

(No Model.)

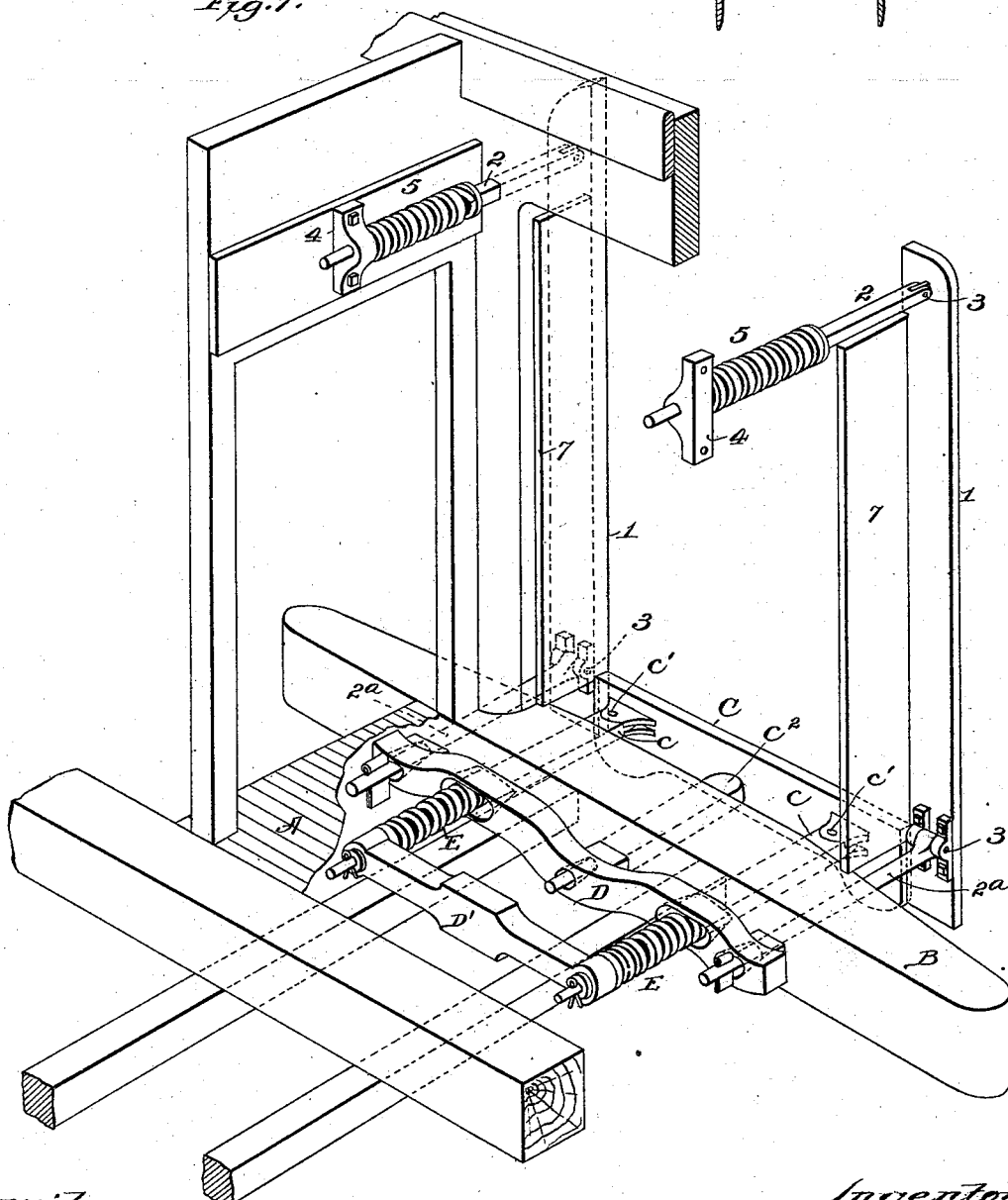
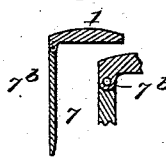
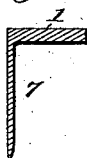
3 Sheets—Sheet 1.

H. C. BUHOUP.

BUFFER AND VESTIBULE CONNECTION FOR PASSENGER CARS.

No. 503,647.

Patented Aug. 22, 1893.



witnesses.

Harry S. Brown
Mr. Dyer.

Inventor:

Harry C. Bukoup
By F. W. Rutter Jr
Att'y.

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Fig. 2.

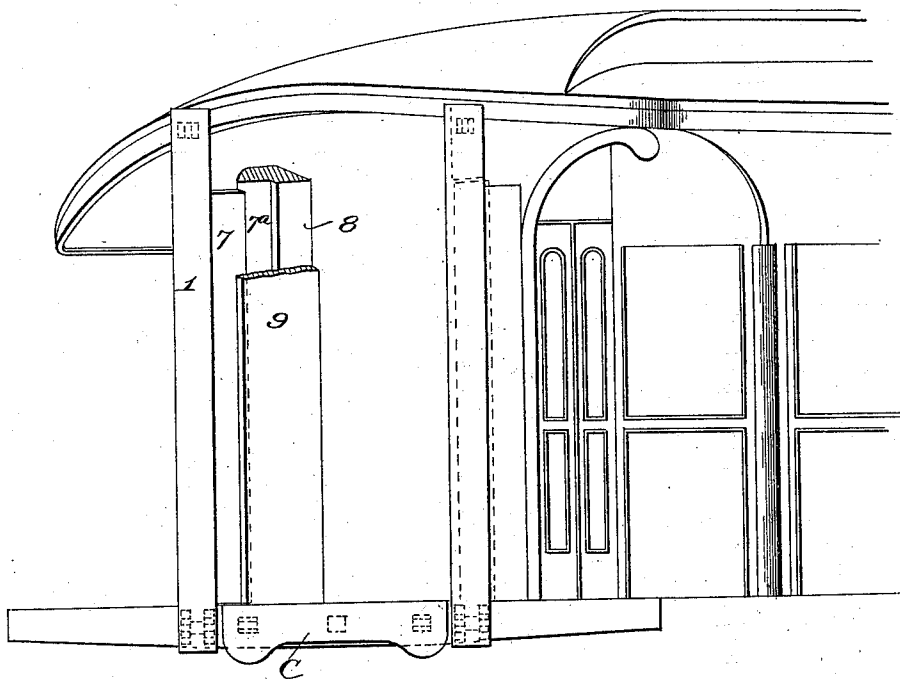
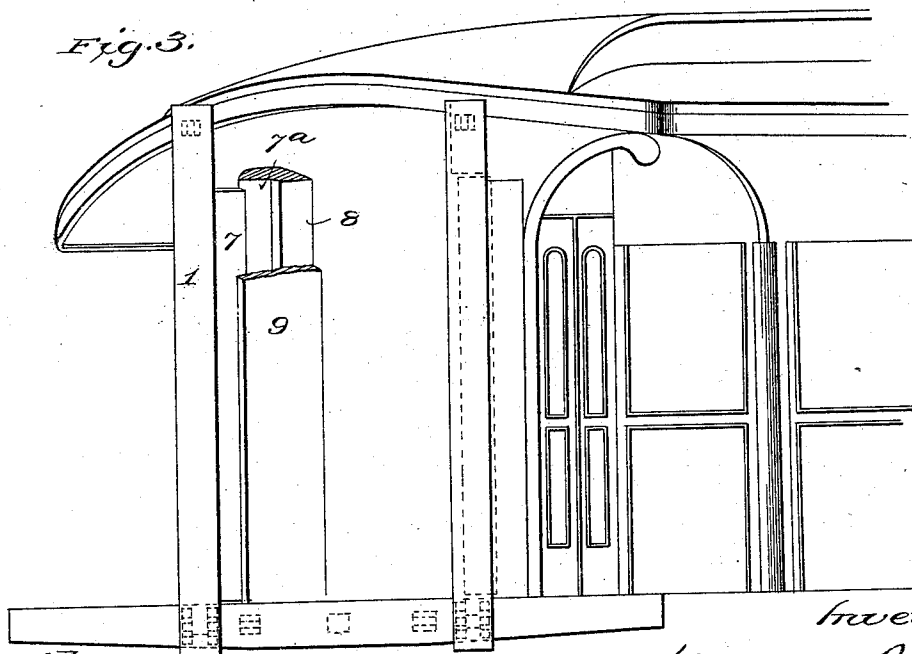


Fig. 3.



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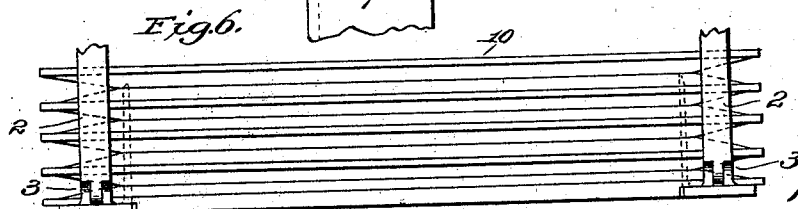
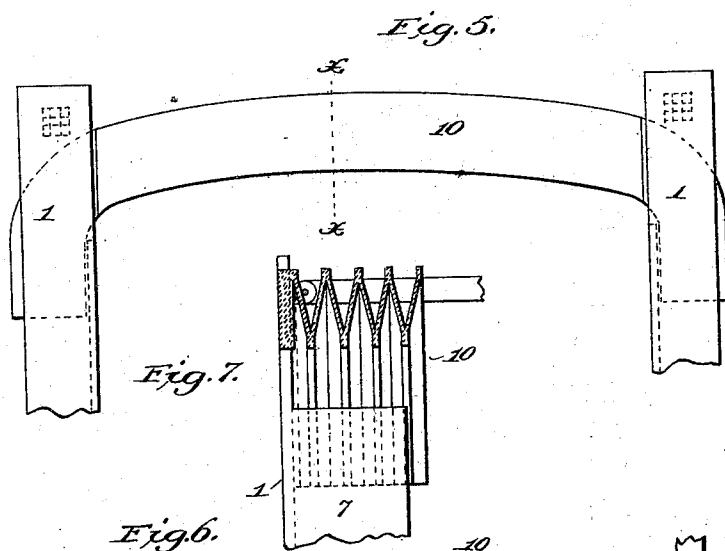
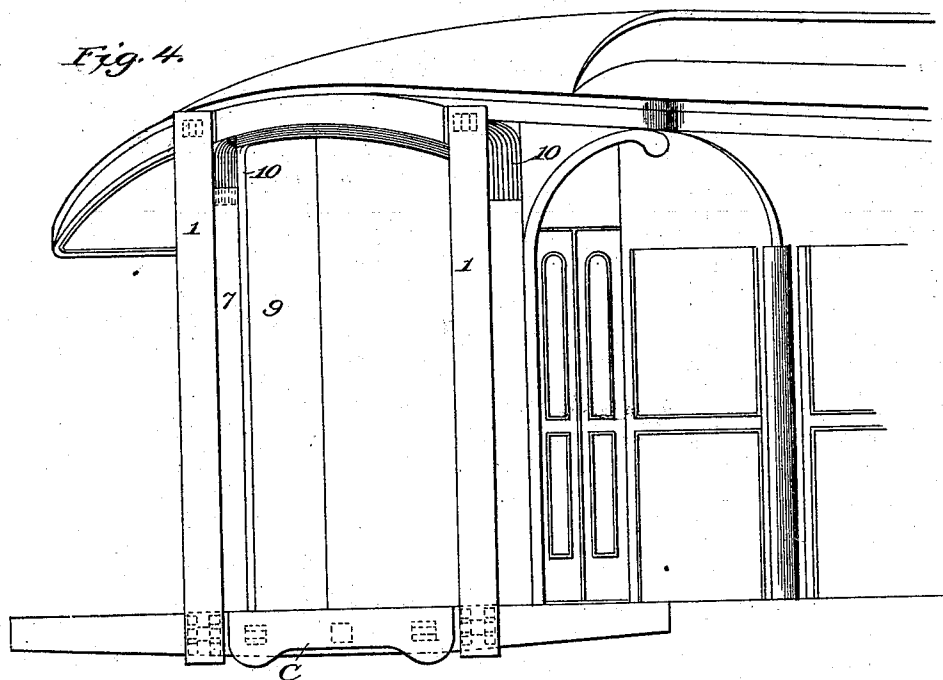
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BUFFER AND VESTIBULE CONNECTION FOR PASSENGER CARS.

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witnesses

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Inventor:

Harry C. Buhoup
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UNITED STATES PATENT OFFICE.

HARRY C. BUHOUP, OF CHICAGO, ILLINOIS.

BUFFER AND VESTIBULE CONNECTION FOR PASSENGER-CARS.

SPECIFICATION forming part of Letters Patent No. 503,647, dated August 22, 1893.

Application filed May 9, 1893. Serial No. 473,533. (No model.)

To all whom it may concern:

Be it known that I, HARRY C. BUHOUP, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Buffer and Vestibule Connections for Passenger-Cars; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, wherein—

Figure 1 is a rear perspective view of a car platform and vestibule, portions of the platform and vestibule being broken away to show the construction and connection of the vertical and horizontal buffers. Fig. 2 is a front perspective of the end of the car and vestibule, the bellows or accordion fold hood being removed, and part of the casing broken away at one angle of the vestibule to show the relation of the rearwardly extending plate or flange of the vertical buffer to the casing and door post of the vestibule. Fig. 3 is a front perspective similar to Fig. 2, the center horizontal buffer having been removed. Fig. 4 is a front perspective similar to Fig. 2, the bellows or accordion rubber hood which closes the space between the end of the car and the upper end of the vertical buffer being in place. Fig. 5 is an enlarged front view of the rubber or equivalent flexible connection between the two vertical buffer plates at the top, and of portions of the buffer plates. Fig. 6 is an inverted view of the rubber or equivalent flexible bellows connection or hood. Fig. 7 is a longitudinal vertical section of the flexible connection between the tops of the vertical buffers and of the bellows or flexible hood on the line $x-x$, Fig. 5., showing the relation of said parts to the vertical buffers and the flange or lateral plate thereof. Figs. 8 and 9 are transverse sections of the flanged vertical buffer plates, the latter figure showing how a plate hinged to the buffer plate may be substituted for the flange if desired.

Like symbols refer to like parts wherever they occur.

My invention has for its object to provide increased friction surface between the ends of the cars and greater security against telescoping in case of collision and also to provide for vestibuling cars.

To this end the main feature of my inven-

tion, generally stated, embraces the combination with a railway car, of independent parallel and vertical buffers adapted to work together or independently of each other, whereby the vibration or oscillation of the cars is perfectly controlled or limited to the minimum amount.

A second feature embraces the combination of independent parallel and vertical buffers with each other and with an independent horizontal buffer, so arranged and supported as to be adapted for either conjoint or separate operation.

A third feature of my invention embraces, the construction of the vertical independent buffers with lateral plates or flanges, to telescope with the door casing so as to exclude drafts, dust, &c.

A fourth feature, embraces, the combination with independent vertical buffer plates of a flexible hood or bellows hood adapted to close the space between the top of the car and the tops of the independent vertical buffer plates.

There are other minor features of invention, and combinations, all as will hereinafter more fully appear.

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, A indicates a passenger car platform, and B the usual bumper rail at the end thereof through which passes the stems $c c$, of the horizontal buffer plate C. The stems $c c$, may be rigidly attached to the horizontal buffer plate C, but are usually pivoted as at c' and extend thence back through the bumper rail B, and through the cross bar or equalizer D, between which and the cross bar D' are the springs E, E,—all of which may be of the usual or any approved construction for horizontal buffers—or under some circumstances may be entirely omitted if a horizontal buffer is not to be used in the combination. When the horizontal buffer plate C is used it may be provided with the usual horizontal flange or sill plate. I also prefer to provide a center stem C^2 , which has its rear end supported by the springs supported equalizing bar D, in order to prevent the buffer C from bending if compressed in the center—but said central stem is not an essential feature of the construction.

1, 1, indicate two vertical parallel and independent buffer plates, each of a length substantially equal to the height of the vestibule, and each supported above and below by stems 2, 2^a, which may be rigidly secured thereto, or—as is preferred—pivotally connected therewith, as at 3. These independent buffers 1, 1, may be actuated by air or weights, without departing from the spirit of my invention, but are preferably spring supported, as shown, that is to say, the upper stems pass through the framing and through brackets 4, and are encircled by spiral springs 5 which bear on the brackets and against a shoulder or its equivalent on the stem 2. The lower ends of the vertical buffer plates may be supported in like manner, if desired—and should be if the vertical buffer plates are used without the horizontal buffer plate C,—but in case the horizontal buffer plate C forms part of the combination I prefer to dispense with independent springs on the lower stems, and to connect the stems 2^a—2^a, with the equalizing bar D so that the spring supports E, E, of the horizontal buffer serve for the support of the latter, as well as the former. It will be observed by examining Fig. 1 of the drawings, that the openings in the equalizing bar D for the passage of the several stems, are of an oval form which permits of the independent as well as the conjoint action of the vertical and the horizontal buffer plates. It will also be noted that the cross bar or equalizer D is so connected with the horizontal buffer stems c c, that when any action of the horizontal buffer C takes place the vertical buffers 1, 1, are also operated, though the vertical buffers may act separately. The outer faces of the vertical buffer plates may be either flat as shown in sectional view Fig. 8, or curved, as shown in sectional view Fig. 9, but I prefer to use both—that is to say—a flat vertical buffer plate on one car in contact with a curved face buffer plate on the other car (applied alternately), the object being to provide for curving and to reduce the friction between the platforms while curving—though flat faced buffers can be used entirely if desired. The vertical buffer plates 1, 1, may also, if desired, be made of hard wood, but iron is always to be preferred as affording greater safety in case of collision.

I provide each of the vertical buffer plates 1, with a rearwardly projecting plate (or flange) 7, which slides in and out in a recess 7^a, of the post 8 and is covered by the casing 9, (see Figs. 2 and 3,) so as to form a draft and dust proof connection between the vertical buffer plate 1 and the platform. For convenience of construction, I prefer to form the plate or flange 7 integral with the buffer plate 1—(or the whole of angle iron)—but the plate 7 may have a hinge connection with the buffer plate 1, as indicated at 7^b, Fig. 9, which will be advantageous in curving and permit of a closer joint as the recess 7^a, for the reception of the

vertical flange, or plate 7 may be of less width than would otherwise be necessary. This construction affords additional strength to the vertical lateral buffer plates 1, 1, of great value in case of a collision—and at the same time it produces a smooth iron passage-way between cars and renders it almost impossible for persons to get their hands or arms injured between the buffers and door posts of the platform, as now sometimes occurs where rubber is used for filling up the space. When the lateral vertical plates or flanges are omitted, some flexible material must be substituted therefor to close up the side spaces between the vertical buffer plates 1, 1 and the car.

10 indicates a bellows hood or accordion rubber, (see Figs. 4, 5, 6 and 7,) which forms a flexible connection between the upper ends of the vertical buffer plates 1, 1, and being secured thereto extends down on the outside of the lateral plates 7 and back to the car roof to which it is also attached, thus effectually closing the overhead space between the car and vertical buffer plates by a flexible connection which, while it secures a water and dust proof covered way, in no wise impedes the independent action of the vertical lateral buffer plates 1, 1.

I wish it also understood that the vertical buffers can be used in connection with the horizontal buffer by making one of the well-known connections, either rigid or flexible. In this case the stems 2^a might be dispensed with, so that while the principal feature of my invention is the independent vertical buffers I do not wish to confine myself strictly to that point.

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

1. The combination with a railway car, of independent lateral vertical buffers; substantially as and for the purposes specified.

2. The combination with a railway car, of independent lateral vertical buffers provided with rearwardly extending plates or flanges; substantially as and for the purposes specified.

3. The combination with a railway car, of independent lateral vertical buffers, provided with pivoted or hinged rearwardly extending plates; substantially as and for the purposes specified.

4. The combination with a railway car, of independent lateral vertical buffers, provided with rearwardly extending plates, and a casing and door posts between which said rearwardly extending plates slide; substantially as and for the purposes specified.

5. The combination with a railway car, of independent vertical lateral buffers, and a flexible connection between the tops of said buffers and the top of the car; substantially as and for the purposes specified.

6. The combination with a railway car, of independent lateral vertical buffers, one of

said buffers having a curved face and the other a flat face; substantially as and for the purposes specified.

5 7. The combination with a railway car, of independent lateral vertical buffers, and a horizontal buffer, and means for coupling the same whereby the lateral buffers may operate independently of or conjointly with the horizontal buffer; substantially as and for the
10 purposes specified.

8. The combination with a railway car, of independent lateral vertical buffers, and a spring supported cross bar; substantially as and for the purposes specified.

15 9. The combination with a railway car, of independent lateral vertical buffers, and a horizontal buffer, of a spring supported cross or equalizing bar, common to all of said buffers; substantially as and for the purposes
20 specified.

10. The combination with a railway car, of vertical buffers having rearwardly extending plates or flanges and which constitute vestibule face plates, and a horizontal buffer connected thereto; substantially as and for the
25 purposes specified.

11. The combination with a railway car, of vertical buffers having rearwardly extending plates or flanges and which constitute vestibule face plates, and a horizontal buffer with
30 hinged or flexible connection; substantially as and for the purposes specified.

In testimony whereof I affix my signature, in presence of two witnesses, this 5th day of May, 1893.

HARRY C. BUHOUP.

Witnesses:

R. E. JANNEY,
CHAS. KENNEDY.