

(No Model.)

R. E. RICKER.
CAR BUFFER.

No. 304,668.

Patented Sept. 2, 1884.

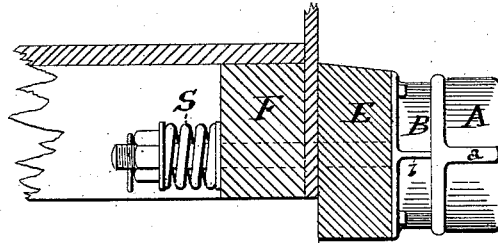


Fig 1

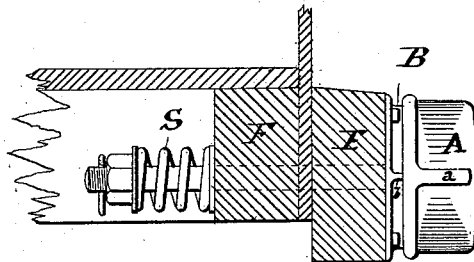


Fig 2

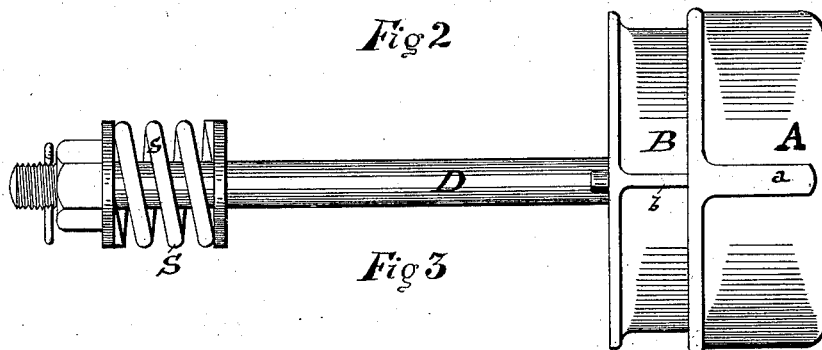


Fig 3

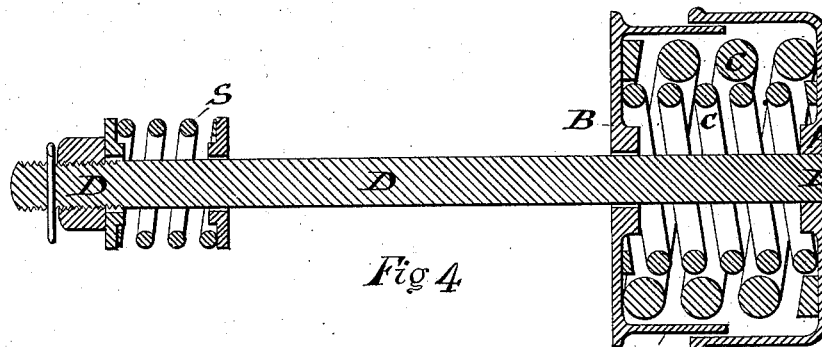


Fig 4

Witnesses
Francis L. Gross
Samuel Lee

Inventor
R. E. Ricker
by S. D. J. Law.
Attorney

UNITED STATES PATENT OFFICE.

ROBERT E. RICKER, OF TROY, NEW YORK.

CAR-BUFFER.

SPECIFICATION forming part of Letters Patent No. 304,668, dated September 2, 1884.

Application filed December 29, 1883. (No model.)

To all whom it may concern:

Be it known that I, ROBERT E. RICKER, residing in Troy, in the State of New York, have invented an Improvement in Car-Buffers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making a part of this specification.

My invention is an improvement on the bumpers or buffers used on railway-cars to lessen the shock when coupling the train, or whenever two cars come together.

In the drawings, in which like letters indicate like parts, Figure 1 is a view of the complete buffer secured to the frame of the car. Fig. 2 is the same as Fig. 1, showing the buffer compressed. Fig. 3 is an enlarged detached view of the buffer, showing the tail-bolts and the spring on the end of the same. Fig. 4 is a sectional view of Fig. 3.

My improved buffer consists of a box or case containing the buffer-spring, formed in two parts or sections, so that one fits over and slides upon the other. One of these sections is permanently secured to the buffer-block or dead-wood at the end of the car, as is seen at B, Figs. 1 and 2, and is therefore fixed or immovable. The other or outer section, A, is movable, and slides back and forth on or over the fixed section B as it is compressed in buffing, or is forced out by the spring within. Within this box or case is the buffer-spring C, which may be of any kind desired, but is preferably a coiled spring, and can be secured to the inside of the case in any convenient manner. This spring receives the shock of buffing, and, when the pressure is removed from the buffer, forces out the movable section A to its former position. To hold the two sections of the box together so that they cannot separate from each other under the action of the buffer-spring, a tail-bolt (shown at D) is riveted or fastened to the outer or movable section, A, and, extending through a hole in the bottom of the fixed section B, passes through the buffer-block E and end sill, F, on the car, as is shown in Figs. 1 and 2. On the end of the bolt, where it extends beyond the end sill, is a spring, S, which is confined between the sill and a nut and washer on the end of the bolt in such a

manner that the tail-bolt will freely slide through the same.

As will be understood from the drawings, the tail-bolt moves with the movable section A of the buffer-case. When the buffer is compressed, the bolt is forced back, and the spring S on the end is allowed to expand, as is seen in Fig. 2. When the pressure on the buffer is removed, the section A is extended by the buffer-spring C within the case, and the bolt is drawn forward and compresses the spring S between the end sill and the nut. The tail-bolt, and consequently the section A, can move forward only a certain distance, and the arrangement of the bolt and spring S is such that the section A can never move out so far as to separate from the fixed section B. The buffer case or box is therefore always held together in position. As the spring S is not fastened, but loosely rests on the tail-bolt D, it exerts no force on the bolt when the latter is pushed back in buffing, but merely expands as the nut moves away from the end sill. It therefore performs no office in buffing, its only function being to counteract the tension of the buffer-spring C and prevent the section A from being extended too far.

If it is thought desirable, one end of the spring S may be fastened, the other end being left free, without changing the nature of its action, as one end may be attached to the end sill, F, and the other left free on the bolt; or the opposite end may be secured to the nut on the bolt and the other end left free. In neither of these cases would the spring exert any action on the backward motion of the tail-bolt or act as a buffer-spring. With this spring the movement of the buffer back and forth is rendered steady, and all jerks and jars are avoided, and its operation is more satisfactory.

The outer section, A, of the case is formed or provided with one or more grooves or recesses, *a*, which slide over corresponding ridges or lugs, *b*, on the fixed section B. These are designed to prevent the section A turning on the section B, and also form the surfaces on which the outer section slides, and by which it is kept in position.

One or more springs may be placed within

the buffer-case A B, and they may be arranged as shown in the drawings, or in any suitable manner, their number and strength depending upon the force or pressure to which the buffer
5 is to be subjected.

The buffer-case, as shown in the drawings, is round, and the outer face of the movable section is curved or convex. This allows the buffers on opposite cars, when pressed to-
10 gether, to move on one another more freely with the motion of the train.

What I claim is—

A buffer for cars, consisting of the casings A B, telescoping within each other and enclosing a buffer-spring, in combination with 15 the tail-bolt D and tail-bolt spring S, constructed substantially as described, and for the purposes set forth.

R. E. RICKER.

Witnesses:

SAMUEL LEA,
FRANCIS L. GROSS.