(No Model.)

L. S. MANNING.

CAR STEP.

No. 515,599. Patented Feb. 27, 1894.

Fig. 1

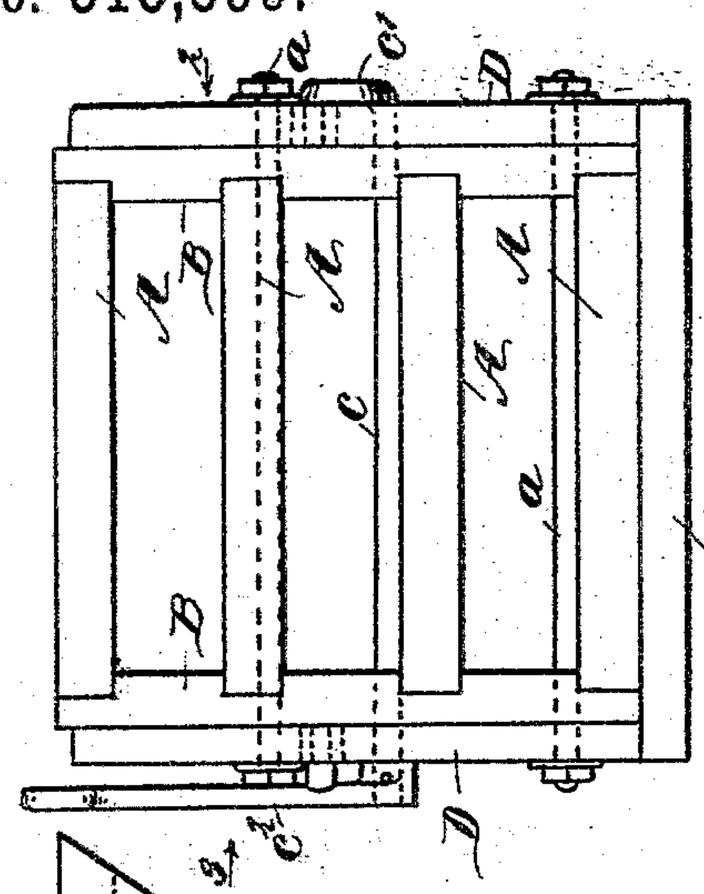


Fig. 4

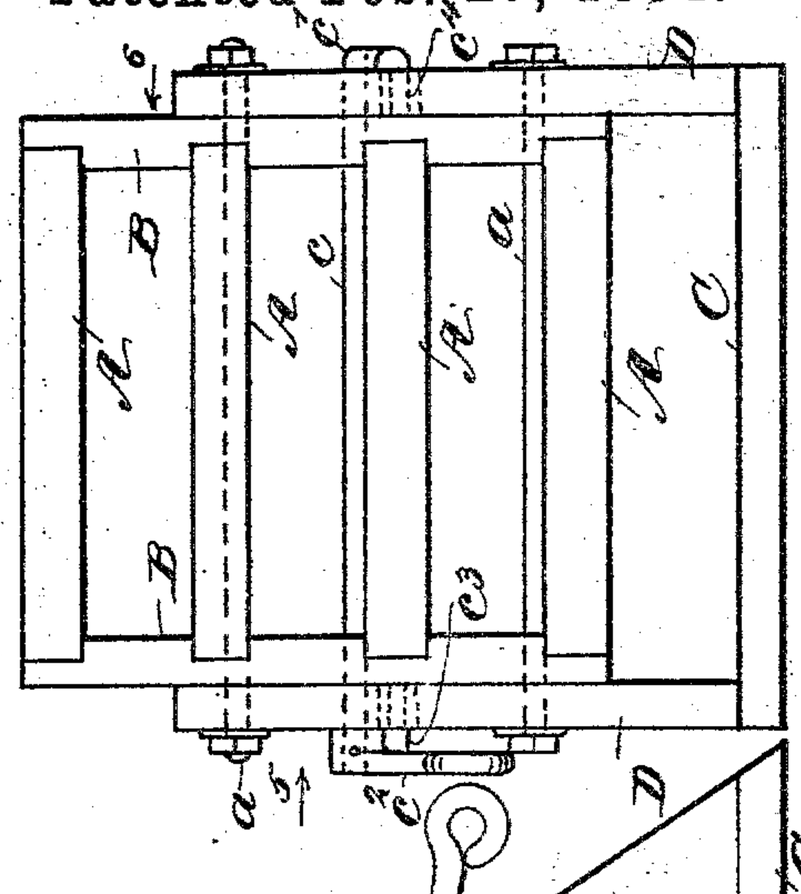


Fig. 2

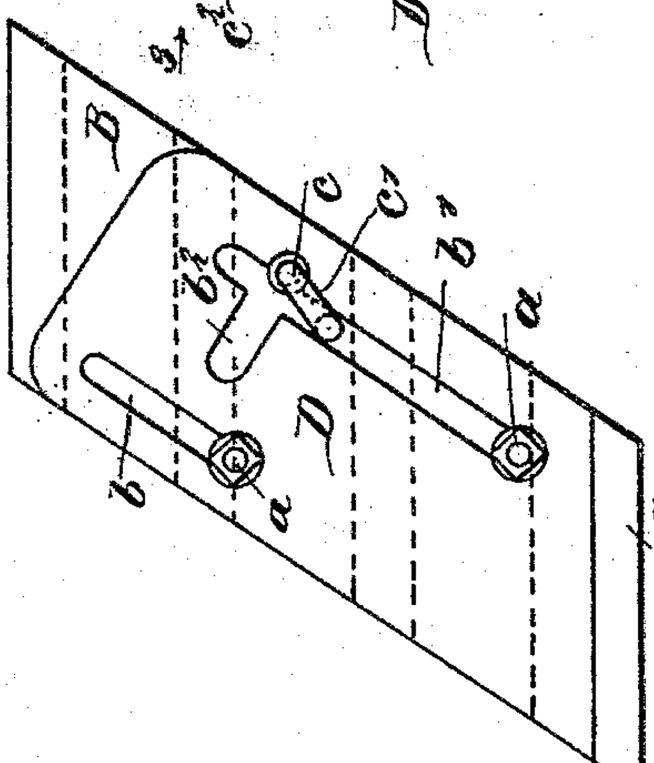


Fig. 5

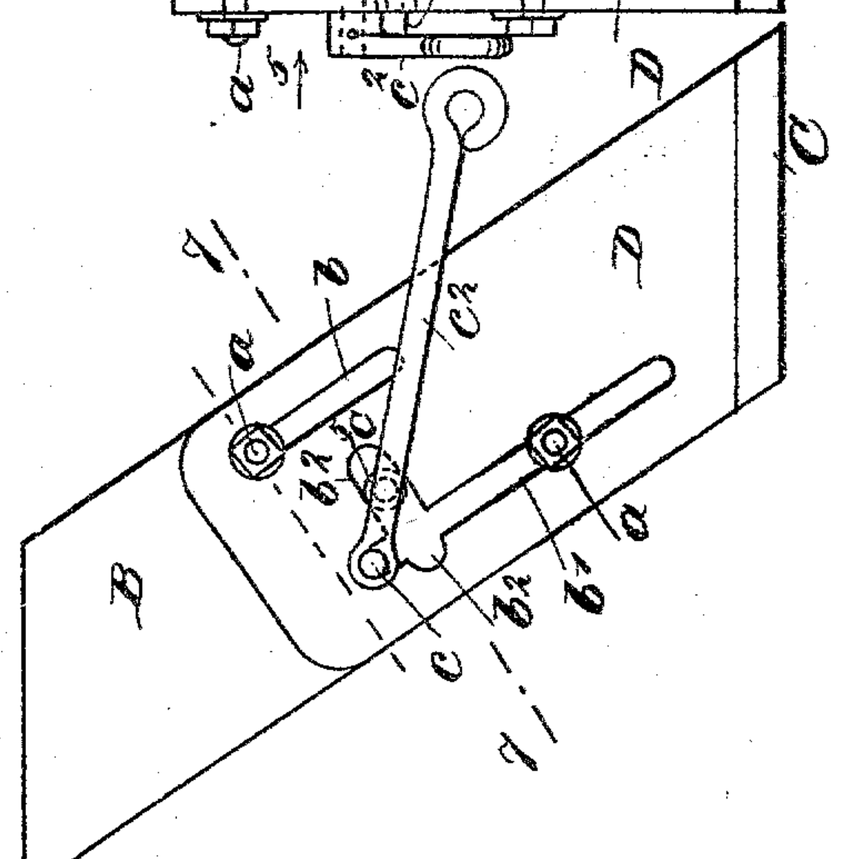


Fig. 3

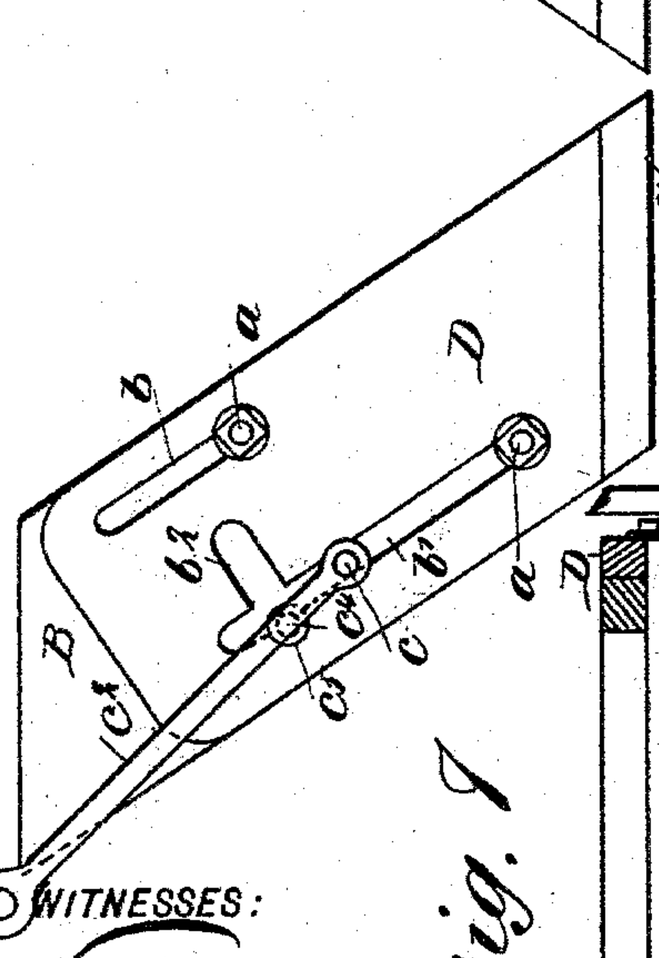


Fig. 6

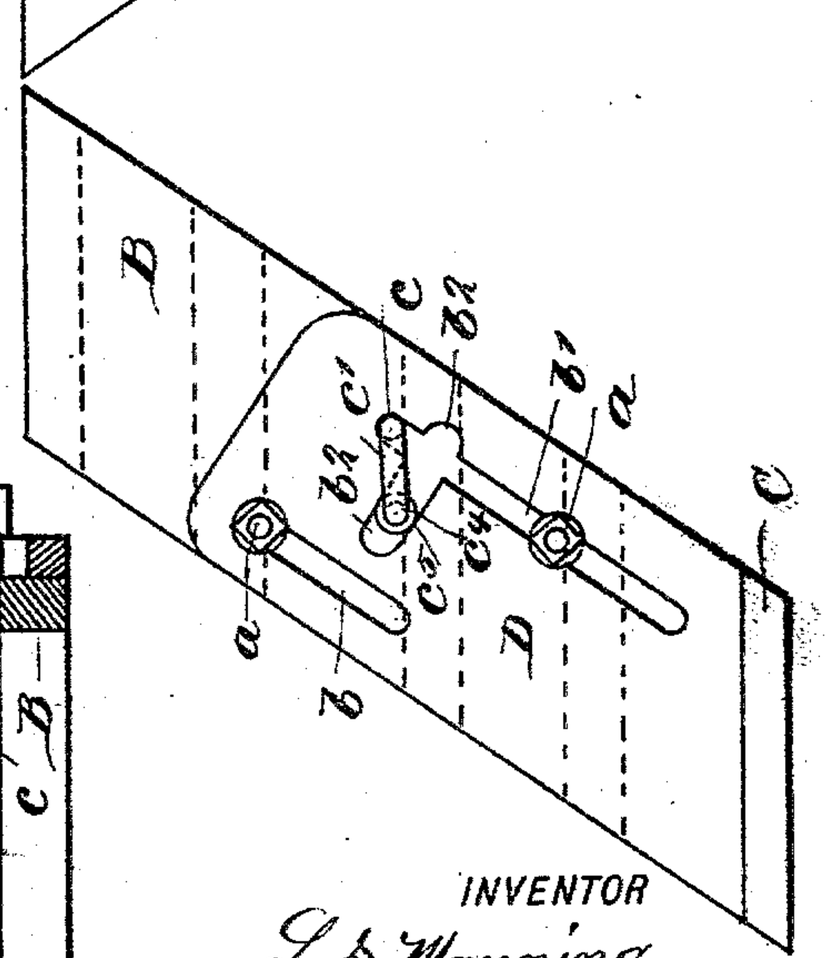
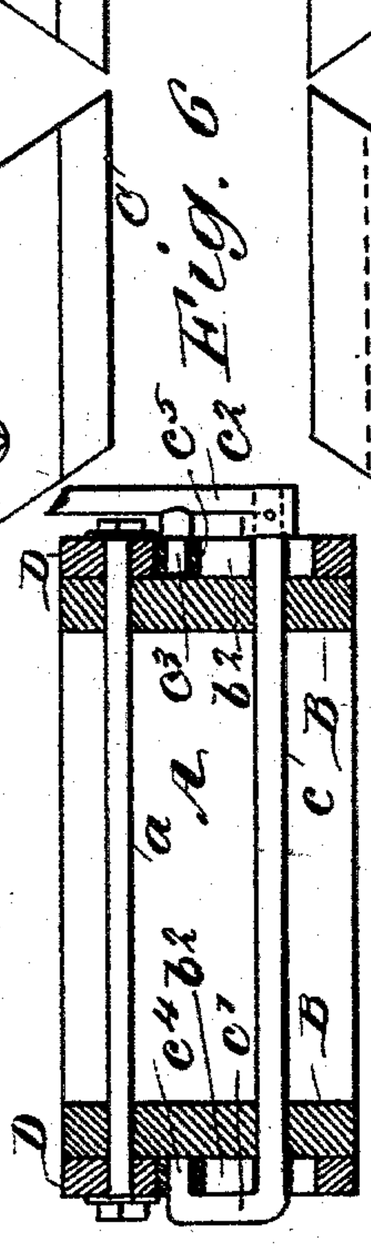


Fig. 7



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LEMUEL SARGEANT MANNING, OF CHICAGO, ILLINOIS.

CAR-STEP.

SPECIFICATION forming part of Letters Patent No. 515,599, dated February 27, 1894.

Application filed July 3, 1893. Serial No. 479,476. (No model.)

To all whom it may concern:

Be it known that I, LEMUEL SARGEANT MANNING, of Chicago, in the county of Cook and State of Illinois, have invented a new and Improved Car-Step, of which the following is a full, clear, and exact description.

This invention relates to an improvement in steps for the platforms of passenger cars on railroads, the object being to provide car steps with an extensible step or tread-piece, and means for locking said step in position, to facilitate access to and exit from the car platform, conducing to the convenience and safety of passengers.

To this end my invention consists in the construction and combination of parts, as is hereinafter described and claimed.

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

Figure 1 is a front view of the improved steps, detached from a car, showing the supplementary step in elevated adjustment. Fig. 2 is a side view opposite the arrow 2 in Fig. 1. Fig. 3 is a side view opposite the arrow 3 in Fig. 1. Fig. 4 is a front view of the steps with the extensible step in lowered adjustment. Fig. 5 is a side view opposite the arrow 5 in Fig. 4, showing the position of parts when the supplementary step is in lowered adjustment. Fig. 6 is a side view of parts adjusted to lower the step, taken opposite the arrow 6 in Fig. 4; and Fig. 7 is a transverse sectional view on the line 7—7 in Fig. 5.

The tier of fixed steps or tread pieces A, are secured by their ends to the side plates B, in any suitable manner, and are spaced apart a proper distance to adapt them for their use. The side plates B are designed to form stable supports for the tread pieces A, and serve as hangers by which said steps are projected downwardly and outwardly from the car platform (not shown), it being understood that a set of steps is provided for each side of the latter as usual.

The tiers of steps A which have been briefly described, are of an ordinary construction, and may be made of wood or metal. As usually provided, the set of steps at each side of a car platform comprises a number that will suit an ordinary distance intervening the platform and ground. It is frequently the case however, that there are points of stoppage for cars on a railroad, where the height of the platforms from the ground is in excess of the regular distance for which the fixed steps are provided, which if not compensated for, occasions inconvenience and some danger to persons using the steps to ascend to or descend from the platforms.

The device which embodies the novel features of invention, and that is shown in connection with the ordinary car steps, consists substantially, of a supplementary step C, that is adjustably secured to the side plates B by means of the hanger plates D, that are exterior to and loosely embrace the latter, so that the step may be elevated or depressed as occasion may require, said hanger plates having their lower ends affixed to the ends of the step C by any suitable means.

The preferred connecting devices for suspending and adjusting the supplementary step C, comprise two transverse stay bolts *a*, that are tightly inserted in the side plates B, one near the front edges of the side plates and below or through the second tread piece from the upper end of the steps, the other bolt penetrating said plates near their rear edges and directly above the lower fixed tread piece of the series. The end portions of the stay bolts *a* which project outside of the side plates B, are loosely inserted through the slots *b*, *b'*, that are longitudinally formed in the hanger plates D, which slots are located oppositely in pairs and are made parallel with each other and also with the front and rear edges of the plates they are formed in, nuts and washers being placed on the ends of the bolts to secure them from displacement.

A rock shaft *c*, is provided, that has a short arm *c'*, formed on or secured to one end, projecting laterally at a right angle thereto, another longer arm c^2, being removably secured to the opposite end of the rock shaft, both arms extending in the same direction. The rock shaft projects far enough through the slots *b'*, which are produced in the hanger plates near their rear edges, so that the arms *c'*, c^2, may be affixed upon its projected ends and permitted to swing near the outer sides of the hanger plates. The slots *b'*, are about

double the length of the parallel slots b, the latter being formed near the top ends of the hanger plates and close to their front edges. Near the upper terminals of the longitudinal slots b', a transverse slot b^2 is formed in each hanger plate, crossing the longitudinal slot, so as to be located partly on each side of the same, as indicated in Figs. 5 and 6. At a proper point to insure correct action, a stud c^3 is projected from the arm c^2, on its inner side, so as to enter the cross slot b^2 it is opposite, and on said stud an anti-friction thimble c^5, is loosely secured, the diameter of which is proportioned to loosely fit the slots b', b^2. On the arm c', a stud c^4, is projected toward the adjacent slot b', having an equal distance from the shaft c as the stud c^3, and upon said stud an anti-friction thimble similar to the thimble c^5, is loosely mounted. The arm c^2, is given a sufficient length to adapt it for service as a lever with which to rock the shaft c. It will be seen that when the arm or lever c^2, is upwardly swung so that it assumes the position indicated in Figs. 1 and 3, the stud and anti-friction thimble on it will be located in the rearward extension of the cross slot b^2, and lock the supplementary step C, in close contact with the lower tread piece A, said adjustment of the step being produced by the traverse of the thimbles and their supporting studs in the cross slots b^2. When it is desired to utilize the supplementary step C, the arm c^2 is swung downwardly and forwardly into the position indicated in Figs. 4 and 5, which will cause the supplementary step to be downwardly projected a correct distance for service, the impinge of the rock shaft c, on the upper terminals of the slots b', determining the degree of depression given to the step, the transverse bolt a, that occupies the front slots b, striking upon the upper end walls of said slots at the same time the rock shaft engages the top walls of the rear slots, so that the step is supported near its front and rear edges and rendered stable when lowered for service.

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

1. The combination with car steps, of hanger plates vertically movable thereon carrying an auxiliary step, said hangers being provided with longitudinal slots having transverse branches, a rock shaft having arms extending into the transverse branches, and means to move the rock shaft, substantially as described.

2. The combination, with parallel side plates and a series of tread-pieces held between said plates, of slotted hanger plates movable on said side plates, two bolts passing through the side plates and through parallel longitudinal slots in the hanger plates, a step held at the lower ends of the hanger plates, and means for sliding the hanger plates on the side plates, substantially as described.

3. The combination, with parallel side plates, and a series of tread-pieces held between said plates, of hanger plates each hanger plate having two parallel slits opposite each other in pairs embracing said side plates, bolts passing through the side plates and hanger plates, a step held at the lower ends of the hanger plates, and a transverse rock shaft journaled in said side plates through two opposite longitudinal slots, and having arms loosely engaging cross slots in the hanger plates, substantially as described.

4. The combination, with parallel side plates, and a series of tread-pieces held between the side plates, of longitudinally slotted hanger plates movable on said side plates, a step held at the lower ends of the hanger plates, transverse bolts passing through the side plates and longitudinal slots in the hanger plates, a rock shaft slidable in rear longitudinal slots of the hanger plates, arms on the rock shaft, studs on the arms, and anti-friction rollers on the studs, engaging cross slots in the hanger plates, and adapted to lock the movable step in elevated adjustment and limit its depression, substantially as described.

LEMUEL SARGEANT MANNING.

Witnesses:
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