To all whom it may concern:

Be it known that I, Edward Copeland Lang, a citizen of the United States, and a resident of Melrose, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Wall Ends for Car-Seats, of which the following is a specification.

This invention has relation to seats for railway cars, preferably with steel side wall construction, although it is also adaptable to wooden cars.

Ordinarily in modern steel cars where the seats are arranged in two rows, one on each side of the car, it is customary to support the aisle end of the seat by a pedestal or standard and to support the wall end of the seat by a fixture which is attached directly to the wall of the car.

In practice, car furniture is manufactured by others than those by whom the cars are built but is installed by the railroad company or car builder after the car has been completed. It is desirable, however, that during the construction of the car it should be provided, so far as possible, with those parts or fixtures which are to be permanently attached to the car structure, so as to make it possible thereafter easily to equip the car with the seats. Such cars are, according to modern methods, preferably made of structural and sheet steel, although the construction of wooden cars has not entirely ceased.

The object of the present invention is to provide an end fixture which forms a part of the seat and yet which may be located and fixed to the car during the construction thereof, so as to properly locate and receive the remainder of the seat when the car is being furnished.

Another object of the invention is to provide a fixture of the character mentioned which may be constructed of sheet metal, and thus enable a tough durable fixture to be produced at relatively small cost and with greater accuracy than is possible where castings are employed. The wall fixture sustains a portion of the weight of the seat and of the passengers, and it must be so constructed as to withstand relatively heavy strains, due to the weight mentioned, and also to the shocks resulting from shifting the back whether it be of the walk-over or turn-over type. Hence, in carrying out my invention, I employ what I term a wall fixture, which, as stated, is made of sheet metal stamping and which is supplied to the car builder and secured permanently to the side wall of the car during the construction of the latter. It may, however, be attached to the car wall when the seats are installed, as for instance in the case of wood sided cars.

This wall fixture is subsequently attached or secured the seat end plate which forms a part of the actual seat structure and which fits accurately upon and is secured to the wall fixture.

On the accompanying drawings, Figure 1 represents in front elevation the wall fixture of the end seat plate, the seat rails being shown in section and a portion of the seat being illustrated in dotted lines. Fig. 2 represents a section on the line 2—2 of Fig. 1. Fig. 3 represents the wall fixture. Fig. 4 represents a section through the wall fixture on the line 4—4 of Fig. 3. Fig. 5 illustrates another form of wall plate embodying the invention in which slightly different means for securing the seat end plate thereto are employed. Fig. 6 represents an end elevation of the same. Fig. 7 represents a longitudinal section there through on the line 7—7 of Fig. 5. It will be understood that the seat, considered as a whole, will be provided with the usual standard or pedestal for supporting the aisle end thereof and with the other parts or elements with which such seats are usually provided, including the usual seat rails which are indicated at 10, 10, upon which the cushion-carrying rockers are mounted as indicated in dotted lines in Fig. 1.

The wall fixture, which constitutes the fixed end of the seat, is shown in Fig. 5 and is indicated as a whole by the numeral 11. It is made of sheet metal, such as sheet steel, and it has at its margin a flat, laterally projecting flange 12. By means of suitable dies, the plate may be formed with a dish-like concavo-convex portion or protuberance 13, which may be substantially oblong in front elevation and which projects outwardly or forwardly from the base flange 12. From the face of the convex portion 13 there is also pressed a concavo-
convex portion, protuberance or member 14, which is shown in the shape of a segment of a circle having a straight lower horizontal side wall and a curved or arcuate upper wall, and which protuberance forms, as will be described, a male member for interlocking with the end plate on the seat. While for some reasons, due to the construction of the car, it is desirable to form the fixture with the protuberance 14, yet it will be understood that this feature is not necessary as the protuberance 14 may alone be used and its side walls may be connected by bends directly with the lateral base flange 12. The object to be accomplished is the provision of an element on the fixture which may interlock with the end plate, and it is evident that the particular shape of the interlocking members may be varied as circumstances require.

The base flange of the wall fixture is provided with apertures, such as indicated at 15, through which rivets or other fastenings may be passed to attach the fixture to the wall of the car. In Fig. 2, the wall of the car is indicated at 16 and is represented as being made of matched boards, in which case screws will preferably be used to secure the wall fixture in place. If the wall of the car, however, were made of sheet steel, the end fixture would preferably be riveted directly thereto.

To the wall end of the seat, there is secured as a permanent component thereof an end plate which is indicated at 17. This plate is bolted, riveted or otherwise secured by suitable brackets to the seat rails 10, 10. It is provided with an out-turned flange 18 which in end view is approximately segmental so that it will accurately fit the protuberance or interlocking member 14 of the wall fixture. When the wall fixture is in place, it presents a convex interlocking member, whereas the end plate itself provides a concave interlocking member which will slip over and embrace, as it were, the convex member. The plate 17 and its wall or flange 18 which forms the seat back guide are preferably so formed as to afford stops or rests for the back of the seat; that is to say, it may be provided with portions 19, 19, projecting away from the ends of the member 14 and suitably curved to afford stops as indicated at 20, 21, for the back or the order that when the seat is installed in the car the end plate may be detachably secured to the wall fixture, fastening means must be provided. Such means may take the form illustrated in Figs. 1 to 4, or the form indicated in Figs. 5 to 7. That is to say, the end plate may be secured by screws to the wall fixture, in which event the latter is provided with metallic bars or strips 22 placed within the member 14 and secured therein by rivets or other fastenings 23, so that screws 24 may be passed directly through the end plate and through apertures in the wall fixture into the bars or strips 22 which are tapped to receive them; or else, if desired, the fixture may be provided with key-hole slots 25, as shown in Figs. 5 and 7, through the enlarged portions of which bolts and nuts may be passed, after which the bolts may be dropped into the narrower portions of the slots and the nuts tightened. Other fastenings means than those shown could be used if desired.

The construction which I have described, it will be seen, is applicable for a variety of forms of railway seats and provides a convenient means for accurately locating and securely attaching the end plate of the seat to the seat end. It is evident that, while the wall fixture is shown as having a protuberant member and the end plate as being concave, the wall fixture may have the concavity and the end plate be protuberant so as to fit thereon, without departing from the invention set forth in the claims. The element 14 of the wall fixture affords a substantially rigid continuous bearing for the end plate of the seat, interlocking therewith so as to prevent lost motion and accurately locate to the seat in its desired position. The formation of the end fixture with the concavo-convex protuberance or member stiffens the plate and greatly increases its rigidity. This rigidity is increased in the form shown in Fig. 3 by the employment of the bars or strips 22.

It is not essential that the base flange should extend entirely around the wall fixture, although it may do so as shown in Fig. 5. In Fig. 4, the base flange is omitted along the upper edge of the wall fixture, since in some cars, there is in the wall a flange projecting inwardly therefrom which makes such omission necessary.

While the seat end as herein shown is adapted to be rigidly and permanently affixed to the car, yet, broadly considered, the invention includes a construction in which such end may be formed or provided with an arm and located at the aisle end of the seat, as shown in my co-pending application in which such construction is specifically claimed.

Having thus explained the nature of my said invention and described a way of constructing and using the same, although without attempting to set forth all of the forms in which it may be made or all of the modes of its use, what I claim is:

1. Means for attaching the end of a seat comprising a wall fixture adapted to be affixed to the wall of a car, and consisting of a sheet metal plate formed with a base flange and with a concavo-convex protuberant member segmental in face view, a concave sheet metal end plate secured to said
seat and adapted to fit over said protuberant member, fasteners for securing said base flange to the car wall, and fasteners for detachably securing said end plate to said wall fixture.

2. A car seat having rails, an end consisting of a sheet metal plate provided with a protuberance, and end plate attached to said rails and having a marginal flange to in-close and fit over said protuberance, and means for fastening said end and said end plate together, the overlapping upper portions of said flange and protuberance forming a guide for the car seat back.

3. A car seat comprising rails, a sheet metal end plate attached thereto and having a marginal flange, a wall fixture adapted to be permanently attached to the car wall and consisting of a sheet metal plate formed with a base flange and a segmental protuberant member to extend into and interlock with said end plate, and means for detachably fastening said end plate and said wall fixture together, said marginal flange of said end plate being extended laterally beyond said protuberant member and being formed to provide stops for limiting the movement of the back of the seat.

In testimony whereof I have affixed my signature, in presence of two witnesses.

EDWARD COPELAND LANG.

Witnesses:
A. F. HORTON,
C. W. SIMMONS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."