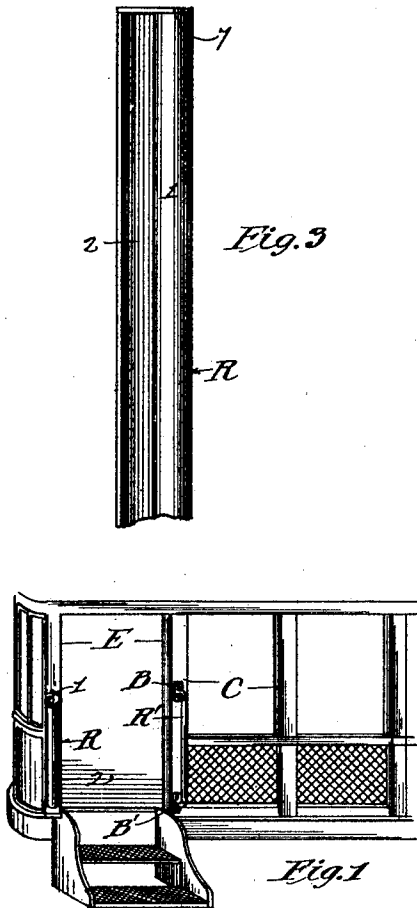
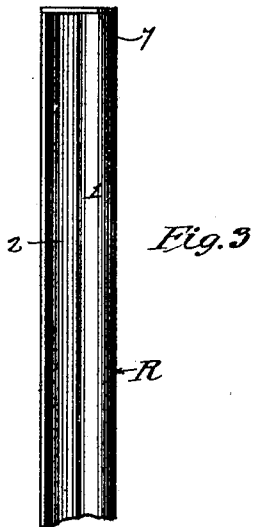
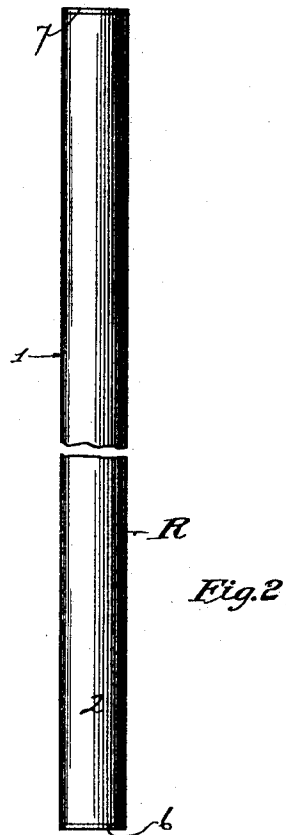
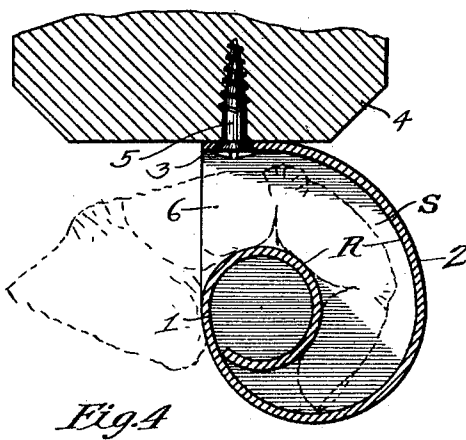
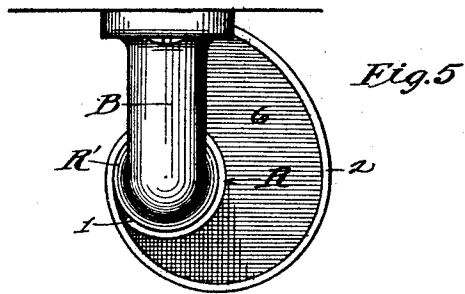


T. DE GRAFF.
SAFETY HAND RAIL FOR STREET CARS AND THE LIKE.
APPLICATION FILED APR. 9, 1920.

1,367,538.

Patented Feb. 8, 1921.



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UNITED STATES PATENT OFFICE.

TRACY DE GRAFF, OF PASADENA, CALIFORNIA.

SAFETY HAND-RAIL FOR STREET-CARS AND THE LIKE.

1,367,538.

Specification of Letters Patent.

Patented Feb. 8, 1921.

Application filed April 9, 1920. Serial No. 373,019.

To all whom it may concern:

Be it known that I, TRACY DE GRAFF, a citizen of the United States, and a resident of Pasadena, in the county of Los Angeles, State of California, have invented new and useful Improvements in Safety Hand-Rails for Street-Cars and the like, of which the following is a specification.

This invention relates to and has for a main object the provision of safety devices used either in connection with or independently of the usual hand rails provided on street and inter-urban cars, in order that the tendency on the part of inexperienced persons, and particularly women, to alight from such cars backward, *i. e.* with their face toward the rear end of the car instead of the reverse—the proper way—may be overcome by the elimination of any means or devices whatever whereby a grasp or hand hold may be obtained on the car during a backward egress therefrom, thus preventing as far as possible the great number of accidents occurring from the misuse of the hand rails now provided and used.

A further object is to provide a hand rail having characteristics of design which adapt it for use readily in a proper manner, especially when entering a car, and preventing the use thereof to persons on and alighting from the car. Detailed objects, special features and a preferred arrangement and manner of use will be clearly and specifically outlined in the following description of my device, reference being had to the accompanying drawing of my invention, in which:

Figure 1 is a fragmentary perspective view of a street car having my improved hand rail attached thereto for use.

Fig. 2 is an enlarged elevation thereof;

Fig. 3 is an elevation of the same at right angles to Fig. 2.

Fig. 4 is a transverse section on a scale of about full size, the form shown being for use independently of the usual hand rails;

Fig. 5 is a top plan view of a form of the same device adapted for use in connection with one of the usual type of hand rails.

As shown clearly in Fig. 4, my improved device consists of a main vertical member R which constitutes the hand rail and which has a tube like portion 1 provided at one edge of the single piece of material forming the body of the device and the major portion

thereof is bent outwardly and thence inwardly, as at 2, at a convenient distance from and preferably concentric with the portion 1, thus providing ample space between the portions 1 and 2 for the insertion of the hand in the manner shown by broken lines in Fig. 4, but not otherwise.

The inner edge has a flattened portion 3 adapted to rest against and to be secured rigidly to the stanchion 4 or the side of the street car C by means of a plurality of screws, or bolts 5, care being taken that the heads of the attaching screws or bolts do not extend outwardly sufficiently to scratch the hands of the passengers or limit the space between the portions 1 and 2.

The bottom particularly, and the top if deemed necessary, may be closed by means of flat end portions 6 and 7, respectively, which should preferably be brazed or welded to the ends of the portions 1 and 2. The provision of a bottom member 6, it will be readily apparent, prevents the insertion of the hand upwardly into the space S.

Where the usual form of hand rails are used in connection with my improvement the portion 1 may be formed around, or the usual rail R' inserted in said portion and carried on the brackets B and B' in the usual manner.

It will be obvious that the hand of the passengers may be inserted into the space S of my improved rail only from the outside of the car as the passengers are entering the car, the space S being closed on the right hand side adjacent to the alighting passengers while open on the opposite side for use by the entering passengers. This being the case, and there being no other devices or projections which may be grasped by the hand, the passengers must of necessity turn around facing the front end of the car, in which position the other rail R' at the front side of the exit E will be available. Thus the passengers will be compelled to face forward as they emerge, if they desire or need support as they usually do.

My improved hand rail may be made, as shown, from a single piece of flat sheet metal of ample strength, bent into the form shown and described and attached to the car by suitable means, but I do not limit myself to the exact form of device shown and described, as I conceive it to be possible

to change or modify the structure thereof without enlarging the scope beyond that set forth in the appended claims, or departing from the spirit of my invention.

5 What I claim is:

1. A hand rail for street cars and the like, comprising a vertical rail portion and integral therewith, a curved guard portion spaced therefrom and affording access to
10 the space therebetween only in one direction.

2. A hand rail for street cars and the like comprising a curved rail portion and integral therewith, a curved guard portion
15 of like length affording hand space therebetween accessible only in one direction.

3. A hand rail for street cars and the like comprising a circular sheet metal rail portion, and a curved guard portion spaced
20 therefrom and integral therewith and affording access to the space therebetween

only in one direction, and members for closing the ends of said space.

4. A hand rail for street cars and the like comprising a circular rail portion, and a
25 curved guard portion spaced therefrom and integral therewith for affording access to said space only in one direction, and end closing means for said space.

5. A hand rail for street cars and the like
30 comprising a circular rail portion and a curved guard portion integral therewith and spaced therefrom, said guard portion being extended for a substantial distance concentrically around said rail portion and
35 affording access to the space therebetween in only one direction, and means for attaching said rail to a car for use.

TRACY DE GRAFF.

Witnesses:

CHARLES C. MONTGOMERY,
E. M. DESSIEUX.