(No Model.)

A. GALLINANT.

CAR BUFFER.

No. 278,328. Patented May 29, 1883.

Fig. 1.

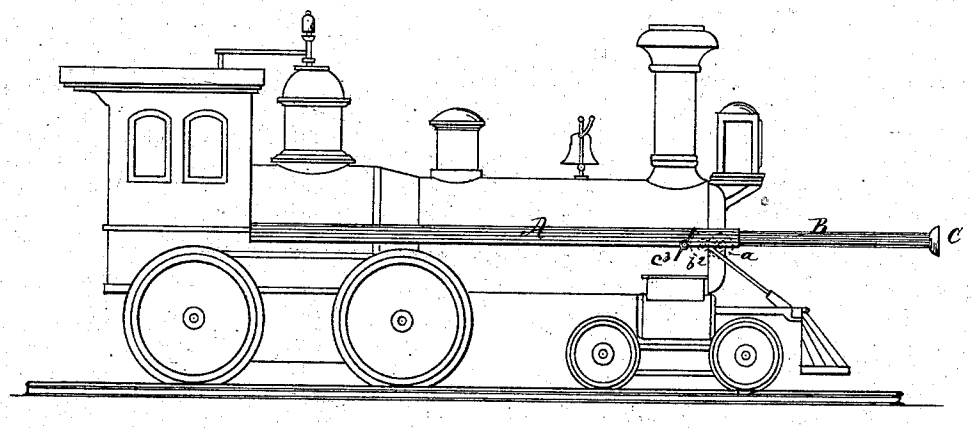


Fig. 2.

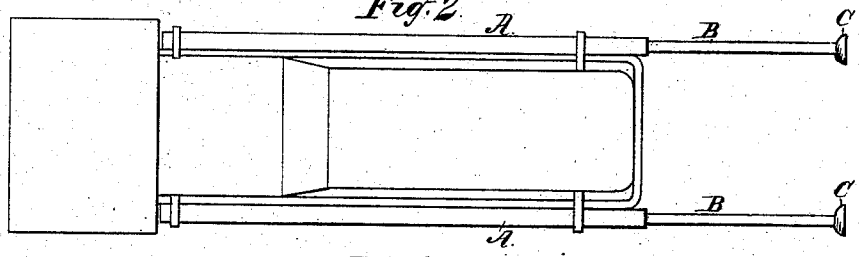


Fig. 3.

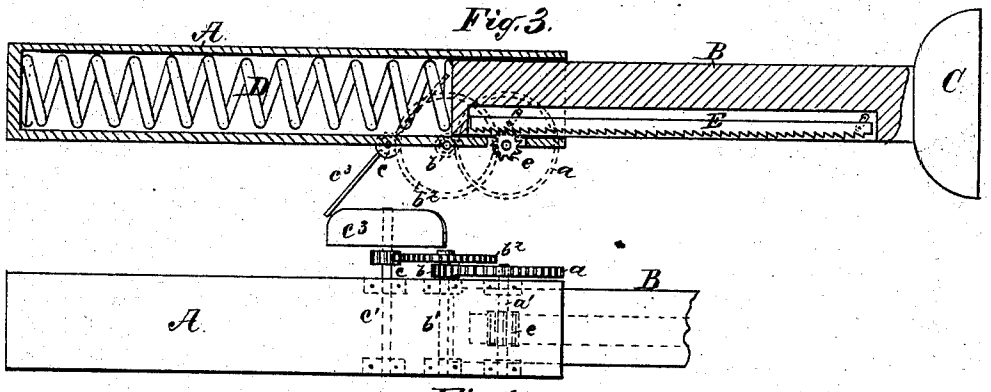


Fig. 4.

Witnesses:
Henry Sibley
A. J. Vernilya

Inventor
Adolphe Gallinant
per Charles M. Stafford
his atty

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UNITED STATES PATENT OFFICE.

ADOLPHE GALLINANT, OF ROSLYN, NEW YORK.

CAR-BUFFER.

SPECIFICATION forming part of Letters Patent No. 278,328, dated May 29, 1883.

Application filed February 28, 1883. (No model.)

To all whom it may concern:

Be it known that I, ADOLPHE GALLINANT, a citizen of France, but for past eight years a resident of the United States, and now residing at Roslyn, in the county of Queens and State of New York, have invented a new and useful Improvement in Buffers for Railway-Cars, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, and the letters and figures marked thereon.

My invention relates to certain new and useful improvements in buffers for railway-cars, which may, however, be used to relieve the shock of colliding bodies generally, and is not limited to its use on railway-cars alone.

Previous to my invention various forms of buffers have been devised, in which have been employed rubber or metal springs so arranged as to contract or yield when the forward end of the buffer-rod met a decided force or resistance, and thus deaden the shock or jar incident to the meeting of the two objects; but none of such contrivances have, so far as my knowledge extends, been provided with means whereby, after contraction of the spring and removal of the resistance or opposing force, the expansion of the spring, and the consequent projection of the buffer-rod to its first position, could take place gradually or slowly, and thus prevent accident as well as derangement of the parts of the apparatus. This is one of the objects of my invention, which consists, primarily, in the combination, with a buffer-bar and a spring adapted to be compressed thereby, of a regulator mechanism for insuring a slow and steady return of the buffer-bar to its normal position, as will be hereinafter more particularly described; and my invention further consists in certain features of construction of the parts, and in various combinations of the elements, which will also be hereinafter fully described, and specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a side view of a railway-locomotive having my invention applied thereto. Fig. 2 is a top view thereof, omitting certain portions of the locomotive. Fig. 3 is a longitudinal central section of my novel buffer mechanism detached and made on an enlarged scale; and Fig. 4 is a top view of portion of Fig. 3, showing particularly the governor or regulating mechanism.

In the several views the same parts will be found designated by the same letters of reference.

A is a housing, casing, or tube fixed to each side of a railway-locomotive, within which casing the buffer-rod B (provided at its forward end with a disk or head, C, is adapted to work.

In rear of the buffer-rod, and contained within the housing or holder, is a strong spiral spring, D, whose normal position is in a state of expansion, and resting against the inner end of the buffer rod or bar. The buffer-bar B is cut out or recessed on its under side, and a toothed bar or rack, E, is pivoted or suspended therein, so as to allow vertical play or movement; and to the lower portion of the tube A is secured a motion regulating or retarding mechanism, composed of a spur-wheel, a, which engages with a pinion, b, fast on a shaft, b', to the outer end of which latter is secured another spur-wheel, b^2, having a greater number of teeth than the spur a, which spur-wheel b^2 meshes with a small pinion, c, fixed to a shaft, c', to the prolonged end of which is attached a fan or series of vanes, c^3.

About centrally of the shaft a', carrying the spur-wheel a, is a toothed wheel, e, which engages within the casing with the rack E of the buffer-bar.

The teeth of both the wheel and the rack are cut inclinedly, so that when the buffer-bar, and with it the rack, is pushed into the casing, the teeth of the rack will slide or ride easily over the teeth of the wheel e without engaging with and revolving it, the rack, by reason of its mode of suspension, bobbing up and down as its teeth pass over the teeth of wheel e. When the buffer-bar is pulled or forced out, the rack and wheel teeth then engage or mesh, and motion is communicated to the train of gearing and the fly is revolved, the effect of all of which is the slow and easy projection of the buffer-bar.

Having described the construction and application of the various parts of my novel buffer, I shall now state the general operation of the same.

Supposing all the parts to be in their regular positions, as in the several figures of the drawings, any obstruction or force met by the

disk C at the head of the buffer-bar will drive the latter and its contained rack farther into the casing, against the spring D therein, compressing the latter proportionately, and thus relieving the shock of the collision, as evident and well understood. If now the force which holds the spring under compression be suddenly removed, the buffer-bar will not be quickly shot forward by the expansion of the spring, on account of the immediate engagement of the teeth of the rack with those of the wheel *e*, which, as before described, being fast on the same shaft as the spur-wheel *a*, must drive the latter and the rest of the system of gearing as well as the fan or fly, and thus the propulsion of the buffer-bar by the spring is made slow and regular.

What I claim as of my invention, and desire to secure by Letters Patent, is—

1. The combination, with a housing and its spring, of a buffer-bar provided with a rack which engages with a regulating mechanism, substantially as and for the purpose set forth.

2. The combination, with a housing and its spring and a regulating mechanism, of a buffer-bar provided with a rack capable of vertical play, as and for the purpose set forth.

3. The combination, with a housing and its spring and a regulating mechanism, an element of which is a toothed wheel, of a buffer-bar provided with a rack capable of vertical play, and passing inoperatively over the wheel as it enters the housing, but engaging therewith as it returns.

Witness my hand this 16th day of February, 1883.

ADOLPHE GALLINANT.

In presence of—
WM. A. COPP,
CHARLES F. BLISS.