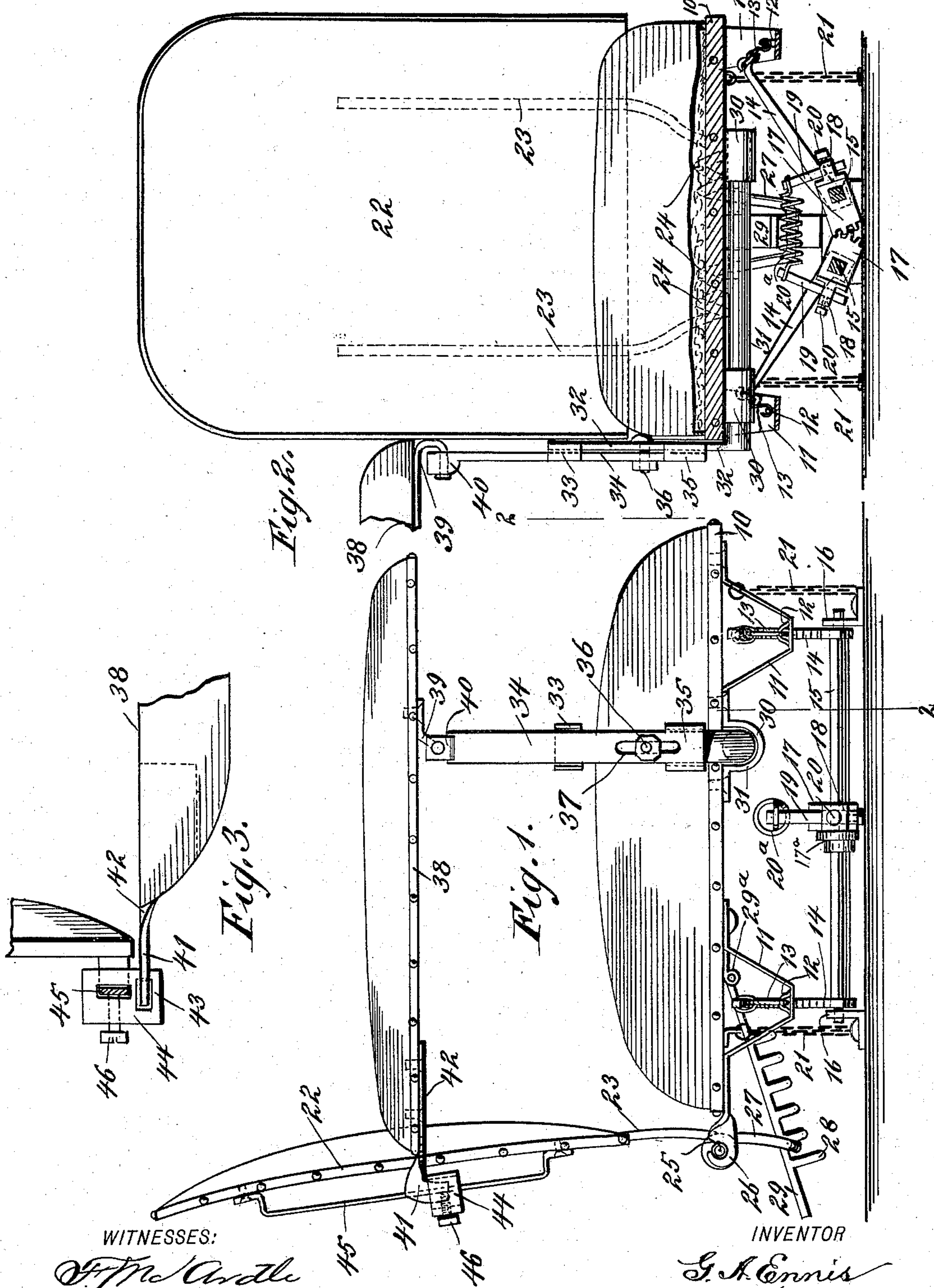


(No Model.)

G. A. ENNIS.  
SEAT.

No. 504,915.

Patented Sept. 12, 1893.



WITNESSES:

*F. M. Andle*  
*Co. Badgwick*

INVENTOR

*G. A. Ennis*  
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ATTORNEYS.



# UNITED STATES PATENT OFFICE.

GEORGE A. ENNIS, OF LIVINGSTON, MONTANA.

## SEAT.

SPECIFICATION forming part of Letters Patent No. 504,915, dated September 12, 1893.

Application filed October 15, 1892. Serial No. 448,990. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE A. ENNIS, of Livingston, in the county of Park and State of Montana, have invented a new and Improved Seat, of which the following is a full, clear, and exact description.

My invention relates to improvements in seats and especially to such seats as are adapted to be arranged in the cab of a locomotive, although the seat may be used for other purposes if desired.

The object of my invention is to produce a simple and substantial seat which is suspended upon springs in such a way that it is extremely easy and comfortable, which may be quickly and nicely adjusted so as to hold it at any desired height, which is provided with an adjustable back, which may be held at any desired angle to the seat bottom, and which has an arm which may also be adjusted vertically to suit the person using the seat.

To these ends my invention consists in certain features of construction and combinations of parts, which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the seat embodying my invention. Fig. 2 is a broken cross section on the line 2—2 in Fig. 1. Fig. 3 is a broken sectional plan, showing the connection between the seat back and the seat arm.

The seat bottom is provided with suitable upholstery, although a plain bottom may be used, and on opposite sides near the ends are depending hangers or brackets 11 which are provided with eyes 12 at their lower ends, and to these eyes are attached chains 13, although links may be substituted, and the chains connect with the free ends of levers 14 which levers are oppositely arranged in pairs near the ends of the seat, as shown in Fig. 1, and each pair of levers converge beneath the seat, as shown in Fig. 2, and the levers at their lower ends are secured to parallel shafts 15 which are preferably rectangular in cross section and are journaled in floor brackets 16. The shafts 15 are provided be-

neath the seat and preferably near the center with oppositely arranged and interlocking gears 17, see Fig. 2, and these gears have outwardly extending shanks 18 which carry upwardly extending arms 19, the arms being held in the shanks by set screws 20. The gears 17 are held to mesh by the collars 17<sup>a</sup> which are secured to the gears and shafts. The arms 19 are connected at the top by a spiral spring 20<sup>a</sup> which is sufficiently stiff to stand the weight of the seat and a person sitting on it, but which yields under the pressure of its load. This renders the seat very easy and the spring normally pulls the upper ends of the arms 19 toward each other, thus tilting the gears 17, rocking the shafts 15, and raising the outer ends of the levers 14 and consequently the seat carried by the levers. It will thus be seen that the height of the seat may be regulated by adjusting the arms 19 vertically, as when the arms are raised their leverage is increased and consequently the levers 14 are raised higher at their free ends.

To prevent the seat from swaying too much, sets of chains 21 are arranged at the corners and attached to the floor beneath. At one end of the seat is a suitable back 22 which is preferably upholstered, and secured to the back are parallel arms 23 which are preferably formed of a single piece of stiff wire and these arms extend downward below the seat back and are formed into coils 24 which encircle a shaft 25 held in hangers 26 at one end of the seat, and the wire is formed into a loop 27 near the center of the shaft, see Fig. 2, which loop extends downward and is adapted to engage the teeth 28 on the rack bar 29, which bar is hinged to the seat bottom, as shown at 29<sup>a</sup> in Fig. 1. It will thus be seen, that by raising the rack bar and swinging the back 22 to bring it to the desired point and then again dropping the rack bar into engagement with the loop 27, the back may be held at any desired angle in relation to the seat bottom. Near the front end of the seat and on the under side of the seat bottom are brackets 30 in which is held a transverse bar 31 and this projects from one side of the seat and terminates in an upwardly extending bracket arm 32 which, at



its upper end terminates in a clasp 33 which embraces opposite edges of a second bracket arm 34, which arm is held parallel with the arm 32 and has at its lower end a clasp 35, similar to the clasp 33, and the clasp 35 embraces opposite edges of the arm 32. The two arms are held together and fastened at the desired height by a bolt 36 which projects through slots 37 in the arms. The bracket arm 34 supports the seat arm 38 which is preferably upholstered, and this arm has near its front end and on the under side a hook 39 which engages an eye 40 on the arm 34. This forms a firm connection between the two armed bracket and the seat arm and permits the seat arm to move longitudinally when the seat back is tilted. The movement of the arm is further facilitated by the fact that the cross bar 31 may turn in its bearings in the brackets 30. At the rear end of the seat arm is a latch 41 which has a shank 42 secured to the under side of the seat arm and this latch is adapted to engage a slot 43 in the bearing block 44 which is held to slide on the rail 45 secured to the seat back 22, and the block is held in a desired position by a set screw 46 which extends through the block and impinges on the rail. It will be seen then that by means of this adjustable block and the vertically adjustable bracket composed of the two arms 32 and 34, the seat arm may be brought to any desired height.

It will also be understood from the foregoing description that the seat may be adjusted to suit any person, that it may be changed so as to enable the person to change his position and still be comfortable whenever he so desires, that its support is such that it forms an exceedingly easy seat, that it is always level, that the spring may be made of a tension to suit any weight, and that if desired the seat may be easily used without the arm.

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

1. A seat, comprising a seat bottom, parallel shafts arranged beneath the seat bottom and journaled in suitable supports, diverging oppositely arranged levers secured to the shafts and arranged to support the seat bottom, upwardly extending arms carried by the shafts, a spring connecting the arms, and a

gear connection between the two shafts, substantially as described.

2. A seat, comprising a seat bottom, parallel shafts arranged beneath the seat bottom and journaled in suitable supports, diverging levers carried by the shafts and arranged to support the seat, vertically adjustable arms arranged opposite one another and secured to the shafts, a spring connection between the two arms, and a gear connection between the shafts, substantially as described.

3. A seat, comprising a seat bottom having oppositely arranged depending brackets secured thereto, parallel shafts arranged beneath the seat bottom and journaled in suitable supports, diverging levers carried by the shafts and having their outer ends connected with the seat brackets, a gear connection between the two shafts, vertically adjustable arms carried by the shafts, and a spring connecting the arms, substantially as described.

4. A seat, comprising a suitable seat bottom, parallel shafts journaled beneath the seat bottom diverging levers carried by the shafts and having a flexible connection with the seat bottom, segmental meshing gears carried by the shafts and having oppositely extending shanks, vertically adjustable arms secured in the gear shanks, and a spring connecting the arms, substantially as described.

5. A seat, comprising a suitable bottom, parallel shafts arranged beneath the seat bottom and journaled in supports, diverging oppositely arranged levers secured to the shafts and arranged to support the seat bottom, springs to hold the levers in a raised position, and a gear connection between the two shafts, substantially as described.

6. The combination with the seat bottom and the tilting seat back, of a rod secured to the seat back, a block adjustable vertically on the rod, a swinging and vertically adjustable support carried by the seat bottom, and a main arm secured to the vertically adjustable support and having a latch connection with the slide block on the seat back, substantially as described.

GEORGE A. ENNIS.

Witnesses:

HENRY S. POTTS,  
FRANK S. WEBSTER.