(No Model.)

N. P. COWELL.

CAR BUFFER.

No. 457,473. Patented Aug. 11, 1891.

Fig. 1.

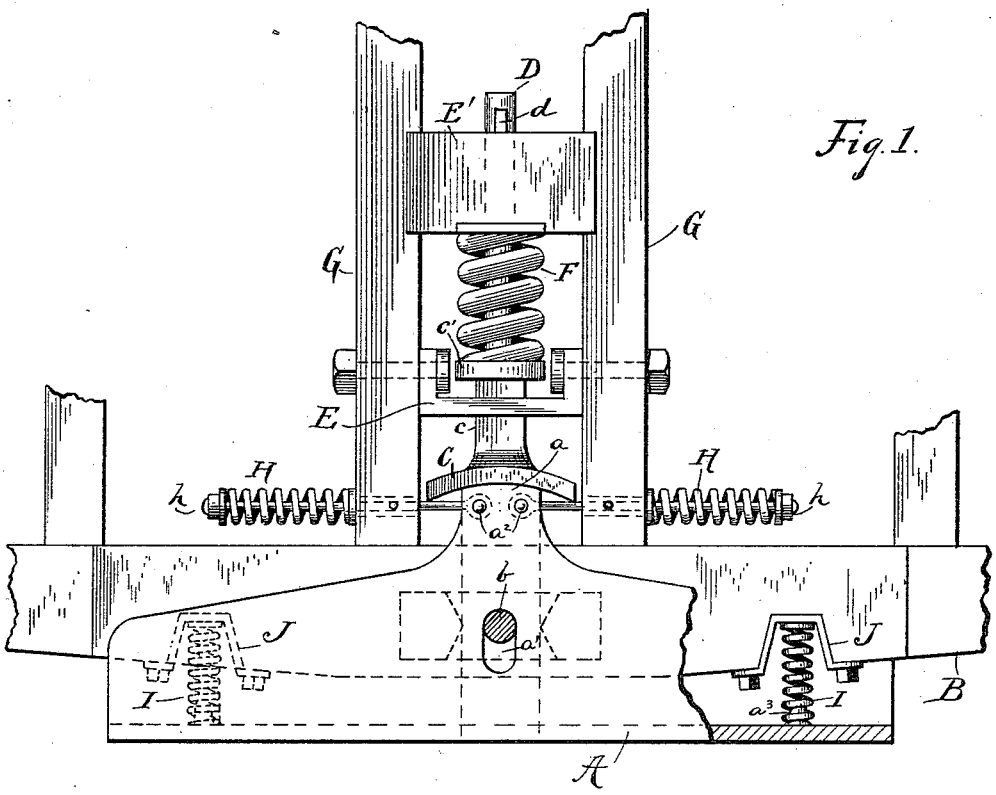
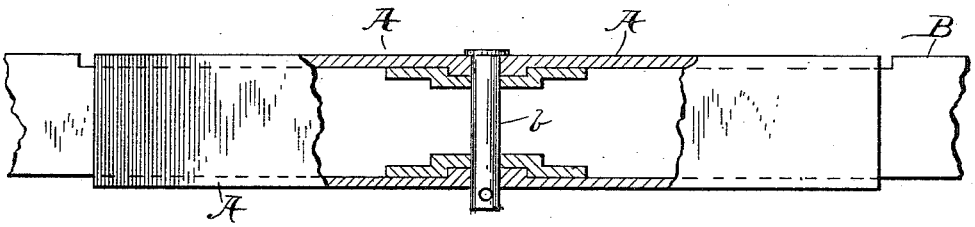


Fig. 2.



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UNITED STATES PATENT OFFICE.

NEWELL P. COWELL, OF CLEVELAND, OHIO.

CAR-BUFFER.

SPECIFICATION forming part of Letters Patent No. 457,473, dated August 11, 1891.

Application filed December 26, 1890. Serial No. 375,812. (No model.)

To all whom it may concern:

Be it known that I, NEWELL P. COWELL, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Car-Buffers; 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 pertains to make and use the same.

My invention relates to improvements in car-buffers; and it consists in certain features of construction and in combination of parts hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan, partly in section. Fig. 2 is an end elevation, partly in section.

A represents the buffer, the same having a broad flat face and having a pair of rearwardly-projecting arms A′ A′ usually cast integral with the buffer, these arms being adapted to embrace the car-sill B with an easy fit, these arms having slots a' for receiving the pin or bolt b that secures the buffer to the sill. Hence the buffer, by reason of these slots, can play endwise a limited distance. The rear ends of arms A′ at a are curved on a radius from pin b with the latter, say about midway of slots a'. These curved faces a engage a correspondingly-curved plate C, this plate being mounted on rod D. The hubs c of plate C and rod D extend with easy fits through holes in blocks E E′.

F is a strong spring coiled around rod D, this spring bearing against block E′ and against hub c or against an intervening washer c'. Rod D has a cross pin or key d next rearward of block E′, whereby the spring is held strained sufficiently for the purpose. Blocks E E′ are secured to the timbers G G of the car-frame. With such construction the buffer may turn more or less on pin b—as, for instance, in passing curves of the track—and this, too, without cramping the buffer or in any way interfering with the spring-backing of the buffer just described.

In order that the buffer when not engaged should always be in position for fairly engaging an opposing buffer, I provide springs H H, mounted on eyebolts h h, these springs bearing against the outside of timbers G G, as shown, and bolts h h, extending between arms A′ A′, to which they are respectively secured by means of vertical pivotal pins a^2 a^2, these pins extending through a vertical hole in the arms and through the eyes of bolts h h, and the slots in timbers G G through which the eyebolts pass are long enough to allow these bolts to vibrate so as to accommodate the end movement of the buffer, and in so doing springs H H simply rock on their seats. With the rocking of the buffer one spring H is compressed and the other spring H is elongated. Hence when there is no pressure on the buffer these springs in regaining their equilibrium return the buffer to its normal position, whereby it is adapted to fairly receive the engagement of an opposing buffer. With the construction shown the mutually-engaging curved faces of the buffer-arms and plates C constitute a lateral joint, whereby the buffer may rock laterally independent of the spring-backing mechanism, and hence the rocking of the buffer does not disturb or interfere with the operation of such spring-backing. For instance, on vestibule-cars the buffers are sometimes as long as the width of the passage-way through the vestibule—say three or four feet, more or less—and with such long buffers springs H H, acting as they do on a short leverage, would have to be very strong to actuate the buffer, and it would bring great lateral strain to bear on the axial pin or bolt of the buffer, and thereby cause much friction and wear. I therefore employ springs I, located, as shown, near the extremes of the buffer, springs I being interposed between the buffer and car-sill B. I provide metal sockets J for seating the rear end of these springs, and these sockets should extend some distance into the car-sill to give the requisite length to these springs. A convenient means of securing the front end of these springs is by means of lug a^3, projecting rearward from the buffer, these lugs being adapted to fit inside the springs. With the two sets of springs H H and I I distributed, as shown, there is little or no lateral strain brought to bear on the axial pin of the buffer. With small buffers members J J would come opposite the joints of the draft-timbers G G with the car-sill B, and this would be objectionable, because it would weaken the car-sill too much to insert the socket at these points. Hence

with small buffers I do not see how springs I I could well be employed, and for the small and medium sized buffers springs H H have proved entirely satisfactory. With the largest buffers I prefer both sets of springs for the reasons aforesaid; but if for any reason the two sets of springs were not considered desirable I would prefer springs I I for the large buffers, and when these latter springs were employed, their action, so far as their limited strength goes, co-operates with the action of spring F in sustaining the blow in coupling the cars.

What I claim is—

1. The combination, with a buffer, of a spring-actuated backing-plate for such buffer, the union of the two members constituting a lateral joint whereby the buffer may rock laterally independent of the backing mechanism, substantially as set forth.

2. A buffer having arms adapted to embrace the car-sill, and a spring-actuated backing-plate engaging such buffer-arms, the backing-plate and buffer-arms having correspondingly-curved and mutually-engaging faces constituting a lateral joint, substantially as set forth.

3. The combination, with a buffer loosely and pivotally connected with a car-sill or other support and capable of rocking laterally and a yieldingly-supported backing-plate for such buffer, of springs or equivalent devices connecting the buffer with some part of its support, whereby to return the buffer to its normal position, substantially as set forth.

4. The combination, with a buffer adapted to rock laterally and a yieldingly-supported backing-plate for such buffer, of springs or equivalent devices interposed between the buffer and its support and adapted to return the buffer to its normal position, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 14th day of November, 1890.

NEWELL P. COWELL.

Witnesses:

C. H. DORER,

WARD HOOVER.