No. 713,211. Patented Nov. 11, 1902.

# E. E. GOLD.

## MOUNTING FOR ELECTRIC HEATERS.

(Application filed Oct. 16, 1901.)

(No Model.)

FIG. 1.

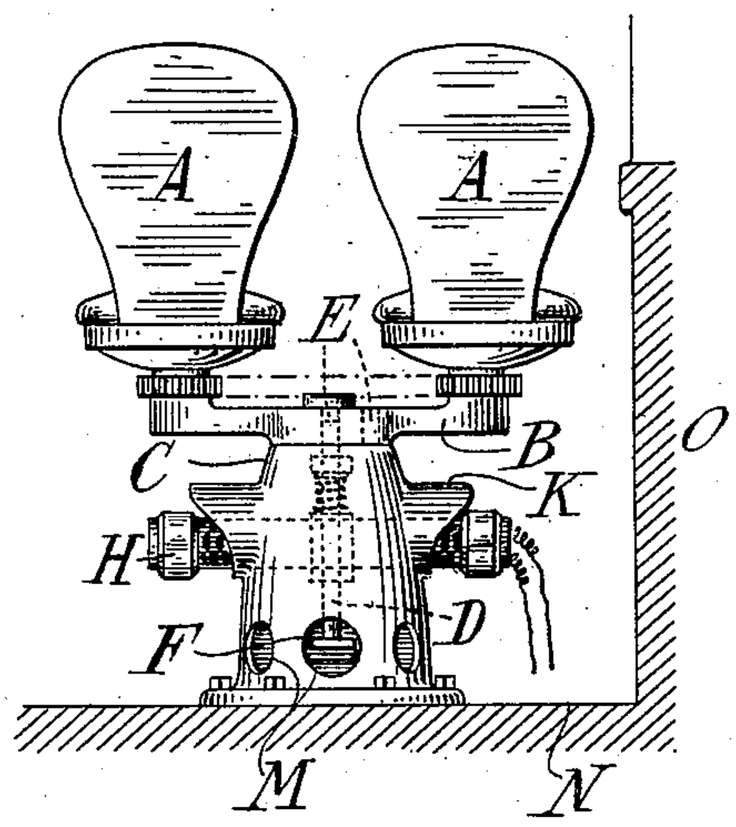



FIG. 2.

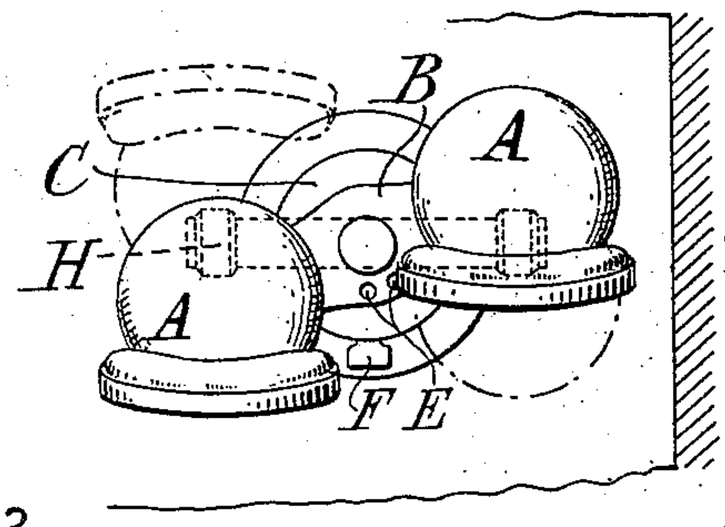



FIG. 3.

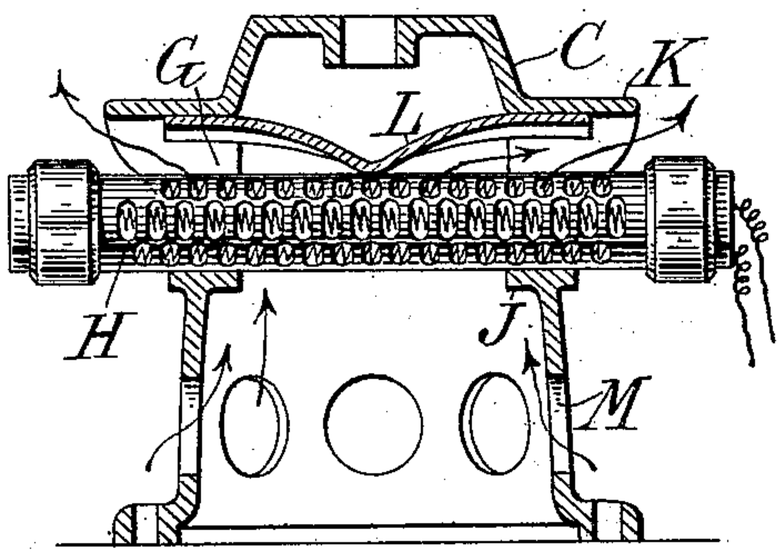
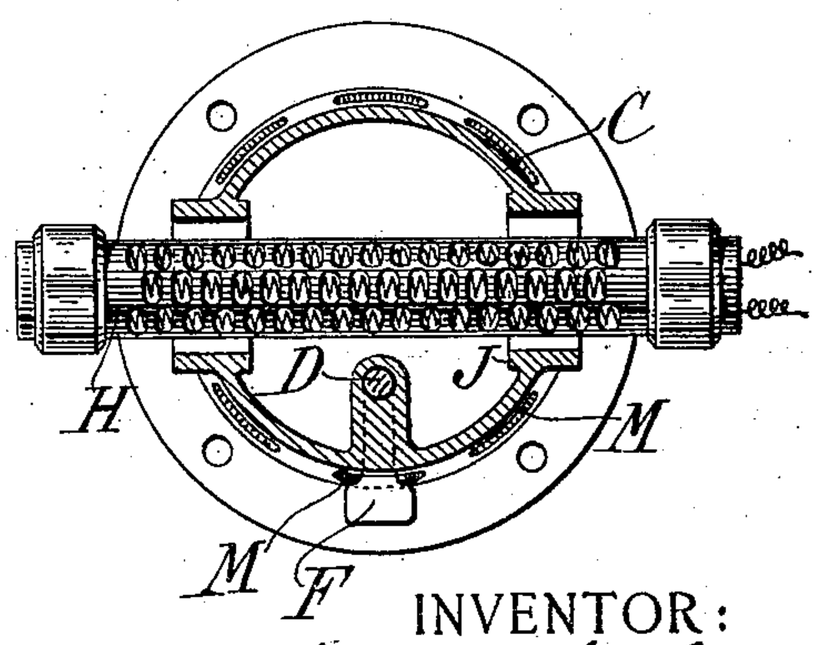



FIG. 4.




WITNESSES:
Rene' Bruine
Fred Whitey

INVENTOR:
Edward E. Gold,

By Attorneys,
Arthur C. Fraser & Co.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

EDWARD E. GOLD, OF NEW YORK, N. Y.

## MOUNTING FOR ELECTRIC HEATERS.

SPECIFICATION forming part of Letters Patent No. 713,211, dated November 11, 1902.

Application filed October 16, 1901. Serial No. 78,826. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD E. GOLD, a citizen of the United States, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Mountings for Electric Heaters, of which the following is a specification.

In railroad and street cars it is common to provide seats running continuously along the side of the car and also to provide seats extending across the car, each seat holding two persons, the seats in both cases being fixed in position. With seats of this type it is common to provide heaters below the seats, the arrangement of the supports and of the apertures for air circulation about the heater in the fixed framing being a comparatively simple matter. In some cars, however, movable seats are provided. The movements to which these seats are adapted are different in different types of cars now in use. In some the seats are arranged in pairs and are adapted to turn on individual pivots to face in opposite directions and are adapted also to be moved bodily, so that as the direction in which the seats face is changed the seat which is on the aisle may be always a little in the rear of the other. In other styles the seats are arranged in pairs and are capable not only of the movements described, but also of a third movement to swing both seats back against the wall of the car, so as to increase the width of the aisle and provide standing-room. The heating of electric cars carrying these movable seats has presented a more difficult problem than that involved in the heating of cars having stationary seats, and prior to my invention the heating arrangements adopted have been generally unsatisfactory. The most common arrangement has been to provide heaters extending along the wall of the car; but with this arrangement the greater part of the heat has been lost by ascending close to the wall and windows without passing through the center of the car, and also it has been necessary to very completely incase such heaters, because they are exposed to direct contact with the garments of passengers when the seats are arranged crosswise. Such an arrangement is both uncomfortable and dangerous. The passenger nearest the wall is overheated and the other passenger is not warmed enough.

According to my invention I provide in combination with a movable seat a means for supporting the heater beneath the seat, so that the hot air from the heater rises directly about each of the seats and the interior of the car is warmed as well as the sides, resulting in a saving in the amount of current necessary to keep the passengers warm and a uniform warmth for all passengers and resulting also in greater simplicity and cheapness in installing the heaters and greater accessibility for removal and repair with lessened liability of accidental contact with the garments of passengers. The supporting means or mounting for the heater may, for example, be in the form of a stationary pedestal, so as not only to support the heater, but also to support the movable seat in proper position above the heater.

My invention aims to provide also various other improvements, as specified in detail hereinafter.

Referring to the accompanying drawings, Figure 1 illustrates in elevation a double car-seat in common use to which my improvement is applied. Fig. 2 is a plan of Fig. 1. Fig. 3 is a vertical section of the pedestal or stationary support of Fig. 1. Fig. 4 is a horizontal section of the same at the point where the heater is supported.

According to my improvement the car-seat is movable to a plurality of positions, as explained, and preferably extends laterally beyond a main or fixed support, so that there is a free open space beneath the seat, and a heater also extends laterally beyond such fixed support and to a point beneath the seat, whereby the hot air therefrom escapes freely and rises directly about said seat. The heater may be fixed in position beneath the seat, as illustrated in the embodiments specifically described in this application, or it may be movable to follow the position of the seat, as specifically illustrated and described in my companion application filed herewith, Serial No. 78,827, filed October 16, 1901.

According to the specific embodiment disclosed in this application there is a common movable support provided for a plurality of

seats, the movable support being pivoted so as to oscillate on a fixed support attached to the floor of the car. The movable support may, in fact, rotate entirely about a vertical axis; but in actual use it merely oscillates back and forth between two fixed positions, in each of which it is locked. The heater is supported at a fixed point beneath said seats between the two positions to which the movable support is oscillated in use and so that in each of such positions it remains beneath the seats out of contact with the passengers and with the various advantages above referred to.

Referring now to the drawings, A are individual seats, which are individually pivoted upon a movable support, which is, preferably, a simple cross-bar B, which in turn is pivoted at its center to a fixed support, preferably in the form of a hollow pedestal C, fixed to the floor of the car. The relative sizes of the upper portion of the pedestal and the cross-bar are such that the ends of the latter extend laterally beyond the pedestal, so as to leave a free open space beneath the seats. The individual seats A are usually connected by a sprocket-chain, as indicated in dotted lines in Fig. 1, so that rotating one rotates the other, and the two always face in the same direction. Usually, also, means are provided for locking the movable support B in either of the two positions indicated in Fig. 2. This locking means may consist, as shown in dotted lines in Fig. 1, of a bolt D in the pedestal adapted to spring into either of two sockets E in the movable support B and adapted to be withdrawn by means of a pedal F for the purpose of swinging the seats from one position to the other. Commonly means are provided also for locking the individual seats against rotation on their pivots. This is one of the several types of movable seats which are in use and to which my invention is intended to be applied. The heater in this type of seat may be conveniently supported directly upon the fixed support or pedestal C and, as illustrated, is fixed in position thereon and projects at opposite sides laterally beyond the same and beneath the seats, whereby the hot air therefrom rises directly about the seats. The pedestal thus combines the two functions of seat-support and heater-support in a cheap and simple manner. For this purpose the pedestal is cast or otherwise formed with a cut-out portion forming apertures, as indicated at G, and which are preferably diametrically opposed to each other and of a size somewhat larger than the heater H which is to be used, so that the heater may be easily set in place therein. The heater when in place should lie midway between the two positions in which the movable support B may be locked, so as to be equally hidden in both cases.

A broad bearing may be secured for the heater H by providing a flange J around the aperture. The heater may of course be made so short that its ends shall be just flush with the outer face of the pedestal, or it may be even shorter, if desired; but I prefer to extend the ends of the heater slightly out of the pedestal, so that the hot air shall rise directly about the seats, as explained, and to prevent accidental contact with the passengers by the arrangement of guards, which are preferably formed as integral flanges K, extending outward from the pedestal and over and partially around the extending ends of the heater. These guards serve also the purpose of conducting the heat a considerable distance outward from the center of the pedestal to approximately the centers of the seats before permitting it to rise, and thus improve the distribution of it. The heater will ordinarily be held quite firmly in place by its weight; but I prefer to provide a means for holding it in place in such a way that it can be easily inserted and withdrawn. Such a means is shown in the spring-plate L, Fig. 3, which bears at its center on the top of the heater, so as to hold it down in the apertures G, and which bears at its ends in the upper edges of said apertures.

An important feature of my improved mounting for heaters is the facility which it provides for establishing a circulation of air of considerable volume and in exactly the desired direction. In the specific mounting shown, for example, apertures are provided in the stationary support both below and above the supporting means for the heater, the lower or inlet apertures being indicated at M and the outlet apertures being the upper and side portions of the apertures G, in the lower part of which the heater rests. By means of this arrangement the air is drawn in at the lowest point of the car from the cold and often damp floor and is passed directly through and about the heater, having its exit at a point substantially under the center of each of the individual seats, so that it rises all around the edges of such seats, coming most immediately and directly into contact with the bodies of the passengers. Various modifications or rearrangements of these air-passages may be provided without sacrificing the features of utility present in the particular arrangement shown. Some of these modifications are specifically illustrated in my companion application above referred to.

The functions of the individual parts of the device having been indicated, the operation of the device as a whole will be clear. Supposing the seats to be originally placed as shown in full lines in Fig. 2, then when it is desired to reverse the direction of the car the operator depresses the pedal F and swings the movable support B, carrying the two individual seats, to the reverse position, in which position he locks it by releasing the pedal F. At the same time he reverses the individual seats, as indicated in dotted lines. The heater at all times remains in the posi-

tion shown in dotted lines in Fig. 2, so as to be under the seats in each of the positions which they take. When it is desired to remove the heaters, they are merely withdrawn lengthwise through the apertures G, the plate L providing only a frictional resistance to accidental movement and not a positive lock against intentional movement.

Though I have described with great particularity of detail a specific embodiment of my invention, yet I am not to be understood as limiting myself to the specific form shown and described. Various modifications of the elements of the device and various rearrangements of the parts and combinations described are possible to those skilled in the art without sacrificing the advantages of my invention and without departing from the spirit thereof. For example, though I have indicated the heater H as of a form invented by me and now in general use, yet it is to be understood that various other types and shapes of heater may be equally within my invention, and though I have indicated the seats as mounted upon the floor N of a car adjacent to the wall O thereof, which is the usual arrangement, yet it will be understood that they may be placed in any desired position in the car, or that they may, indeed, be used in other structures than in cars, without departure from my invention, and though I have indicated the usual arrangement comprising a pair of individual seats, yet it will be understood that the invention applies equally to single small seats or single seats of large size capable of seating more than one person or to any other number than two individual seats, and that, in fact, my invention is not limited by the number, size, or arrangement of the seat or seats, except where specific arrangements thereof may be specified in the claims hereinafter.

What I claim is—

1. The combination with an oscillating car-seat, of a fixed support therefor, said seat extending laterally beyond said fixed support so that there is a free open space beneath said seat, and a heater supported by said fixed support and extending laterally beyond the same and beneath said seat whereby the hot air therefrom rises directly about said seat.

2. The combination with a pair of car-seats, of a movable support carrying one of said seats at each end, a pedestal on which said movable support is mounted to oscillate, the ends of said movable support extending laterally beyond said pedestal so that there is a free open space beneath said seats, and a heater supported by said pedestal and projecting at opposite sides laterally beyond the same and beneath said seats whereby the hot air therefrom rises directly about said seats.

3. The combination with an oscillating car-seat, of a fixed support therefor, said seat extending laterally beyond said fixed support so that there is a free open space beneath said seat, a heater supported directly on said fixed support and extending laterally beyond the same and beneath said seat whereby the hot air therefrom rises directly about said seat, and a guard extending outward from said fixed support and over the extending portion of said heater.

4. The combination with a movable car-seat, of a pedestal therefor, a portion of said pedestal being cut out to receive a heater, and guards extending outward from the pedestal over such cut-out points.

5. The combination with a movable car-seat, of a hollow pedestal therefor, means for supporting a heater therein, and apertures in said pedestal below and above said supporting means for maintaining a circulation of air about a heater when so supported.

6. The combination with a movable car-seat, of a hollow pedestal therefor, apertures in its walls, a heater supported in said apertures and smaller than said apertures so as to leave a space about said heater for the exit of hot air, and apertures below said heater for admitting cold air thereto.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

EDWARD E. GOLD.

Witnesses:

DOMINGO A. USINA,

FRED WHITE.