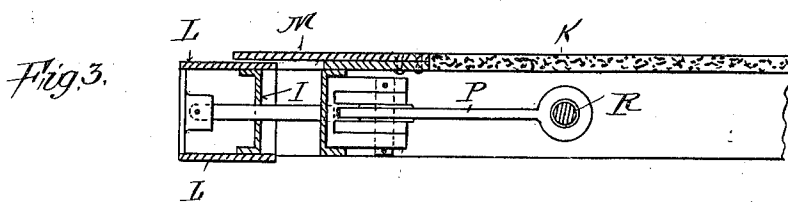
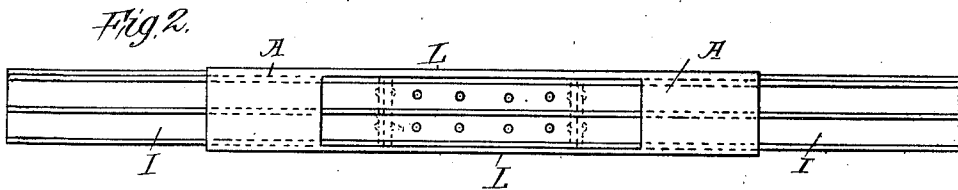
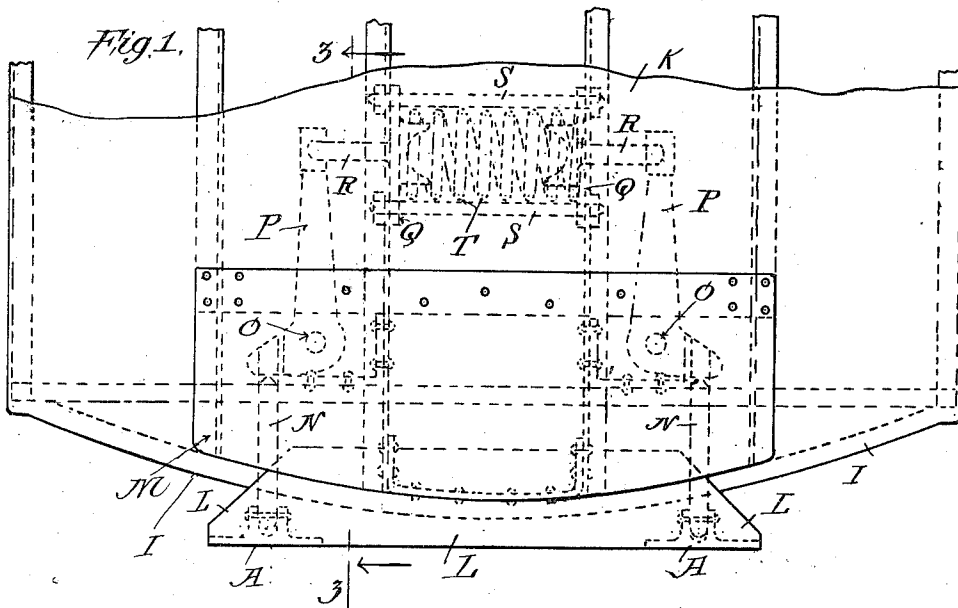


P. W. ROBERTSON.
 COMBINED BUFFER AND ANTICLIMBER CONSTRUCTION.
 APPLICATION FILED DEC. 1, 1911.

1,049,268.

Patented Dec. 31, 1912.

2 SHEETS-SHEET 1.



Witnesses:
 W. Benjamin
 Florence M. Edenholm.

Phillip W. Robertson, Inventor
 By his attorney
 Daniel C. Marby

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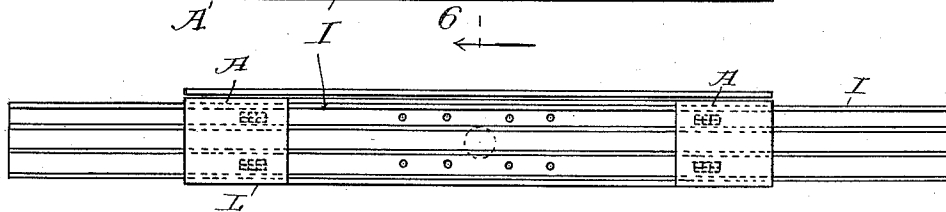
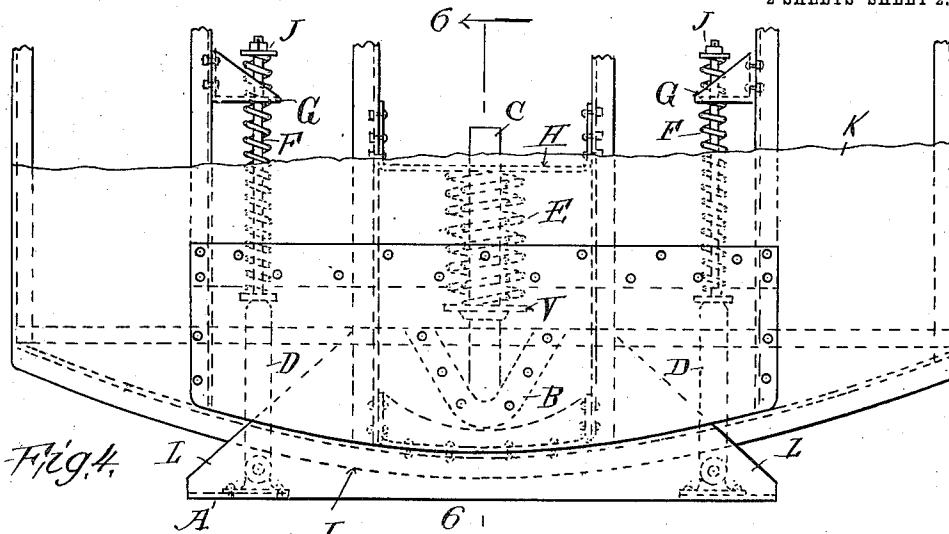


Fig. 5.

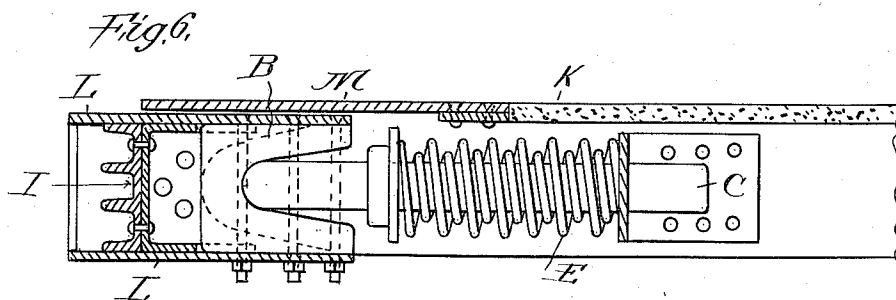


Fig. 6.

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UNITED STATES PATENT OFFICE.

PHILIP W. ROBERTSON, OF NEW YORK, N. Y., ASSIGNOR TO FRANK HEDLEY, OF NEW YORK, N. Y.

COMBINED BUFFER AND ANTICLIMBER CONSTRUCTION.

1,049,268.

Specification of Letters Patent.

Patented Dec. 31, 1912.

Application filed December 1, 1911. Serial No. 663,326.

To all whom it may concern:

Be it known that I, PHILIP W. ROBERTSON, a citizen of the United States, residing in the city, county, and State of New York, have made a certain new and useful Invention in Combined Buffer and Anticlimber Construction for Cars, of which the following is a specification.

The invention relates to a combined buffer and anti-climber construction for use on, or in connection with, the ends of cars, and particularly for use on the proximate ends of adjacent cars which are coupled together.

The object of the invention is to provide a combined buffer and anti-climber for the ends of cars, and having such construction and arrangement as to afford a continuous platform between the adjacent ends of coupled up cars while at the same time affording means, in case of collision impact, for preventing the riding of the end of one car or the platform thereof, over or upon the proximate end or platform of the next adjacent car.

Other objects of the invention will appear more fully hereinafter.

The invention consists substantially in the construction, combination, location and relative arrangement of parts, all as will be more fully hereinafter described, as shown in the accompanying drawing, and finally pointed out in the appended claims.

In Patent No. 867367, granted October 1st, 1907, to Frank Hedley, a construction is shown, described and claimed for preventing the climbing of the ends or platforms of cars upon each other in case of collision impact, so as to bring the longitudinal sills or beams of the car bodies out of longitudinal alinement with each other, a condition which conduces to the telescoping of the cars, the one upon the other. In the practical application of the anti-climber device of said patent to the ends of passenger or other cars designed to be coupled together into a train, of two or more cars, it is desirable to provide means whereby a continuous platform is provided between the cars. It is also desirable to normally maintain the anti-climber device of the one car, car end or platform, out of wearing contact with the anti-climber device on the proximate end of the next adjacent car, during the normal operation of the cars, so as to permit the

free relative vertical vibration or movement of the car ends under normal running conditions. The accomplishment of these purposes is attained by the use of buffers or buffing face plates mounted upon the respective ends of the cars to be coupled up, said buffers being yieldingly pressed endwise of the car and beyond the car-end, and presenting opposed vertical rubbing or bearing surfaces to each other. That is, the buffer or wearing plate yieldingly projected from the end of one car receives the bearing surface of the buffer plate carried by the proximate end of the next adjacent car. Under normal coupled up running conditions, the vertical bearing surfaces of the buffers contact with each other, said buffers being respectively pressed or forced yieldingly back upon their respective car-ends, when the cars are coupled together. The ordinary arrangement of buffers or buffing face plates employed in this connection are usually so arranged that they blanket the anti-climber devices applied to the car-ends, with the result that in case of collision impact it is impossible for the one anti-climber device to become interlocked with the other device on the proximate end of the adjacent car, thereby resulting in a failure of the anti-climber devices in the accomplishment of their functions. Moreover, where the buffing plates blanket or extend over the anti-climbers, or the effective engaging portions thereof, a collision impact may occur of sufficient force to cause the buffing plates to be bent over or between the engaging ribs of the anti-climber devices. Before this takes place however, to a sufficient degree to effect or accomplish the anti-climbing functions of the anti-climbers, the force of the collision impact will be sufficient to cause the ends of the cars to ride the one upon the other, thereby bringing about a condition conducive to the telescoping of the cars and, consequently, resulting in injury if not destruction to the cars and expensive or possibly fatal accidents.

It is among the special purposes of my present invention to avoid these objections and to provide a structure in which not only may the anti-climber devices be employed but also in which may be employed the buffer plates without interfering with the anti-climber devices in the accomplishment and

performance of their functions and purposes. At the same time I propose to so mount and arrange the buffer plates as to permit the relative lateral swinging movements of the cars in turning curves, and I also utilize the buffer plates and their supporting connections to form a continuous platform between the coupled up ends of the cars. I also propose to provide a novel construction for mounting the buffer plates in order to secure simplicity and efficiency in the normal operation and the coöperative relation of the same with reference to the anti-climber devices.

While I have shown and will now describe various constructions and arrangements embodying the principles of my invention it is to be understood that I do not limit or confine myself in the broadest scope of my invention, as defined in the claims, to the specific structures, relations or arrangements shown.

Referring to the accompanying drawings and to the various views and reference signs appearing thereon.—Figure 1, is a view in top plan showing a construction of combined buffer plate and anti-climber embodying the principles of my invention. Fig. 2, is a view in elevation of the same. Fig. 3, is a view in section on the line 3—3, Fig. 1, looking in the direction of the arrows. Fig. 4, is a view similar to Fig. 1, showing a modified construction of my invention. Fig. 5, is an end elevation of the same. Fig. 6, is a view in section on the line 6—6 Fig. 4, looking in the direction of the arrows.

Referring to the construction shown in Figs. 1, 2, and 3, K, designates the floor of the car or car platform; A, the vertical wearing or bearing surfaces forming the buffer plate. These buffer plates are suitably supported between the upper and lower plates L, fitted to slide respectively over and under the anti-climber devices I. The latter may be of the same construction, arrangement or relation and mounted or secured upon the car-end in the same manner as shown, described and claimed in the Hedley Patent No. 867367 above referred to. The buffer plates A, on the end of the car, or the vertical bearing portions thereof, are separated from each other and occupy positions on respectively opposite sides of the center line of the car, as clearly shown, thereby exposing in end view the effective engaging end portion of the anti-climber device I, lying immediately behind them as clearly shown in Figs. 2, 3, 5 and 6. The buffer plate carriers L, extend back underneath the platform of the car-end or underneath a cover plate M, thereof, and are suitably supported in such manner as to cause the buffer plates to be yieldingly pressed outwardly away from the end of the car. The means for yieldingly projecting or pressing the

buffer plates outwardly may vary throughout a wide range without departure from the spirit or scope of my invention.

In Fig. 1, I have shown one arrangement which is simple and efficient in operation, and wherein the wearing plates have pivotally connected thereto, links N, which extend longitudinally of the car, and at their inner ends are connected to the short arms of bell crank levers P, pivotally mounted as at O, underneath the car platform, and connected at their long ends to links R, which are arranged to move transversely of the car platform and each carrying a head plate Q, mounted to slide upon rods S. A heavy spring T, is interposed between the head plates Q. The arrangement of the bell-crank levers P, is such that the spring T, is held in compression between the head plates Q, and normally exerts its tension to separate said head plates and to rock the bell crank levers P, in a direction to project or extend the wearing plates A, to their fullest extent outwardly or away from the end of the car. When however, another car is coupled up thereto, the buffer plates A, of the two car ends, similarly equipped, come into contact with each other and the buffer plates on each proximate end of the cars which pressed backwardly toward their respective car-ends, thereby causing the bell crank levers P, to rock in a direction to force the head-plates Q, toward each other, thereby placing spring T, in compression. Under normal running conditions the tension of spring T, is sufficient to prevent the buffer plates A, from being forced back sufficiently for the anti-climber device I, of the one car-end to interlock with the anti-climber device of the other car-end. Under conditions of collision impact, however, the buffer plates on the respective proximate ends of the coupled up cars are forced back toward their respective car-ends sufficiently for the anti-climber devices on the respective car-ends to become interlocked, thereby preventing the one car end from riding upon the other car end, and hence preventing the telescoping of the cars. The arrangement above described is, for many reasons a preferable arrangement in that a desirable lateral flexibility of the buffer plate structure and supporting and pressure connections therefor is provided which permits of the retaining of the buffer plates on one car remaining in bearing contact with those on the proximate end of the adjacent car while turning curves, without interposing, increasing or vertical resistance. For instance, if one side or variable bearing portion of the buffer plate is required to yield more than the vertical bearing portion at the other side, as in turning a curve, the tension of spring T, remains the same since the head plate Q, on the one side or at one end of the spring T, moves coinci-

dently with the head plate Q, at the other end of the spring, and consequently the effective tension of the spring remains the same.

5 In Figs. 4, 5 and 6, a modified arrangement for mounting and supporting the buffer plates and embraced in the broad scope of my invention is shown. In this arrangement a socket casting B, is provided and
10 to which the upper and lower plates L, which carry the vertical buffer plates A, are secured. The one end of a rod or pin C, is received in this socket-casting. Buffer springs E, are coiled upon pin C, and interposed between a collar V, on pin C, and
15 against a stationary bracket H, carried by the car platform supporting beams. The tension of this spring is normally exerted through pin C, against B, and plates L, to project or extend the buffer plates A, beyond the end of the car. When two cars
20 similarly equipped are coupled up, the buffer plates A, engage each other and are forced respectively backward upon their respective car-ends against the tension of the
25 buffer springs E. In order to properly guide the buffers in their yielding movement toward and from the car ends, they are provided at each side with links D, to which are
30 connected rods J, arranged to slide through brackets G, and carrying auxiliary springs F, the function of which is to normally maintain the buffer plates A, in proper relation at substantially right angles to the
35 center-line of the car but which respectively yield to permit lateral flexible movement of the buffer plates to accommodate for the turning of curves.

40 With respect to the relation of the buffer plates and the anti-climber devices, the arrangement shown in Figs. 4, 5, and 6 is similar in all respects with that shown in Figs. 1, 2 and 3.

45 It will be observed that with the constructions above described a continuous platform between the proximate ends of adjacent cars is provided, the car ends are equipped with buffer plates, and the arrangement is such that the application and use of the buffer
50 plates does not interfere with the use and operation nor with the accomplishment of the functions and purposes of the anti-climber devices.

55 Having now set forth the object and nature of my invention and various construc-

tions embodying the principles thereof, what I claim as new and useful and of my own invention and desire to secure by Letters Patent, is,—

1. In a combined buffer and anti-climber 60 construction for cars, the combination with an anti-climber device applied to the end of the car, of a buffer yieldingly mounted upon the end of the car to project beyond the same, and having an opening to uncover 65 the anti-climber device.

2. The combination with a car end and an anti-climber device applied to the end surface thereof, of carrier plates arranged to extend respectively over and below the 70 anti-climber device and carrying vertical bearing surfaces on opposite sides of the center line of the car, and means for yieldingly pressing said bearing portions outwardly away from the end of the car. 75

3. The combination with a car end and its platform or floor and an anti-climber device applied to the exterior end surface thereof, of a buffer arranged to extend beyond the end of the car, supporting devices 80 therefor, arranged beneath the car floor or platform, means for yieldingly pressing the buffer outwardly away from the car end, said buffer arranged in front of the anti-climber device and having an opening there- 85 through to uncover the effective portion of the anti-climber device.

4. The combination with a car end having an anti-climber device applied to the exterior end surface thereof, of a buffer straddled over the anti-climber device and having a central opening therethrough to uncover the anti-climber device, and means for 90 yieldingly pressing the buffer beyond the end of the car. 95

5. The combination with a car end of a buffer mounted to extend beyond the car end, links connected to the respective ends of the buffer, bell crank levers to which the links are connected, head plates operated 100 by the bell-crank levers, and a compression spring interposed between said head plates.

In testimony whereof I have hereunto set my hand in the presence of the subscribing witnesses, on this 29th day of November 105 A. D., 1911.

PHILIP W. ROBERTSON.

Witnesses:

FLORENCE M. EDENHOLM,
S. E. DARBY.