

Nov. 4, 1958

M. FOX

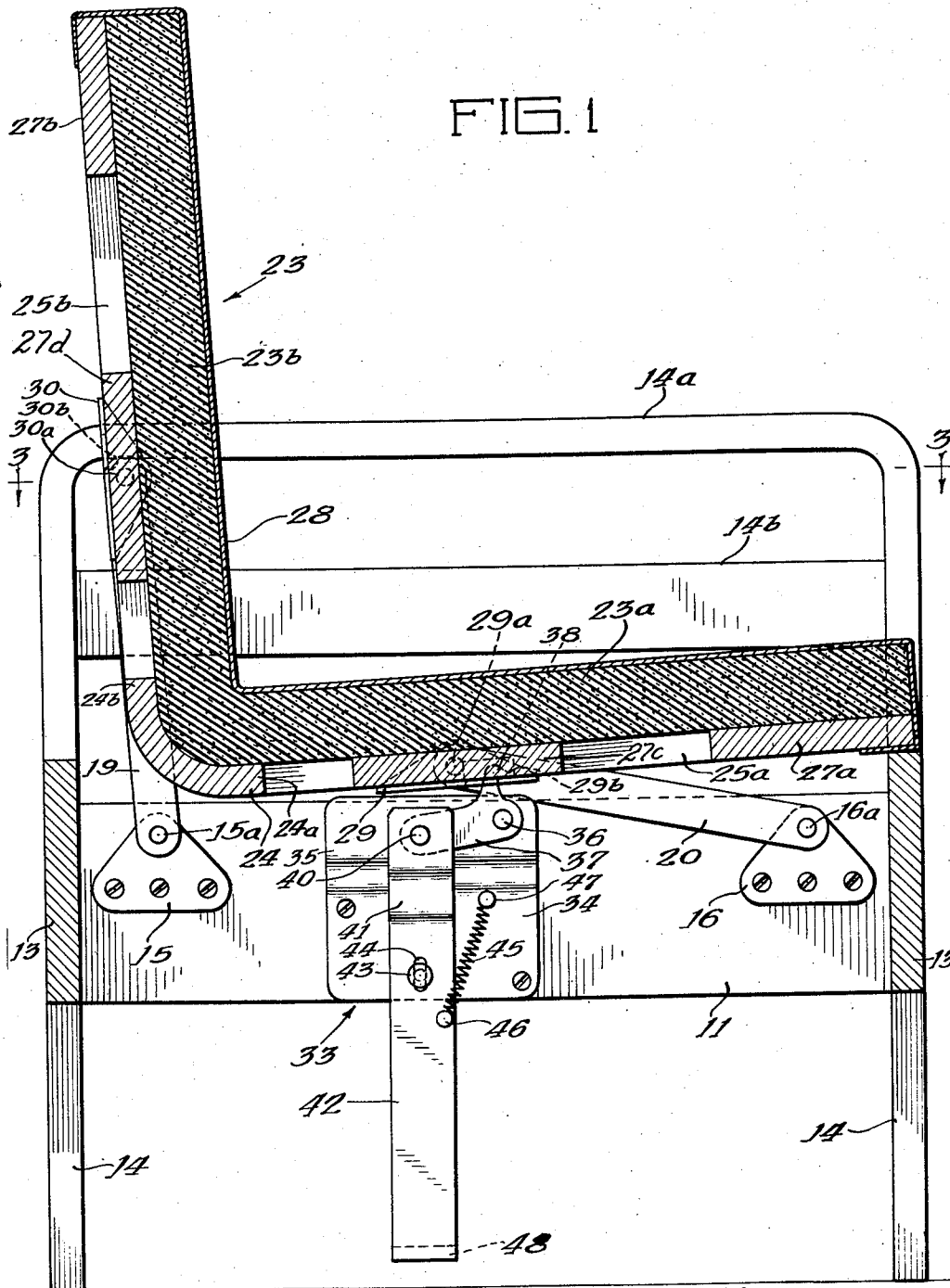
2,858,880

REVERSIBLE SEAT FOR RAILWAY CARS

Filed July 14, 1955

4 Sheets-Sheet 1

FIG. 1



Inventor:
Martin Fox
By: Schrodew, Hofgren,
Brady & Wegner
Attorneys

Nov. 4, 1958

M. FOX

2,858,880

REVERSIBLE SEAT FOR RAILWAY CARS

Filed July 14, 1955

4 Sheets-Sheet 4

FIG 4

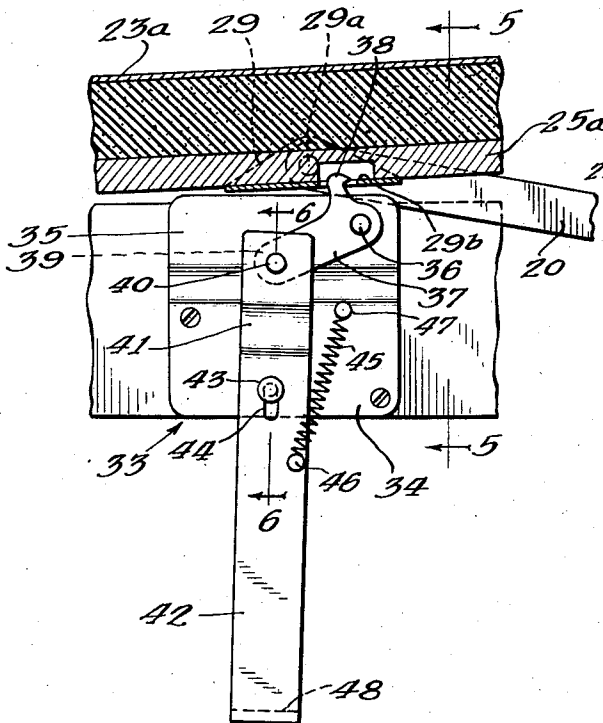


FIG. 5

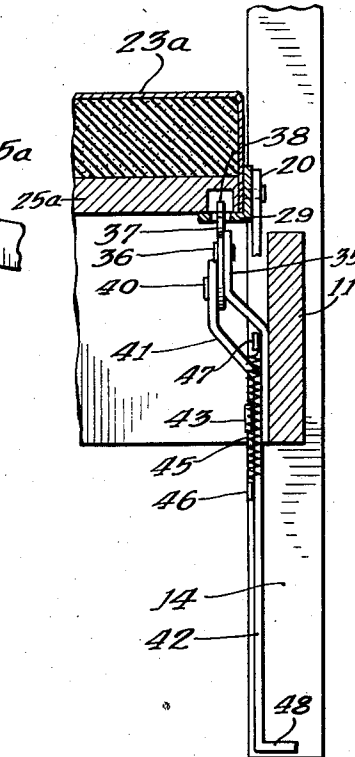
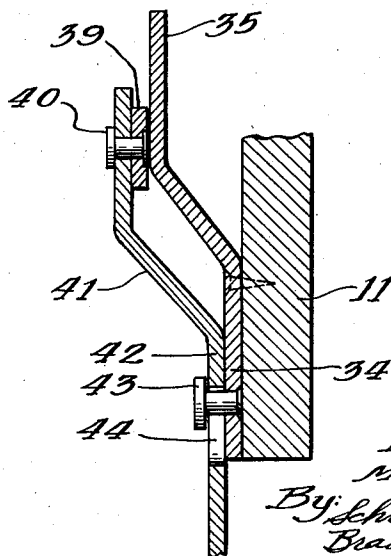


FIG. 6



Inventor:
Martin Fox
By Schraden, Hofgren,
Brady & Wegner
Attorneys

1

2,858,880

REVERSIBLE SEAT FOR RAILWAY CARS

Martin Fox, Chicago, Ill., assignor to The Seng Company, a corporation of Illinois

Application July 14, 1955, Serial No. 522,083

2 Claims. (Cl. 155—99)

This invention relates to a reversible seat for railway cars; and in particular it relates to a seat construction in which a seat member has two angularly disposed fixed seat portions each of which may serve either as the base or the back of a seat, and the seat member is linked to a frame for swinging movement between oppositely facing positions with each seat portion serving as the base of the seat in one of the two positions.

The principal object of the invention is to provide a reversible seat for railway cars which is of very simple construction and has a strong and durable linkage.

A further object of the invention is to provide a reversible seat structure which is latched in either one of its two oppositely facing positions by a simple foot actuated latch mechanism.

A further object of the invention is to provide a reversible seat structure for vehicles in which a single latch serves to latch the seat member in either of its two oppositely facing positions.

The invention is illustrated in a preferred embodiment in the accompanying drawings, in which:

Figs. 1 and 2 are longitudinal sectional views of the seat structure with the seat member in its two oppositely facing seat positions, said sections being taken substantially along the line 1—1 of Fig. 3;

Fig. 3 is a section taken as indicated along the line 3—3 of Fig. 1;

Fig. 4 is a fragmentary section taken as indicated along the line 4—4 of Fig. 3;

Fig. 5 is a section taken as indicated along the line 5—5 of Fig. 4; and

Fig. 6 is an enlarged fragmentary section taken as indicated along the line 6—6 of Fig. 4.

Referring to the drawings in greater detail, and referring first to Figs. 1 to 3, the seat structure of the present invention includes a rectangular base member, indicated generally at 10, which has an inner end rail 11, an outer end rail 12 and side rails 13, the base member being supported at its corners upon four legs 14. The legs 14 extend above the base 10 to receive arm rails 14a and 14b. The inner end rail 11 is so called because it is positioned adjacent the aisle when the seat structure is installed in a railway car, while the outer end rail is near the car wall. Mounted on the inner end rail 11 adjacent the side rails 13 is a pair of support plates 15 and 16, while on the outer end rail 12 aligned with the support plates 15 and 16 is a pair of support plates 17 and 18. The support plates 15 to 18, inclusive, are provided, respectively, with pivots 15a to 18a to receive swinging seat member support links 19, 20, 21 and 22, respectively.

A seat member, indicated generally at 23, is mounted upon the swinging support links 19 to 22. The seat member 23 is substantially L-shaped in cross section, and includes two identical angularly disposed, fixed seat portions 23a and 23b, each of which may serve either as the bottom or as the back of a seat depending upon which way the seat member is facing. As seen in Fig. 1, the seat portion 23a is the bottom and the seat portion 23b is the

2

back, while in Fig. 2 these positions are reversed. The seat member 23 has a frame which is essentially in the form of two rectangles in angular relationship to one another, the rectangles having a common longitudinal arcuate central stringer 24 which has an arm 24a forming part of the seat portion 23a and a second arm 24b forming part of the seat portion 23b. The frames for the seat portions 23a and 23b include inner end bars, numbered 25a and 25b, respectively, which are adjacent the inner end rail 11 of the base member 10; and there are also outer bars 26a and 26b (see Fig. 3) which are adjacent the outer end rail 12 of the base member 10. The rectangular frames are completed by outer longitudinal bars 27a and 27b, and any desired number of intermediate brace bars may also be used, such as bars 27c and 27d, as is usual in seat frame construction. The seat portions 23a and 23b are provided with suitable padding and upholstery, indicated at 28.

At each end of each of the seat portions 23a and 23b is an angle member, those on the inner end rails 25a and 25b being designated as 29 and 30, respectively, and those on the outer end rails 26a and 26b being designated as 31 and 32. The swinging links 19 and 20 are connected, respectively, to pivots 30a and 29a on the angle members 30 and 29; while the swinging support links 21 and 22 are connected to pivots 32a and 31a, respectively, on the angle members 32 and 31. Comparing Figs. 1 and 2, when the seat member 23 is in the position of Fig. 1 the angle members 29 and 31 are substantially midway between the longitudinal rails 13 of the base 10; while in the position of Fig. 2 the angle members 30 and 32 occupy that location. Shifting of the seat member between the position of Fig. 1 and the position of Fig. 2 is accomplished by pushing forward and down upon the seat portion which occupies the position of a seat back so as to swing the links 19, 20, 21 and 22 about their support pivots 15a, 16a, 17a and 18a, respectively.

The seat members are latched in either of their two positions by means of a latch assembly, indicated generally at 33, which is mounted on the inner end rail 11 of the base member 10, so that the latch assembly is adjacent a railway car aisle where it may be easily manipulated. The latch element of the latch assembly 33 engages an open lip 29b on one arm of the angle member 29, or a similar open lip 30b on one arm of the angle member 30, depending upon which of the two seat portions forms the seat bottom. As best seen in Fig. 4, the open lip 29b is in register with a recess in the end bar 25a of the seat frame. Similarly, there is a recess in the end bar 25b of the seat frame in register with the open lip 30b of the angle member 30.

Referring further to Figs. 4, 5 and 6, the latch assembly 33 includes a latch mounting plate 34 which is secured to the inside of the inner end rail 11 and has an inwardly offset latch supporting portion 35 which, as best seen in Fig. 5, extends to a position beneath the ends of the seat portions 23a or 23b. The latch supporting portion 35 of the mounting plate 34 is provided with a pivot 36 to receive a bell crank latch member 37 which has one arm 38 provided with a hook to engage the open lip 29b or the open lip 30b, and a second arm 39 having a pivot 40 by means of which the bell crank is connected to an upright latch actuating arm 41. As best seen in Figs. 5 and 6, the latch actuating arm 41 is offset in a manner similar to the latch mounting plate 34 so that it has a combined attaching and actuating portion 42 the upper portion of which is in sliding contact with the face of the latch mounting plate 34 with which it is connected by means of a headed pin 43 extending through a slot 44. As seen in Fig. 4, the tension spring 45 is connected to a stud 46 on the actuating arm and a stud 47 on the latch mounting plate 34 so as to urge the actuating arm 41 up-

3

wardly, which rocks the bell crank latch member 37 into a position with the hook on the arm 38 in engagement with the open lip 29b or 30b as the case may be. Conveniently the lower portion 42 of the actuating arm 41 extends to a position close to the floor and has an outturned foot pedal portion 48 so that a person desiring to reverse the position of the seat member 23 need only step on the foot pedal portion 48 to disengage the latch member 37 from the open lip with which it is engaged.

The foregoing detailed description is given for clearness of understanding only and no unnecessary limitations are to be understood therefrom, as some modifications will be obvious to those skilled in the art.

I claim:

1. A reversible seat structure for vehicles, comprising: a rectangular base member; a seat member having two angularly disposed fixed seat portions each of which may serve either as the bottom or as the back of a seat, said seat member being swingably supported on said base member for movement between two oppositely facing positions with each of said seat portions serving as the bottom of the seat in one of said two positions; a latch plate on each of said seat portions at a point which is adjacent the center of an end of the frame when said seat portion forms the base of the seat; a bell crank with a latch lug on one arm to selectively engage either latch plate; a vertically slideable, depending latch activating arm secured to the other leg of the bell crank, said arm having a laterally projecting foot piece at its lower end; and spring means urging said arm upwardly.

2. In a reversible seat mechanism for vehicles which includes a rectangular base member and a seat member having two angularly disposed fixed seat portions each of

4

which may serve either as the bottom or as the back of a seat, seat operating mechanism comprising: pivot plates secured in identical positions on the two ends of each of said seat portions; two support plates on each end of the base member; a swinging link connecting each pivot plate to one of said support plates so that the seat member may swing on said links between two oppositely facing positions with each of said seat portions serving as the bottom of the seat in one of said two positions; a latch plate fixedly secured to each seat portion at a point which is adjacent the center of one end of the base member; a mounting plate on the frame adjacent the latch plate; a latch member pivotally mounted on the mounting plate in releasable engagement with the latch plate; a vertically slideable latch actuating arm making a pin and slot connection with said mounting plate and operatively connected to the latch member to release the latch member as it is moved down, said arm having a projecting foot piece at its lower end; and a tension spring connected to the actuating arm and mounting plate to urge the arm upwardly.

References Cited in the file of this patent

UNITED STATES PATENTS

130,011	Brooke	July 30, 1872
316,735	Buntin	Apr. 28, 1885
324,129	Liversey	Aug. 11, 1885
343,414	Woodmansee	June 8, 1886
2,546,834	Pfau	Mar. 27, 1951

FOREIGN PATENTS

409,792	Great Britain	May 10, 1934
---------	---------------	--------------