

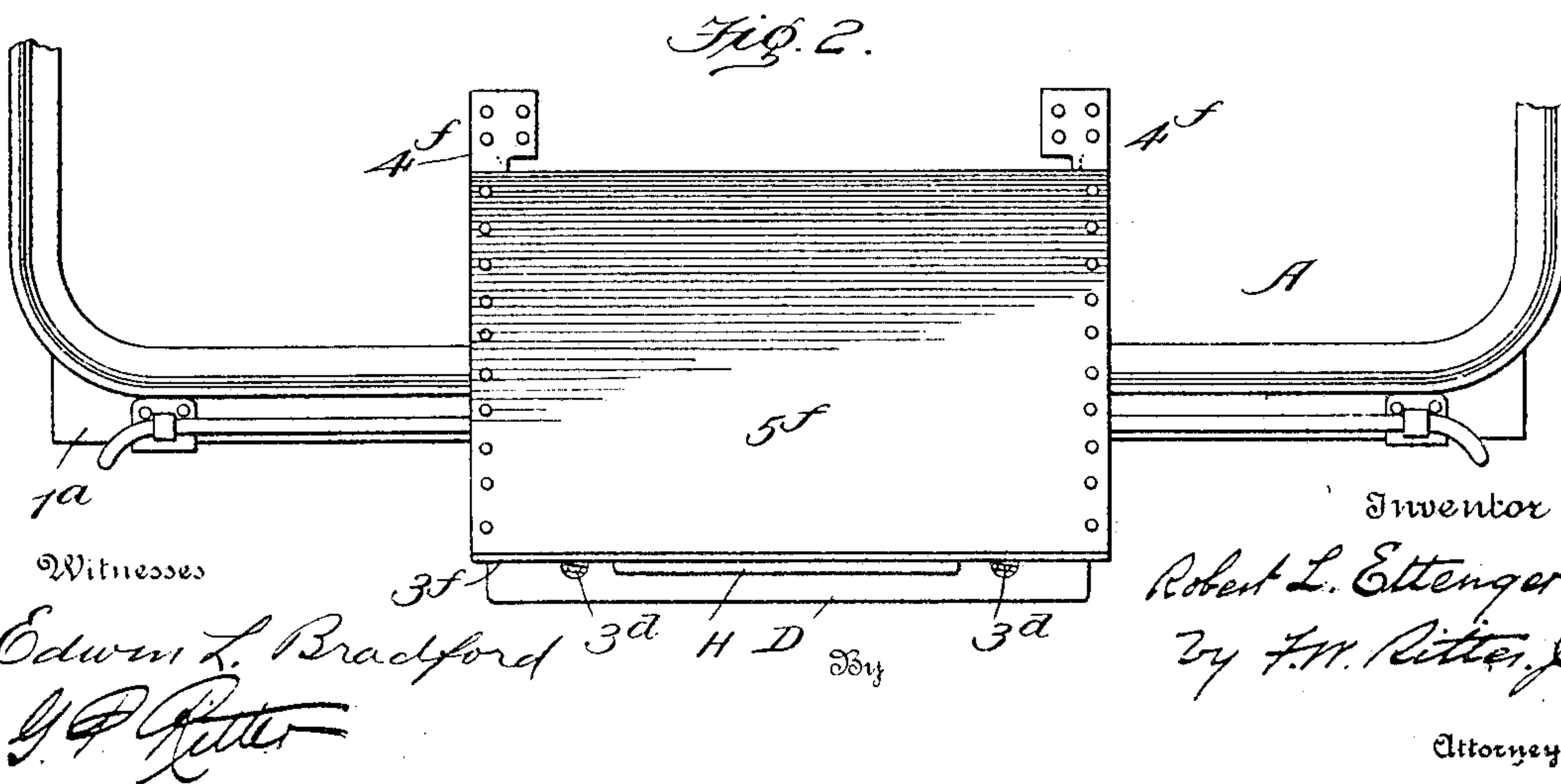
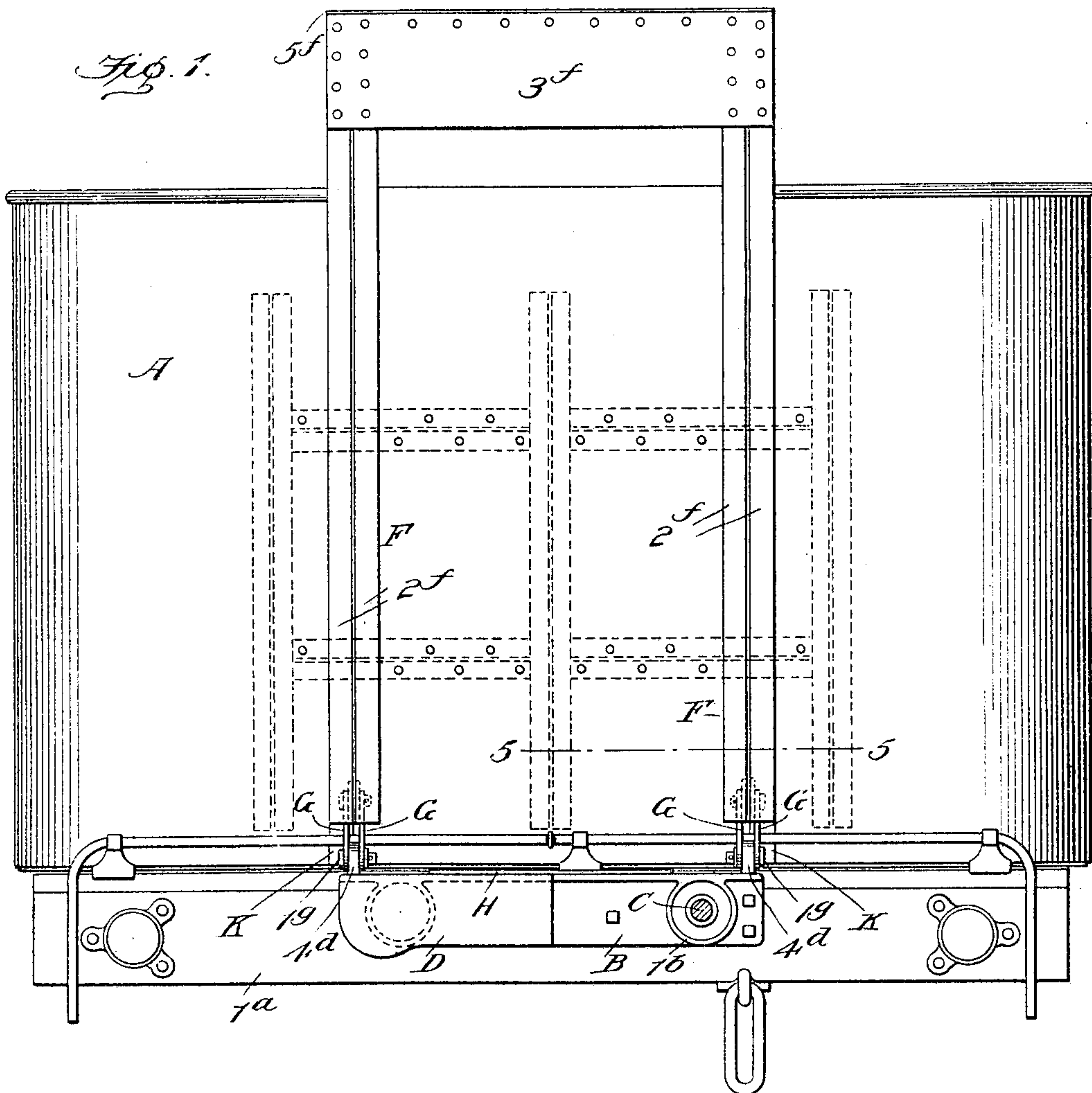
No. 799,227.

PATENTED SEPT. 12, 1905.

R. L. ETTINGER.  
SAFETY DEVICE FOR RAILWAY CARS.

APPLICATION FILED MAR. 31, 1905.

2 SHEETS—SHEET 1.



Witnesses

Edwin L. Bradford  
*[Signature]*

3f H D 3a

Inventor  
Robert L. Ettinger  
by *[Signature]*

Attorney

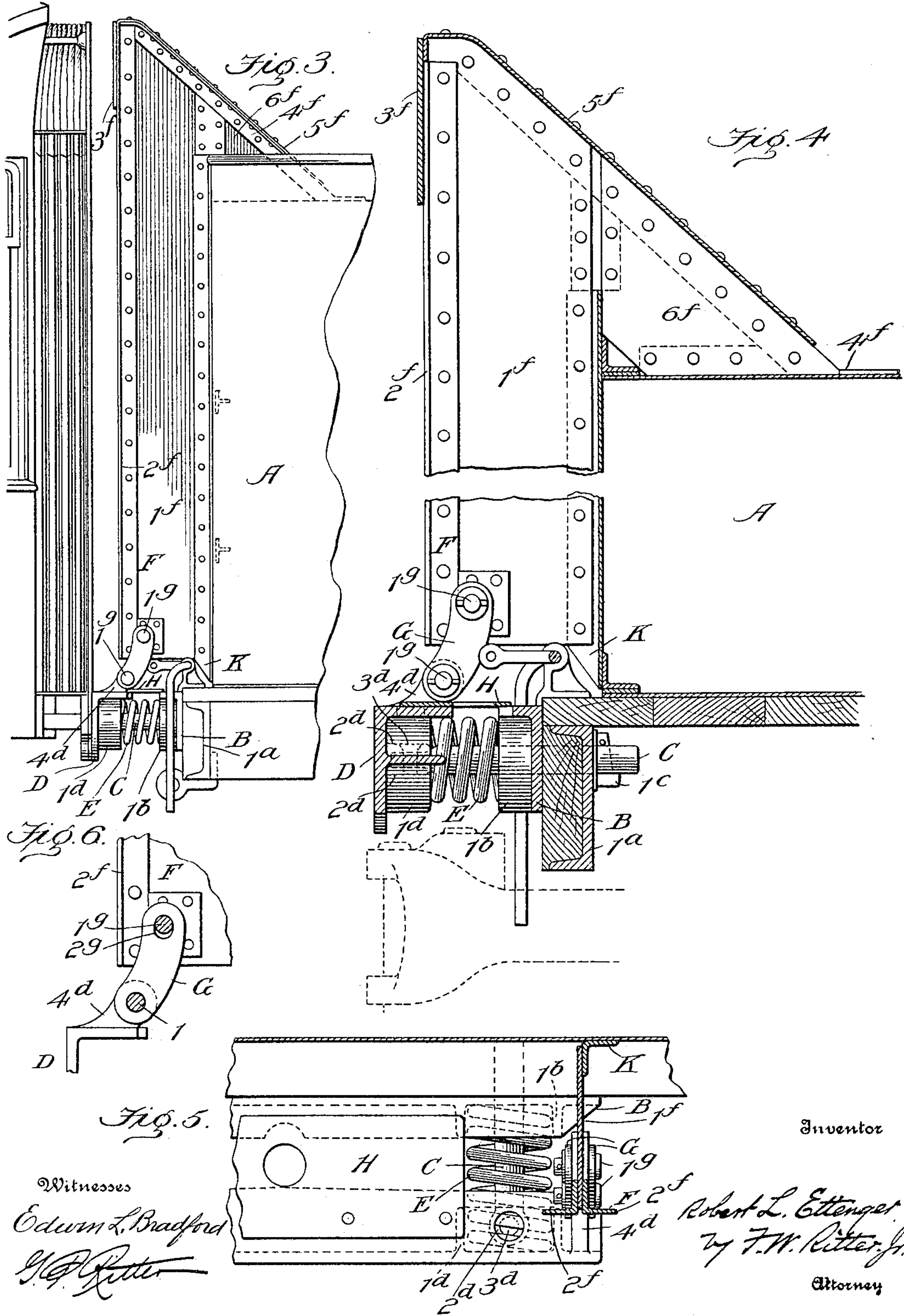
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Edwin L. Bradford  
J. F. Ritter

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Robert L. Ettinger  
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# UNITED STATES PATENT OFFICE.

ROBERT L. ETTENGER, OF WASHINGTON, DISTRICT OF COLUMBIA.

## SAFETY DEVICE FOR RAILWAY-CARS.

No. 799,227.

Specification of Letters Patent.

Patented Sept. 12, 1905.

Application filed March 31, 1905. Serial No. 253,057.

*To all whom it may concern:*

Be it known that I, ROBERT L. ETTENGER, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Safety Devices for Railway-Cars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to the construction of safety devices for railway-cars, and is particularly designed to prevent the telescoping of the locomotive-tender and its adjacent car. Locomotive-tenders have been equipped with vestibules in which the face-plates and buffers form a continuous vertically-alined connection yieldingly maintained in constant contact with the face-plate of an adjacent vestibule by buffer-springs and diaphragms. Such construction, however, is intended primarily as a protection against dust and weather and when applied to the rear of tenders for the purpose of preventing tramps from riding and to decrease the oscillation of the tank and adjoining car. The contact between the face-plate of the vestibule on a tender and the face-plate of the vestibule of an attached car is objectionable, as such contact by reason of the short wheel-base of the tender and its light weight when not heavily loaded tends to cause the rear wheels of the tender to climb the rail when curving, thus also increasing flange wear of the wheels.

Generally stated, my invention consists in providing the tender at its sill or frame line with a yieldingly-supported buffer which constantly contacts the attached car and in combination therewith safety-plates constituting a rigid buffer, the latter being maintained out of contact with the adjacent car except in cases of collision or an unusually hard buffing strain, and such a construction embodies the main feature of my invention.

There are other minor features of invention residing in particular combinations and elemental construction, all as will hereinafter more fully appear and be particularly pointed out in the claims.

In the drawings forming a part of this specification, Figure 1 is a view in elevation of a construction embodying my invention applied to a locomotive-tender, a portion of the buffer-plate being broken away to disclose the buffer-spring seat. Fig. 2 is a plan view thereof. Fig. 3 is a view in side elevation,

showing the normal relative positions of the safety devices applied to the tender and the vestibule of the adjacent car. Fig. 4 is an enlarged vertical central section of Fig. 1, parts broken away, the relation of the coupler thereto being shown in dotted lines. Fig. 5 is an enlarged horizontal section on the line 5 5, Fig. 1, looking down, the uncoupling-lever and brackets being omitted. Fig. 6 is an enlarged detail view showing the link connection of the buffer-plate to the safety-plates.

Like symbols refer to like parts wherever they occur.

I will now proceed to describe my invention more fully, so that others skilled in the art to which it appertains may apply the same.

In the drawings chosen for the purpose of illustrating my invention, the scope whereof is pointed out in the claims, A is a locomotive-tender, of which 1<sup>a</sup> is the end sill, such tender and its underframing being of any desired construction or character.

Secured to the end sill 1<sup>a</sup> by bolts or in other suitable manner at the sill-line is the buffer-spring seat B, the latter being provided with spring-pockets 1<sup>b</sup> 1<sup>b</sup>, which are centrally perforated to permit the passage of the buffer-stems C C, by which the buffer-plate D is guided and limited in its movements. The buffer-plate D is provided on its interior with spring-pockets 1<sup>d</sup> 1<sup>d</sup>, corresponding in number and arrangement with the spring-pockets 1<sup>b</sup> 1<sup>b</sup> of the buffer-spring seat B, and within said spring-pockets with perforated lugs or jaws 2<sup>d</sup> 2<sup>d</sup>, which are adapted to receive between them the outer perforated ends of the buffer-stems C C and to be flexibly secured thereto by pins 3<sup>d</sup>.

Seated within the spring-pockets 1<sup>b</sup> 1<sup>b</sup> and 1<sup>d</sup> 1<sup>d</sup> of the buffer-spring seat B and buffer-plate D are the buffer-springs E, said springs inclosing the buffer-stems C and being maintained in proper position and relation by the latter, which, as heretofore described, are flexibly attached to the buffer-plate D at their outer ends and limit the outward movement thereof by suitable means—as, for example, the keys 1<sup>e</sup>.

Upon the buffer-plate D are preferably formed lugs 4<sup>d</sup> 4<sup>d</sup>, which afford means for suspending such buffer-plate to the safety-plates F F through the agency of the links G G, which are flexibly connected to both safety-plates F and buffer-plate D by pins 1<sup>f</sup> 1<sup>f</sup>.

In order to permit the buffer-plate D to



move horizontally, the buffer-plate suspension-links G (see Fig. 6) have the upper eyes 2<sup>s</sup> 2<sup>s</sup> thereof slightly elongated to compensate for the slight vertical movement of the said links.

Preferably a foot-plate H spans or bridges the space between the buffer-spring seat B and buffer-plate D, such foot-plate being provided with an opening for the passage of the uncoupling-chain and being preferably riveted to the upper flange of said buffer-plate.

The rigid safety-buffer, which is attached to the rear of the tender and extends upwardly above the yielding buffer devices heretofore described, may be of any suitable construction to properly coact with the face-plate of the vestibule on the adjacent car when the buffer has receded sufficiently to permit the same, but preferably consists of a plurality of safety-plates F F, formed of plates 1<sup>f</sup> 1<sup>f</sup>, to the outer edges of which are riveted angle-irons 2<sup>f</sup> 2<sup>f</sup>, designed under proper conditions to engage the face-plate of the adjacent vestibule. Said safety-plates F F are preferably connected at the top by a tie-plate 3<sup>f</sup> and are braced and connected to the top of the tank A in any suitable manner—as, for example, by the inclined angle-irons 4<sup>f</sup> 4<sup>f</sup>, cover brace-plate 5<sup>f</sup>, and side brace-plates 6<sup>f</sup> 6<sup>f</sup>. The connection of the safety-plates F F to the rear wall of the tank may be by riveting to the angle-irons K K, which are themselves secured to the tank. If desired, the rigid buffer may be further braced and reinforced by the addition of a system of bracing within the tank, such as is shown in dotted lines in Fig. 1, T-irons being preferably employed for this purpose.

It will be understood that the buffer-plate D normally projects outwardly beyond the plates F F of the rigid safety-buffer a sufficient distance such that all or substantially all lost motion and spring resistance in the draft-gear and buffers of both the tender and attached car are taken up before the face-plate of the adjacent vestibule contacts the safety-plates F F of the safety-buffer. When the

whole yielding resistance has been overcome, whether from buffing-strains due to collision or otherwise, the face-plate of the vestibule of the attached car immediately comes in contact with the corresponding portions of the rigid safety-buffer to prevent the tender from telescoping the following car and to prevent the latter from pushing the tender off the track.

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

1. In a safety device for railway-cars, the combination with an upwardly-extending rigid buffer adapted to contact the face-plate of a vestibule, of a yielding buffer normally extending outwardly beyond said rigid buffer and flexibly connected thereto.

2. In a safety device for railway-cars, the combination with an upwardly-extending rigid buffer, of a yielding buffer secured at the sill or frame line and normally extending outwardly beyond said rigid buffer, and links connecting said rigid buffer and said yielding buffer.

3. In a safety device for railway-cars, the combination with a buffer-spring seat, of a buffer-plate, springs interposed between said buffer-spring seat and said buffer-plate, an upwardly-extending rigid buffer adapted to have extended contact with the face-plate of a vestibule, and links for connecting said buffer-plate to said rigid buffer.

4. The combination with a car, of a yielding buffer secured at the frame-line thereof, and links for suspending said buffer.

5. In a safety device for railway-cars, the combination with the car-frame, of a yieldingly-supported and flexibly-suspended buffer, and a rigid buffer located back of the normal position of the yielding buffer.

In testimony whereof I affix my signature in presence of two subscribing witnesses.

ROBERT L. ETTINGER.

Witnesses:

G. P. RITTER,

F. W. RITTER, Jr.