

Inasmuch as the longitudinal movement of the seat is effected by a wheel, operated by a worm, the latter will act as a lock, to prevent the turning of the wheel and the movement of the seat, except when the worm-shaft is revolved. When necessary, the arms *u*, of the foot-rest, with the strips *w*, may be turned so as to occupy a position within the frame K, as shown in fig. 3.

It will be evident that, although we have illustrated and described our improvement as connected with a car-seat, it is equally applicable to reclining-chairs, and seats of other kinds.

We claim as our invention, and desire to secure by Letters Patent—

1. A seat, B, capable of longitudinal adjustment between side frames A A′, in combination with a reversible back, which is connected by arms H to the side frames, turns on an adjustable fulcrum on said arms, and which may be jointed to either edge of the seat, all substantially as and for the purpose described.

2. The back, J, with its slots *z*, and pins *s*, sliding in the said slots, in combination with arms H, jointed to the side frames and to the pins, substantially as and for the purpose specified.

3. The bent rods E, having pins *m* at the ends, and sliding and turning at the sides of the seat B, in combination with a reversible back, J, having openings *t*, for the reception of the pins *m*, substantially as described.

4. The rods E, with their pins *m* and arms *n*, in combination with the box B′, the slotted plates *h*, and the traversing-plate F, connected to the arms *n n*, the whole being arranged and operating substantially as set forth.

5. The sliding seat B, with its ratchets *o o*, in combination with the shaft G, pinions *k* and *q*, and a worm, for operating the said shaft, substantially as set forth.

6. The frame K, which is hung between the side frames A A′, and to which are hinged arms *u u*, connected by cross-strips *w w*, substantially as and for the purpose described.

In testimony whereof, we have signed our names to this specification, in the presence of two subscribing witnesses.

G. W. PERRY.
J. D. BILLINGS.

Witnesses:
JOHN O'DONNELL,
PHILIP LEWIS.