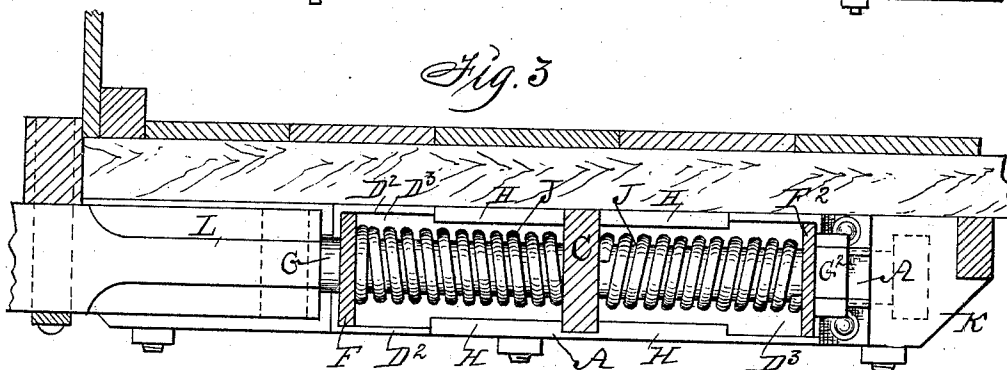
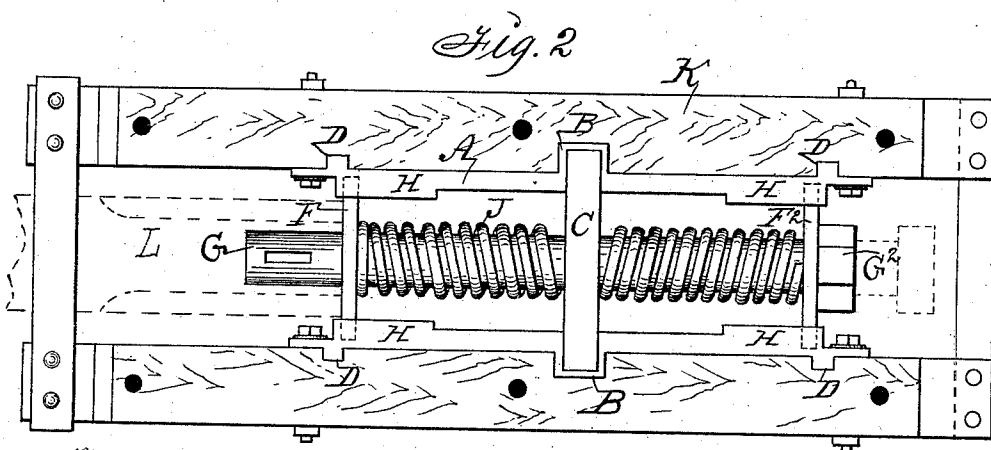
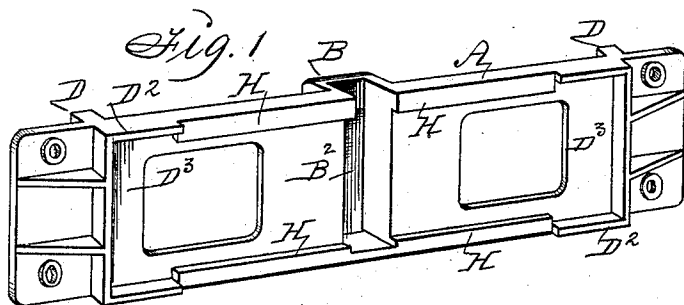


(No Model.)

S. H. SPRINGER.
BUFFER FOR RAILWAY CARS.

No. 463,296.

Patented Nov. 17, 1891.



Witnesses:

W. B. Smith.
R. C. Orwig.

Inventor:

Stephen H. Springer,
By Thomas G. Orwig, Atty.

UNITED STATES PATENT OFFICE.

STEPHEN H. SPRINGER, OF DES MOINES, IOWA, ASSIGNOR TO THE SPRINGER
AUTOMATIC CAR COUPLER COMPANY, OF SAME PLACE.

BUFFER FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 463,296, dated November 17, 1891.

Application filed December 5, 1890. Serial No. 373,652. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN H. SPRINGER, a citizen of the United States of America, and a resident of Des Moines, in the county of Polk and State of Iowa, have invented a new and useful Buffer for Railway-Cars, of which the following is a specification.

My invention consists in the construction of a buffer composed of fixed metal bearings, a reciprocating bar, sliding cross-heads, a removable abutment, and coil-springs, and in combining the same with a car and draw-bar, as hereinafter set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a metal bearing adapted to be fixed to a wooden frame. Fig. 2 is a bottom view of a wooden frame to which a pair of the metal bearings is fixed as required to support the sliding cross-heads, the abutment, and a reciprocating bar and coil-springs on the bar to produce a buffer adapted to be combined with a car and a draw-bar. Fig. 3 is a longitudinal sectional view of the buffer attached to a section of the bottom and end portion of a car and connected with a draw-bar as required for practical use.

A represents one of my metal bearings cast complete in one piece, and A² a mating piece. B is a transverse enlargement at the back and center, adapted to fit into a corresponding cavity or transverse groove formed in the wooden frame to which the metal bearing is to be fixed. This enlargement produces a chamber B² on the inside, adapted to admit and retain a removable metal block or plate C, adapted to serve as an abutment for the springs that are designed to prevent the jarring and concussions incident to the pushing and pulling of draw-bars in operating a train.

D are ribs across the end portions of the backs of the bearings A and A², adapted to enter corresponding grooves in the wood to aid in securely fastening the metal bearings to the wooden frame. The ends of the bearings are perforated to admit the passage of bolts, and D² near the ends are flanges that produce chambers D³, adapted to retain and guide the ends of sliding cross-heads F and F², that have central openings through which a reciprocating bar G is extended. Said bar

is also extended through a coinciding opening in the bar or abutment C.

G² is a head on the rear end of the bar G.

H are enlargements on the edges and insides of the metal bearings, that restrict the inward motions of the sliding cross-heads F and the compression of the coil-springs J, placed on the reciprocating bar G and between the cross-heads F and abutment C.

K are the parallel side pieces of the wooden frame, adapted to be fixed to a car, as shown in Fig. 3, by means of bolts or in any suitable way. The metal cross-bar at the front end of the frame is bent upward at right angles, so that its end portions can be fixed to a car to aid in securing the complete buffer to the car, and also to serve as a support for the draw-bar L, that is detachably connected with the front end of the reciprocating bar G by extending the end of the bar G into a corresponding bore in the rear end of the draw-bar L, and then passing a key through coinciding openings in the two parts, or in any other suitable way as required to connect the two bars so that they will move jointly in their reciprocating longitudinal motions.

When two cars that are equipped with my buffers come together and the force of their impact is transmitted to the draw-bars L and the reciprocating bar G, the rear ends of the draw-bars L will press the sliding cross-heads F rearward, the coil-springs in front of the central abutment will resist the force, and the abutments will support the springs as they are thus compressed to prevent jarring and concussion, and when the pressure is relaxed the springs will resume their normal position, and in so doing move the cross-head F, the draw-bar L, and the reciprocating bar G to their former positions, and when the cars are moved in opposite directions, or one is moved away from the other, so as to pull outward on one of the draw-bars L, such force will be transmitted to the reciprocating bar G, connected therewith, and the head G² will press the sliding cross-head F² forward and compress the spring interposed between the said cross-head and the central abutment C, as required to prevent jarring and concussion by a jerking or pulling motion to which the draw-bar may be subjected, and when the pulling force

is relaxed the power stored in the spring will replace the cross-head F^2 and also the draw-bar L and reciprocating bar G to their former positions. It is therefore obvious that when
5 two cars are coupled together and the draw-bar of one car is subjected to a pushing force and the draw-bar of the other car to a pulling force the rearward motion of the one draw-bar will be met by the spring in the rear of
10 the said abutment and the separate buffers on the two distinct cars reciprocally operated to overcome any strain or jerk in the movements of the cars that might otherwise cause jarring, concussion, or damage to the couplings, cars, and train.

I claim as my invention—

1. A metal bearing for car-buffers, consisting of an elongated plate having a transverse projection on its back and center, forming an
20 open chamber adapted to receive and retain the end of a cross-bar or plate, flanges at the end portion of its front or inside face to produce chambers adapted to receive ends of sliding cross-heads, and perforations in its
25 ends to admit the passage of bolts, for the purposes stated.

2. A metal bearing for a car-buffer, consisting of an oblong metal plate having an extension B on its back and central portion,

producing a chamber B^2 , ribs D at its back 30 and end portions, enlargements H on its edges, and perforations in its ends, substantially as shown and described, for the purposes stated.

3. A car-buffer comprising mating metal bearings fixed to the inside faces of parallel 35 bars, each of said bearings having an elongated chamber extending across its central portion, a chamber at each end adapted to receive the ends of sliding cross-heads, and enlargements or shoulders to restrict the inward motions of said cross-heads, having central openings and their ends extended into said end chambers, a plate or abutment having a central opening and its ends in the central chambers of the mating metal plates or 45 bearings, a bar having a head at its rear end extended through the central openings in the sliding cross-heads and the abutment, and coil-springs placed upon the said bar and between the said cross-heads and abutment, in 50 combination with a car and draw-bar, to operate in the manner set forth, for the purposes stated.

STEPHEN H. SPRINGER.

Witnesses:

R. H. ORWIG,
THOMAS G. ORWIG.