(No Model.) 4 Sheets—Sheet 1.

W. H. WILD.

CAR BUFFER.

No. 469,051. Patented Feb. 16, 1892.

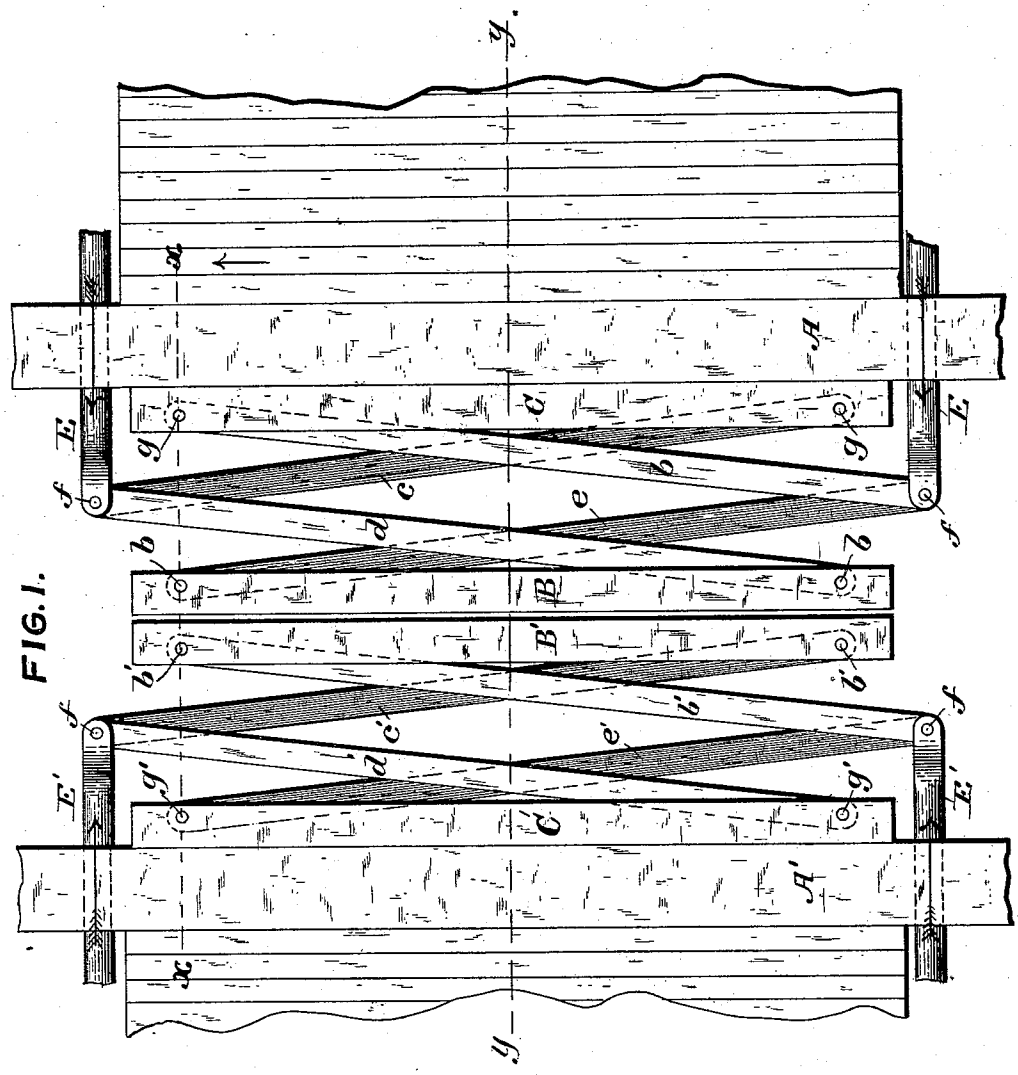

FIG. 1.

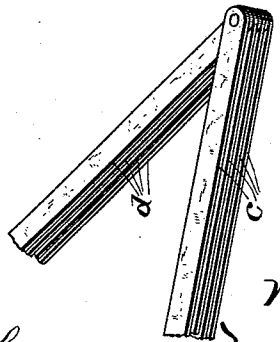

FIG. 5.

ATTEST.

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W. H. WILD.

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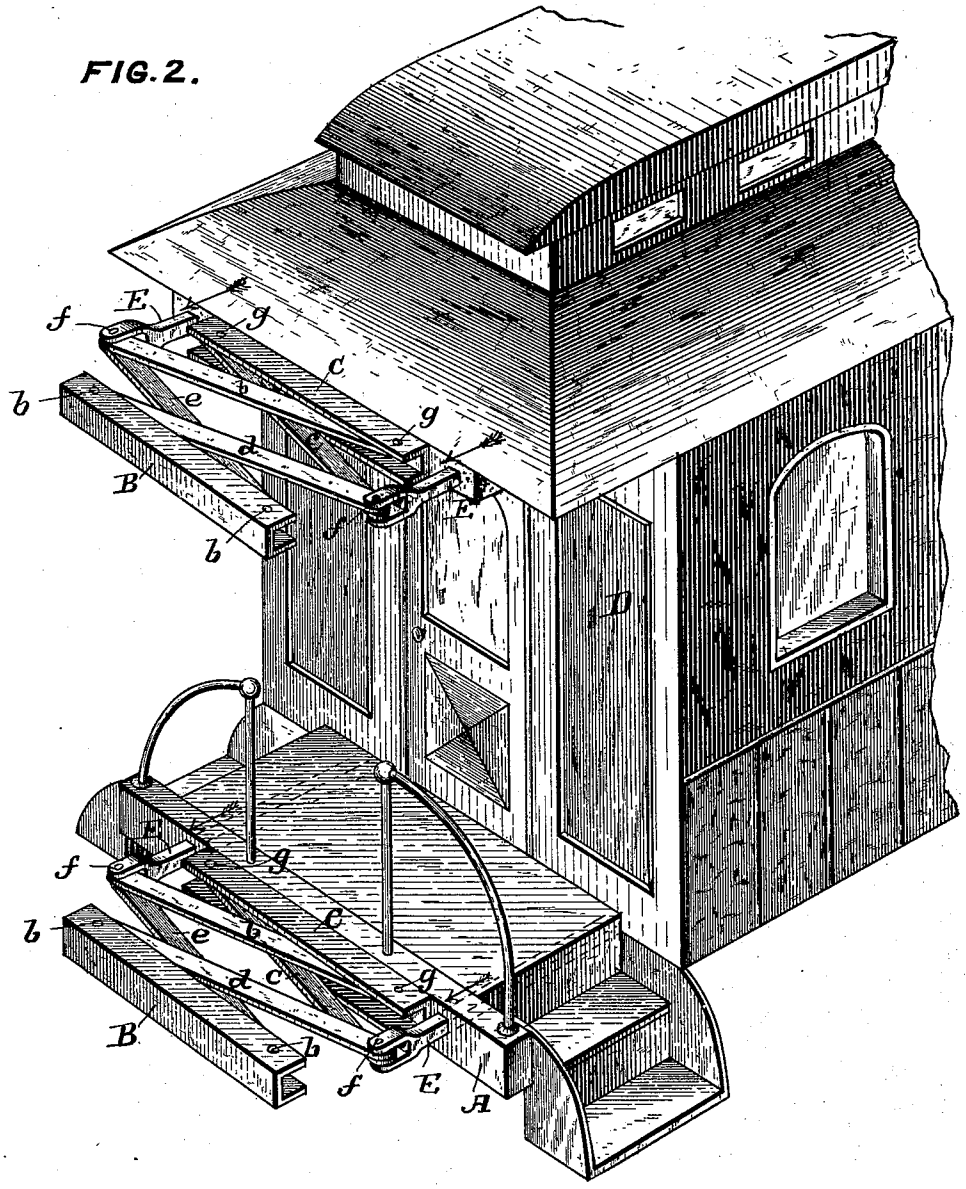
FIG. 2.



ATTEST.

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(No Model.) 4 Sheets—Sheet 3.

W. H. WILD.

CAR BUFFER.

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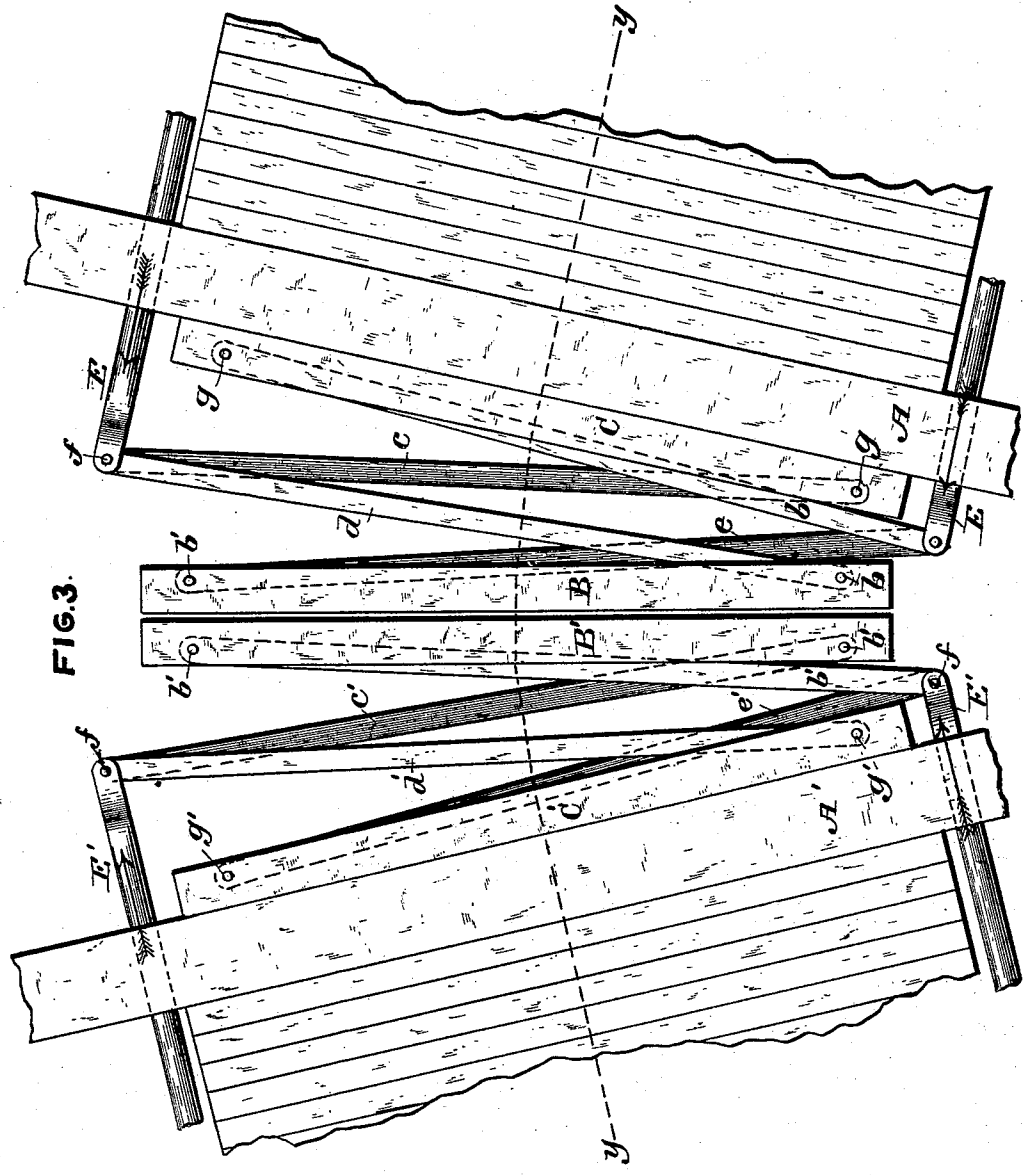

FIG. 3.

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W. H. WILD.

CAR BUFFER.

No. 469,051. Patented Feb. 16, 1892.

FIG. 4.

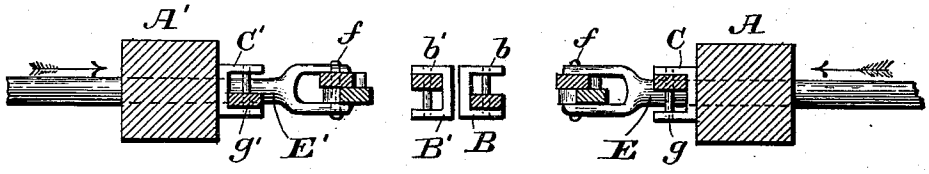
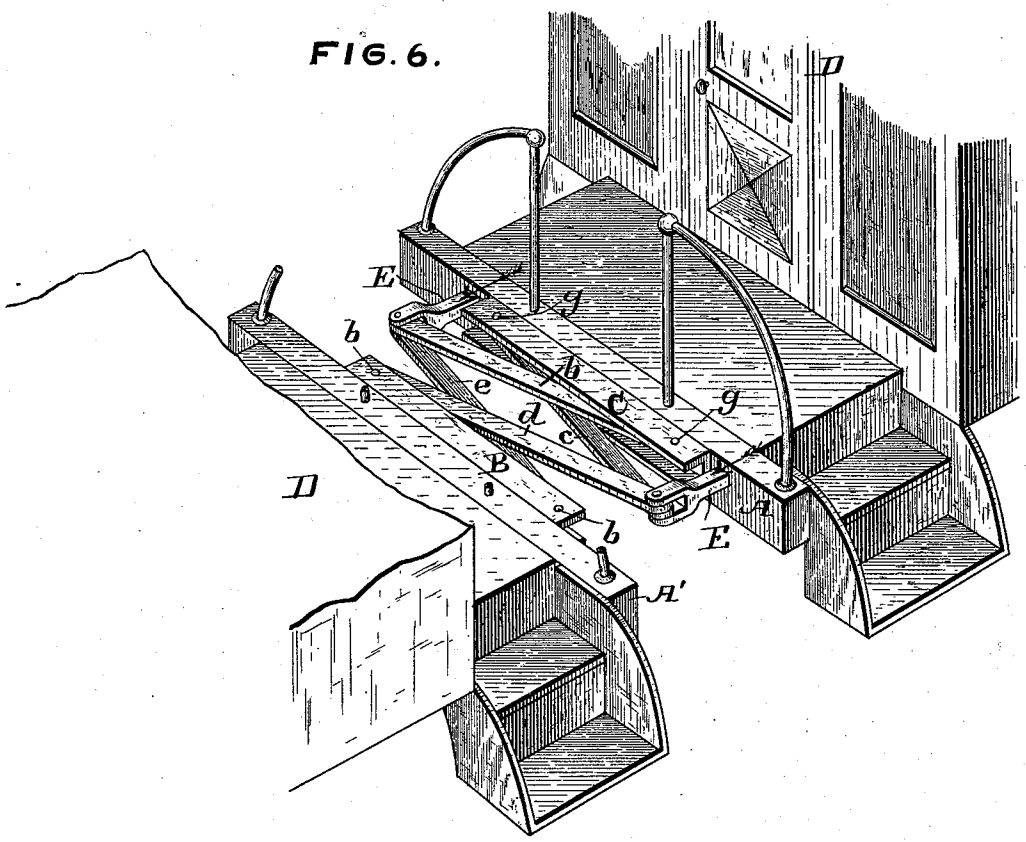


FIG. 6.



ATTEST.

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INVENTOR.

William H. Wild.

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M. D. Converse

Atty.

UNITED STATES PATENT OFFICE.

WILLIAM H. WILD, OF VALATIE, NEW YORK, ASSIGNOR TO THE WILD ENGINEERING COMPANY, OF SAME PLACE.

CAR-BUFFER.

SPECIFICATION forming part of Letters Patent No. 469,051, dated February 16, 1892.

Application filed March 7, 1891. Serial No. 384,167. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. WILD, a citizen of the United States, residing at Valatie, county of Columbia, State of New York, have invented certain new and useful Improvements in Buffers for Passenger and other Railway Cars, of which the following is a specification.

My invention relates more particularly to that class of mechanisms or devices known as "buffers" used in conjunction with other devices to form a union of the end of one car with the end of another car when the latter are coupled together for the purposes, especially in what are called "vestibuled" cars, of preserving the alignment of the same longitudinally, preventing excessive oscillation thereof, relieving each car severally from shock or end-thrust incident to stopping and starting, and in case of collision or derailment are intended, also, to aid in preventing the cars from telescoping and the train from breaking up.

My invention consists in the arrangement of a device or devices to have a pantographical action horizontally, and is composed, essentially, of the elements, parts, and combinations hereinafter fully set forth, described, and claimed.

The objects of my invention are to prevent or retard independent vibratory and swaying motions of railway-cars by means of simple, inexpensive, and smoothly-operating mechanism adapted, also, to relieve the cars severally of the shocks incident to stopping and starting and prevent wreckage in cases of collision or derailment and thus increase the comforts and safety of railway travel.

In the drawings, Figure 1 is a plan view of my invention in duplicate attached, respectively, to the abutting ends of cars. Fig. 2 is a perspective view of the same, showing how it may be applied particularly to what are called "vestibuled" cars. Fig. 3 is a plan view of my invention, showing its action when the cars are passing or upon a curve of the road. Fig. 4 is a vertical sectional view of my invention on line *x x* of Fig. 1. Fig. 5 is a desirable construction of my invention, hereinafter referred to. Fig. 6 illustrates another phase of my invention, hereinafter referred to.

Like letters indicate corresponding parts throughout the several figures.

D D′ are, respectively, the body of cars.

A A′ are the cross-sills of the ends of cars or car-platforms.

a are the cross-purlins of the roof at the ends of the cars.

B B′ are the buffer face-plates.

C C′ are the buffer seat-irons, secured to the parts A A′ and *a*.

b c d e and *b′ c′ d′ e′* are the arms or braces of what I term the "pantographic" part of my invention, crossing each other diagonally and bolted or hinged together at *f* and having their other ends united or hinged to the buffer-seat irons C C′ by bolts *g g′* at one side, respectively, as a fixed center, and to the buffer-plates B B′ by bolts *b b′* at the other side, respectively, as fixed centers and respectively combined to form an extensible flexible horizontal truss or pantograph-buffer.

E E′ are connecting-rods divided at the end and pivoted to the pantograph-truss by the bolts *f f′*. These rods communicate movement through the latter to the buffer face-plates B B′ when actuated by the pressure of any suitable mechanism or force—such as springs, steam, compressed air, or vacuum, or other well-known means—rearward of the arrows shown in Fig. 1.

The operation of my invention is as follows: Cars with my improved buffers attached are coupled by the use of any common or well-known coupling mechanism or draw-bars. The face-plates B B′, which extend beyond the ends of the cars or platform-sills, engage each other face to face throughout their length transversely to the body of the cars and are held against each other with great friction, caused by their tendency to extend toward each other as the pressure from suitable actuating mechanism or force is communicated in the direction of the arrows in Fig. 1 through the respective pantograph-arms to the same. Now when the cars are upon or passing a curve the inner lateral side of the pantograph will be compressed, while the outer or opposite lateral side of the same

will be opened or extended, as shown in Fig. 3, and the two buffer face-plates B B′ maintained in perfect contact, and thus through the action of the pantographs and frictional contact of the face-plates independent oscillatory movement of the cars is eliminated and the central longitudinal alignment thereof will remain undisturbed, as represented by the dotted line *y y* in the same figure.

It will be clear to those skilled in the art, without further elaborate description, that my invention will operate with equal effectiveness to maintain this alignment of the cars when passing over the usual inequalities of railway, and that if my invention be applied between the cross-purlins of cars above the doors and platforms, as shown in Fig. 2, its action will be equally effective in retarding independent oscillatory action of the upper portion of the cars and in preserving an alignment through a longitudinal vertical plane of the same, since there can be no lateral swaying of one car without an instant opposing resistance to it from the other car. It will further be clear that in case of sudden stoppage or starting the shocks incident are taken up by the elasticity and flexibility of my invention, and that in case of derailment or collision the liability of telescoping or breaking up of the cars and platforms is by its use greatly overcome. The face-plates on their contact-surfaces may be grooved longitudinally or vertically, or both, so as to gear into each other instead, of being made flat, as I have shown.

I do not limit myself to the particular proportions or manner of construction and connection of parts shown in carrying out my invention, since any double-acting pantographic arrangement of braces suitably united to a face-plate and buffer-seat and then to the timbers or directly to the sills or purlins of the abutting ends of cars would be an equivalent, nor to any particular means or agency for imparting pressure to the same, nor to any particular form of buffer face-plate or buffer-seat for use in combination with the pantographic arms.

My invention will be readily seen to possess the further advantage of being effectually operative when a car to which it is applied is coupled to a car unprovided with a duplicate of it, as shown in Fig. 6.

In Fig. 5 I have shown a laminated style of construction that may be adopted for the arms of the pantograph, consisting of a number of arms *b c*, made from plate metal or thin flat bars. This construction would be very strong and insure an equalized distribution of strains throughout the device.

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

In a buffer for passenger and other railway-cars, the extensible double-acting flexible pantographic device herein described, consisting of face-plates B and arms *b c* and *d e*, hinged, respectively, at their outer ends *f f*, in combination with seat-irons C and connecting-rods E, the whole adapted to operate between abutting ends of cars, substantially as and for the purposes shown and described.

WILLIAM H. WILD.

Witnesses:
CHARLES WILD,
N. P. WILD.