

No. 619,800.

Patented Feb. 21, 1899.

H. E. SPINK.

CAR STEP.

(Application filed Nov. 5, 1898.)

(No Model.)

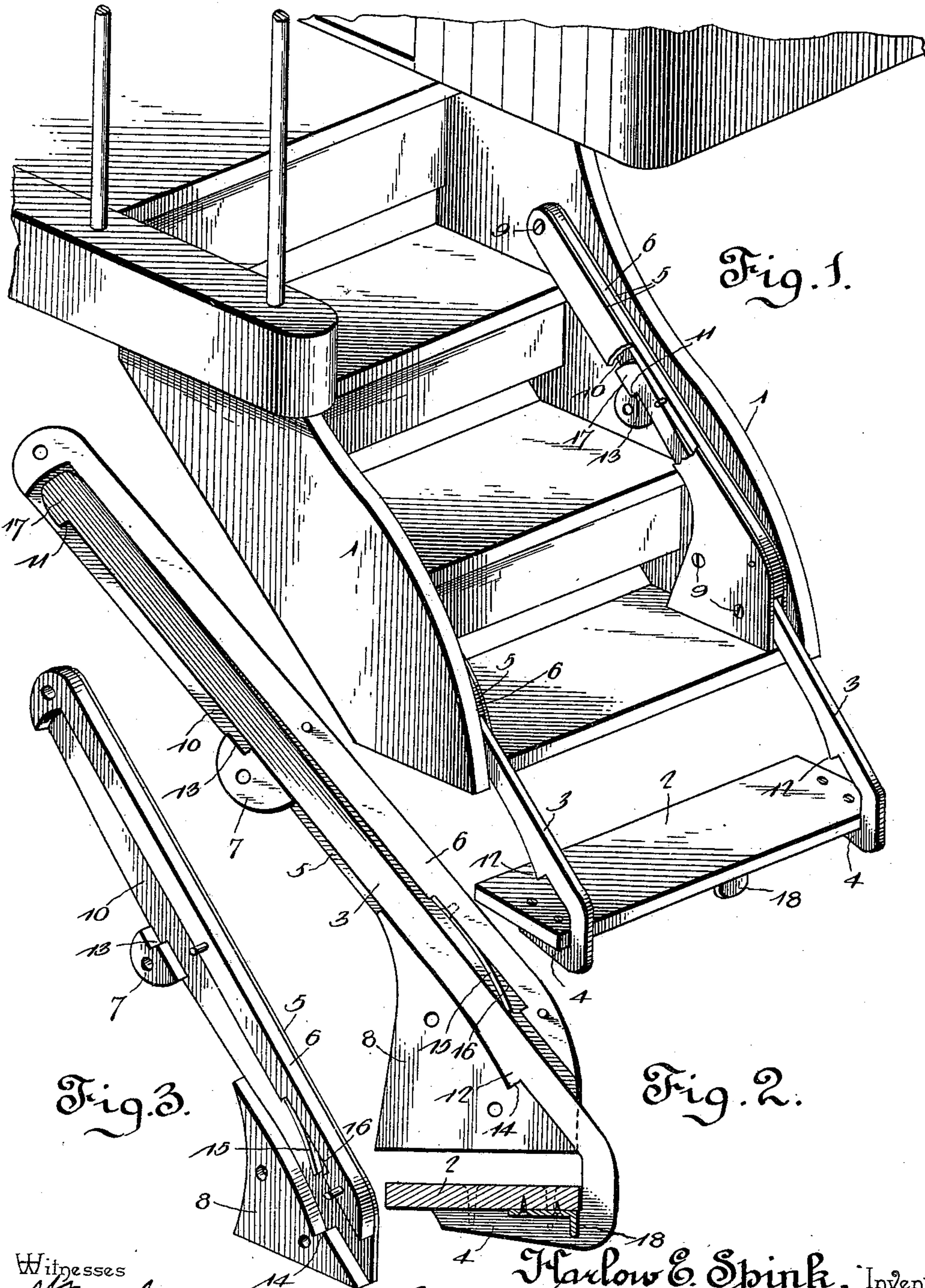


Fig. 3.

Fig. 2.

Witnesses

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# UNITED STATES PATENT OFFICE.

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## CAR-STEP.

SPECIFICATION forming part of Letters Patent No. 619,800, dated February 21, 1899.

Application filed November 5, 1898. Serial No. 695,582. (No model.)

*To all whom it may concern:*

Be it known that I, HARLOW E. SPINK, a citizen of the United States, residing at Oswego, in the county of Oswego and State of New York, have invented a new and useful Car-Step, of which the following is a specification.

This invention relates to steps for railway-coaches which are provided with a movable step at the bottom adapted to be let down for use at stations and elevated out of the way of obstructions while the train is in motion.

The object of the present invention is to improve the mounting of the movable step, whereby it may be held in its elevated and in its extended position, all of which will be hereinafter more fully described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view of a car-step having the improvements applied thereto and the movable step let down for use, a portion of the casing being broken away. Fig. 2 is an elevation of the step-carrying arm seated within the casing, one side thereof being removed. Fig. 3 is a detail perspective view of the casing with one side removed.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

Referring to the accompanying drawings, 1 designates the sides of the steps, and 2 the movable or extensible bottom step. This step is carried by arms 3, which are angled at their lower ends, with the angle-arms 4 extending back under the steps, and the lower step 2 is secured across the top of these arms, as shown. A casing consisting of two sides 5 and filling-pieces 6 and 8 is secured to each side of the steps, preferably to their inner faces, as shown, by means of suitable bolts 9. The filling-pieces are disposed as shown to provide a longitudinal groove 10. Each of these step-carrying arms 3 is mounted in its respective groove and is provided with a stop-shoulder 11 on its under edge near its upper end and a similar stop-shoulder 12 near its lower end. The groove 10 is provided with recesses or notches 13 and 14 in its lower edge in which the stop-shoulders of the arm 3 are adapted to engage. The intermediate notch 13 is pref-

erably formed about midway of the ends of the groove 10 to give the step the proper extension. A spring 15 is mounted in a suitable recess 16, just above the lower notch 14, to hold therein the stop-shoulder of the arm which is seated in the notch.

As shown in Fig. 1, the upper stop-shoulder 11 is seated in the intermediate notch 13, holding the movable step in its extended position. When drawn up out of the way, as indicated in Fig. 2, the lower stop-shoulder 12 is seated in the notch 14 and is held therein by the spring 15. It will be noted that the head 17, formed at the upper end of the arm 3, is wider than the groove below the notch 13 and therefore cannot pass said notch, and thus the step is always held at the proper extension. The portion of the arm 3 at the stop 12 is narrower than the groove to permit of the shoulder being raised out of its notch to extend the step, and therefore it is necessary to employ a tension against the arm at this point to prevent the stop-shoulder from being accidentally jolted out of the notch by the movement of the car. A thumb-piece 18 is provided underneath the movable step, whereby said step may be moved outward to disengage the lower stop 12 from its notch 14.

The present construction and arrangement provide a substantial and neat mounting of the extensible step, all of the operating parts of which are inclosed and protected, and no part thereof is in the way of passengers or situated so as to interfere with the coupling or handling of the cars, and the movable step can be let down for use and elevated out of the way and held there in an easy and effective manner.

Changes in the form, proportion, and minor details may be made without departing from the spirit and scope or sacrificing any of the advantages of the present device, and therefore I do not wish to be understood as limiting myself to the precise construction and arrangement as herein described.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. The combination with the stationary car-steps, of an extensible step carried by sliding arms, and casings slidably receiving the re-



spective arms, the latter having an interlocking engagement with the casings in both the normal and the extended positions of the movable step, and capable of a lateral movement, whereby the interlocking engagement of the arms with the casing may be disconnected, substantially as and for the purpose set forth.

2. The combination with the stationary car-steps, of an extensible step carried by sliding arms, having stop-shoulders, casings for the arms, each casing having a longitudinal groove provided with notches, the arms being mounted in the grooves of the casings, one of the stop-shoulders adapted to engage its respective notch in either position of the extensible step, and the arms being capable of a lateral movement, whereby the stop-shoulders may be disengaged from the notches, substantially as shown and described.

3. The combination with the stationary car-steps, of an extensible step carried by sliding arms, each arm having a stop-shoulder near its upper end and another stop-shoulder near its lower end, and casings for the respective arms, each casing being provided with a longitudinal groove, which has a notch formed therein near the lower end thereof and another notch formed intermediate the ends of the groove, the arms being slidably mounted in the grooves of the respective casings, the respective upper and lower stop-shoulders of the arms being adapted to engage the respective intermediate and lower notches of the grooves in the normal and extended positions respectively of the movable step, and the arms being capable of a lateral movement whereby the shoulders may be disengaged from the notches, substantially as specified.

4. The combination with the stationary car-steps, of an extensible step carried by sliding arms having upper and lower stop-shoulders, a casing for each arm provided with a longitudinal groove slidably receiving the arms,

and provided with an intermediate notch and a lower notch, and a spring mounted in the groove opposite the lower notch and adapted to bear against the arm and hold its lower stop-shoulder in the lower notch of the groove, substantially as shown and described.

5. The combination with the stationary car-steps, of an extensible step carried by sliding arms, each of said arms having an upper stop-shoulder forming a head, and a lower stop-shoulder, casings for the arms, each casing having a longitudinal groove provided with an intermediate notch and a lower notch, the groove below the intermediate notch being wider than the arm, and a spring arranged within the groove opposite the lower notch and adapted to bear against the arm and hold its lower stop-shoulder in the lower notch, whereby said stop-shoulder may be disengaged from its notch by an outward movement of the extensible step, substantially as shown and described.

6. The combination with the stationary car-steps, of an extensible step, arms carrying the extensible step, casings or housings receiving the arms, and each of the latter having an engagement with its respective housing to support the step in either an elevated or extended position, and springs carried by the housings and engaging the arms, whereby the latter are held in their elevated position against accidental displacement and may be disengaged from the housing, to extend the step, by an outward movement of the latter, substantially as shown and described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

HARLOW E. SPINK.

Witnesses:

JOHN TIEMAN,

HARRY B. PLACE.