

T. L. McKEEN.
CAR BUFFING DEVICE.
APPLICATION FILED NOV. 29, 1909.

1,043,335.

Patented Nov. 5, 1912.

2 SHEETS—SHEET 1.

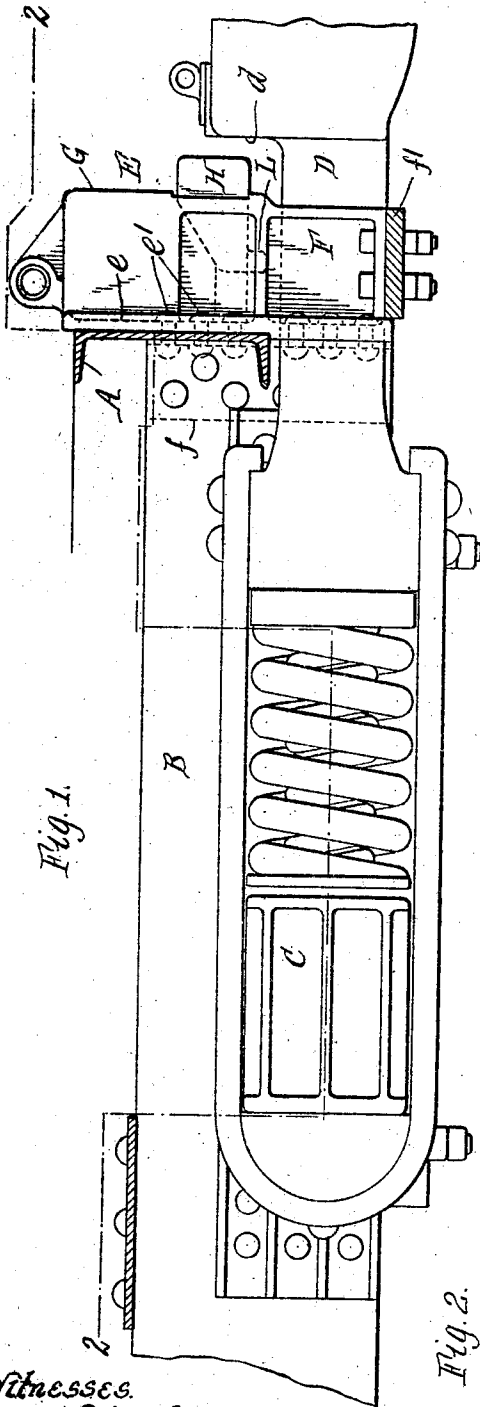


Fig. 1.

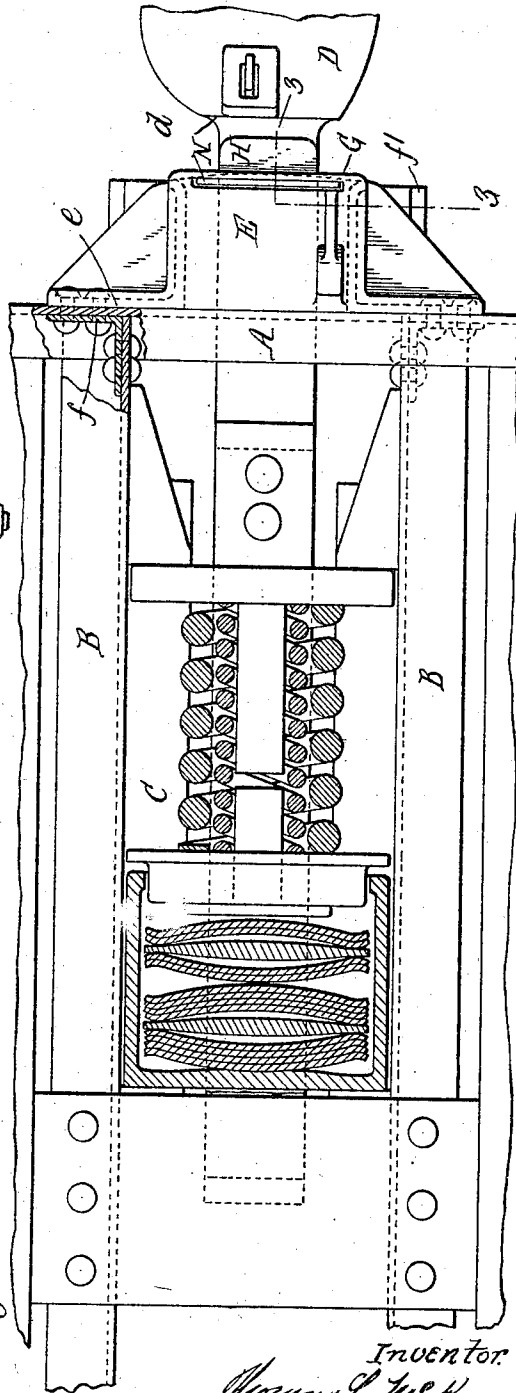


Fig. 2.

Witnesses.
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2 SHEETS—SHEET 2.

Fig. 3.

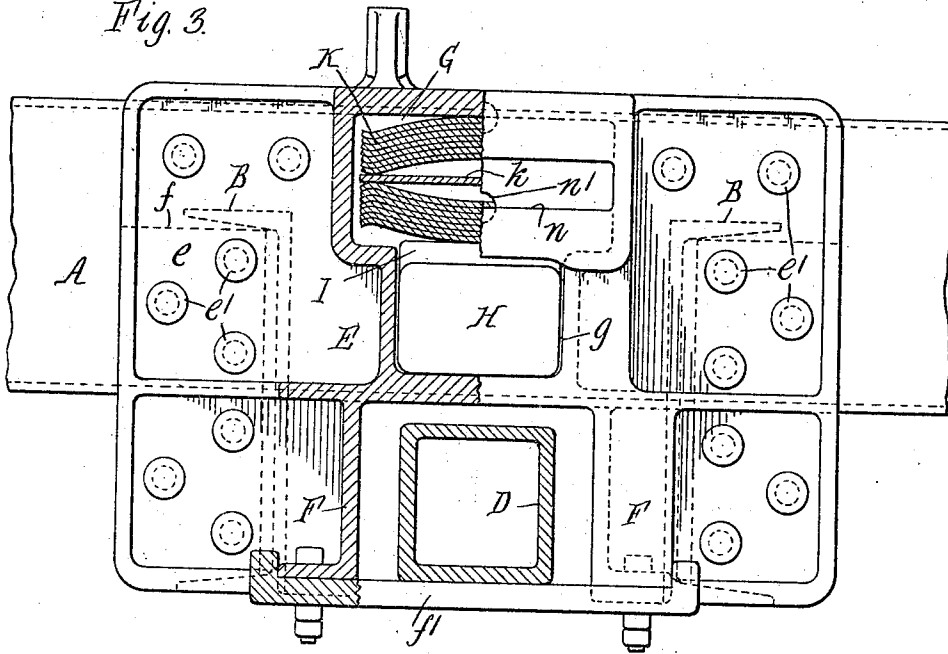
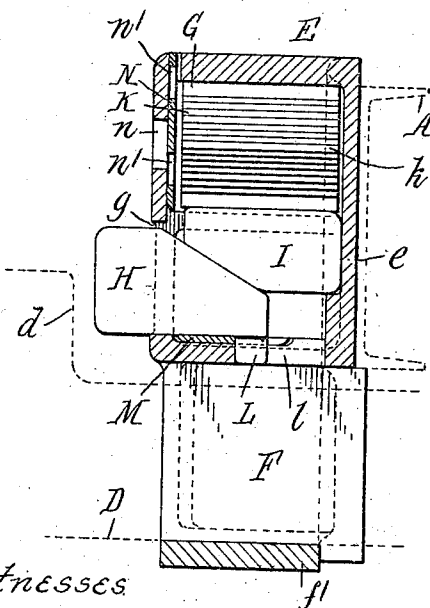
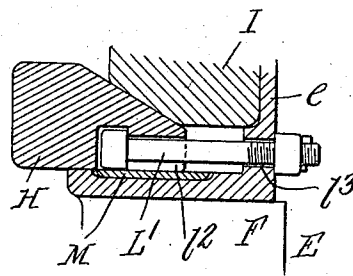


Fig. 4.



Witnesses
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Fig. 5.



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UNITED STATES PATENT OFFICE.

THOMAS L. McKEEN, OF EASTON, PENNSYLVANIA.

CAR-BUFFING DEVICE.

1,043,335.

Specification of Letters Patent.

Patented Nov. 5, 1912.

Application filed November 29, 1909. Serial No. 530,444.

To all whom it may concern:

Be it known that I, THOMAS L. McKEEN, a citizen of the United States, residing at Easton, in the county of Northampton and State of Pennsylvania, have invented a new and useful Improvement in Car-Buffing Devices, of which the following is a specification.

This invention relates more particularly to improvements in friction buffing devices intended for application to the end sills of freight cars for supplementing the buffing action of the draft gears.

One object of this invention is to simplify and improve the construction of friction buffing devices which are adapted to be secured on the end sills of cars in place of the ordinary solid striking plate to take the excessive strain off the draft rigging and sills and to cushion the blows which, when received on the solid striking plate, often prove injurious to the cars.

Other objects of the invention are to construct this device so that it will be compact and inexpensive and will consist of the minimum number of parts but will nevertheless offer a great resistance and allow a long travel of the drawbar; and also to so arrange the parts that they may be easily assembled or taken apart while the buffer is mounted on the car.

In the accompanying drawings, consisting of two sheets: Figure 1 is a fragmentary longitudinal sectional elevation of a freight car provided with a buffing device embodying this invention. Fig. 2 is a plan view thereof, partly in section, on line 2—2, Fig. 1. Fig. 3 is an elevation, partly in section, in line 3—3, Fig. 2, of the buffing device. Fig. 4 is a central longitudinal sectional elevation thereof. Fig. 5 is a fragmentary sectional elevation of a buffing device of slightly modified construction.

Like reference characters refer to like parts in the several figures.

Referring first to Figs. 1 and 2, A represents an end sill of a freight car and B the draft sills to which the draft gear C is attached. The framework of the car shown in the drawings is of a type that is commonly used but any form of car construction and any type of draft gear may be used in connection with this buffing device. A drawbar D or coupler of any usual or

suitable construction may be employed which has a rearwardly facing projection or shoulder *d* above the drawbar for engaging and operating the movable head of the buffing device. This projection is preferably formed by the rear end of the drawhead. The inner end of the drawbar, as usual, is connected to the draft gear. The friction buffing mechanism embodying this invention is contained within a hollow striking plate, box or casing E which is similar in its general shape and dimensions to the ordinary solid striking plate and is secured in a similar manner to the car end sill. The striking plate E, as shown, is preferably made in one piece, having a vertical web, wall, or plate *e* which is connected to the end sill of the car by rivets *e'* or in any suitable manner. Two brackets F F depend below the end sill from each side of the striking plate and are connected to the center or draft sills of the car in any suitable manner, angle plates *f* being shown for this purpose in this particular case, which are riveted to the draft sills and the brackets F. The drawbar is confined laterally and guided in its longitudinal movement by these two brackets, and is supported by a bar *f'* which joins the lower ends of the brackets.

The striking plate has a middle, hollow portion or buffer chamber G in which are contained the friction devices and which has an opening *g* in its outer wall through which a buffer block or wedge H projects beyond the buffer chamber. This wedge block is adapted to move longitudinally of the car in the bottom of the buffer chamber G and is so located that the shoulder *d* of the coupler will engage with the outer face of the wedge during the inward movement of the coupler and force it inwardly. The buffer block or wedge H has an upper inclined face which bears against a correspondingly inclined face on a friction block I arranged in the buffer chamber above the wedge, so that during the inward movement of the wedge H, the friction block I is moved vertically upward in the buffer chamber. A spring K, arranged between the upper face of the friction block I and the upper wall of the buffer chamber G, presses the friction block against the inclined face of the wedge H and yieldingly resists the upward movement of the friction block when the wedge is moved in-

wardly. The spring K preferably consists of two sets of bowed spring plates or leaves arranged with their concave faces toward each other and their opposite convex faces bearing respectively against the upper face of the friction block and the top wall of the buffer chamber G. By using leaf springs instead of coil springs, a much greater resistance capacity is obtained for the same amount of space, and by arranging the spring leaves in two sets, with their concave faces adjacent, sufficient movement of the friction block is permitted to make the inclination of the faces of the friction and wedge blocks great enough to enable a long travel of the wedge and to insure the releasing of the wedge, thereby obviating the necessity for the coil release spring, which is ordinarily used. A shim *k* is placed between the opposite sets of the spring plates which may be of any required thickness to give the leaf springs the proper tension.

Suitable means are employed for limiting the outward movement of the buffer block or wedge by the springs to prevent its escape through the opening *g* in the outer wall of the buffer chamber. In the construction shown in Figs. 1-4, this is accomplished by forming the wedge with an integral projection L which extends downwardly from the inner end of the wedge through a slot *l* in the bottom of the buffer chamber, in which the projection is adapted to slide during the movements of the wedge.

In the modified construction shown in Fig. 5, a bolt L' is used to limit the outward movement of the wedge block instead of the integral projection L. The head and a portion of the shank of the bolt are located in a cavity *l*² formed in the lower surface of the wedge block H, and the bolt extends rearwardly below the friction block I and loosely through a hole *l*³ in the inner or rear wall of the buffer chamber G, being provided at its rear end with a keyed nut or other stop device. With this construction no slot is required in the bottom wall of the chamber. M represents a hardened wear plate which is preferably placed in the bottom of the buffer chamber for the wedge to slide on, so as to prevent the wedge from wearing the bottom of the buffer chamber. This plate can be readily replaced at small expense when worn out. When this plate is used in connection with a wedge having a depending projection, a slot corresponding to the slot in the bottom of the buffer chamber is provided in the wear plate. N represents a plate which passes through a slot in the top wall of the buffer chamber G between the edges of the leaf springs and the outer wall of the chamber. When in place, this plate covers the hole *n* in the outer wall of the buffing chamber, through which the shim and leaf springs may be placed into

or removed from the buffer chamber, and it also serves to take the wear off of the outer wall. Holes *n'* are shown in the plate into which an implement can be inserted for prying the plate upwardly.

The buffing device of either construction shown is assembled in the following manner: The friction block I is first inserted through the opening *g* in the outer wall of the buffer chamber and is raised to permit the buffer block to be placed under it in position in the chamber. The springs and the shim are then placed into the buffing chamber through the opening *n* in its outer wall, after which the plate N is lowered to cover the opening. If a spring leaf breaks, it is only necessary to raise the plate and replace the broken spring by a new one.

The buffing device described consists of the minimum number of parts and occupies very little space. By arranging the leaf springs as shown, horizontally and with their length crosswise of the car between the top wall of the buffer chamber and the vertically movable friction block, the distance that the buffing device extends beyond the end of the car is no greater than that of the ordinary striking plate and much less than it would be in a construction in which the friction block is arranged to move horizontally, longitudinally of the car, while the width of the buffer chamber is much less than it would be if the springs were arranged on opposite sides of the wedge. Hence it is possible, with the construction described, to produce a buffing device which requires no more space, either lengthwise or crosswise of the car, than the ordinary solid striking plate, and furthermore, the buffing device is of no greater height than the ordinary striking plate.

I claim as my invention:

1. In a buffing device for cars, the combination of a striking plate adapted to be secured to the end sill of a car and having a buffer chamber, a wedge adapted to be moved inwardly in said chamber by the draw-bar, a friction block in said chamber adapted to be moved vertically by said wedge, a leaf spring horizontally arranged in said chamber above said friction block for opposing the movement of said friction block, and means for retaining said wedge in place in the chamber, substantially as set forth.

2. In a buffing device for cars, the combination of a striking plate adapted to be secured to the end sill of a car and having a buffer chamber, a wedge adapted to be moved inwardly in said chamber by the drawbar, a friction block in said chamber adapted to be moved vertically by said wedge, a spring in said chamber above said friction block for opposing the movement of said friction block, and means connected

to said wedge for retaining the wedge in place in the chamber, substantially as set forth.

3. In a buffing device for cars, the combination of a casing adapted to be secured to a car and having a buffer chamber with a lower portion which is contracted in width and a wider upper portion, a wedge located in said lower portion and adapted to be moved inwardly in said chamber, a friction block in said chamber adapted to be moved vertically by said wedge, and a bowed leaf spring arranged lengthwise in the wide upper portion of said chamber for opposing the movement of said wedge, substantially as set forth.

4. In a buffing device for cars, the combination of a casing adapted to be secured to a car and having a buffer chamber, a wedge adapted to be moved inwardly in said chamber by the drawbar, a friction block in said chamber adapted to be moved vertically by said wedge, a leaf spring arranged in said chamber above the friction block with its length crosswise of the direction of the movement of the wedge for opposing the

movement of said friction block, and a removable plate which covers an opening in the outer wall of the buffer chamber opposite to the spring, substantially as set forth. 30

5. In a buffing device for cars, the combination of a striking plate adapted to be secured to the end sill of a car and provided with depending guide and supporting brackets for a drawbar and with a buffer chamber above said brackets, a wedge adapted to be moved inwardly in said chamber by the drawbar, a friction block in said chamber adapted to be moved vertically by said wedge, a spring in said chamber above said friction block for opposing the movement of said friction block, and means connected to said wedge for retaining the wedge in place in the chamber, substantially as set forth. 45

Witness my hand, this 19th day of November, 1909.

THOMAS L. McKEEN.

Witnesses:

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C. B. HORNBECK