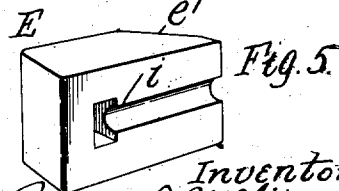
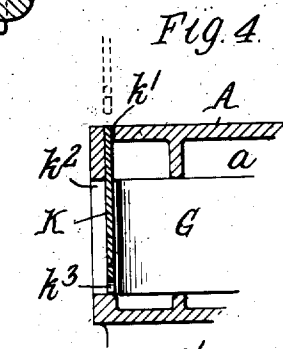
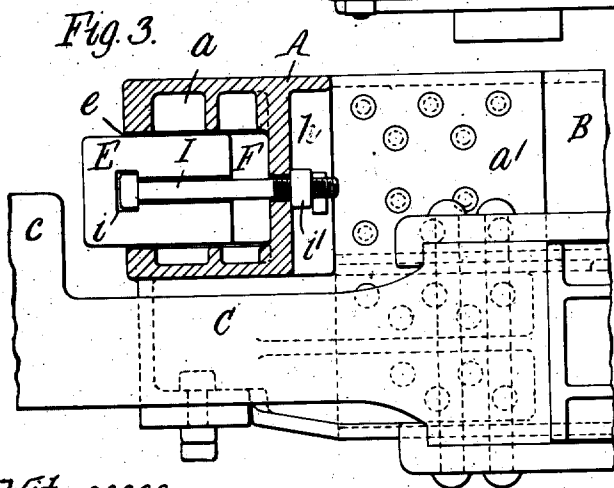
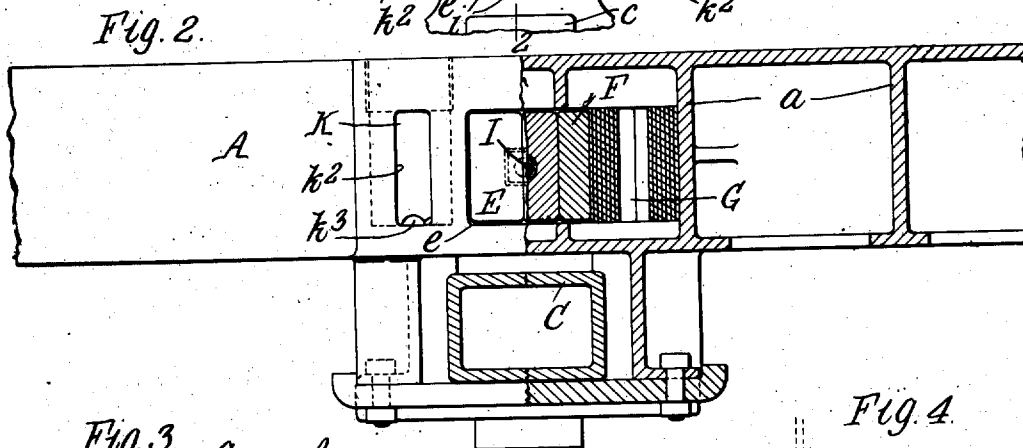
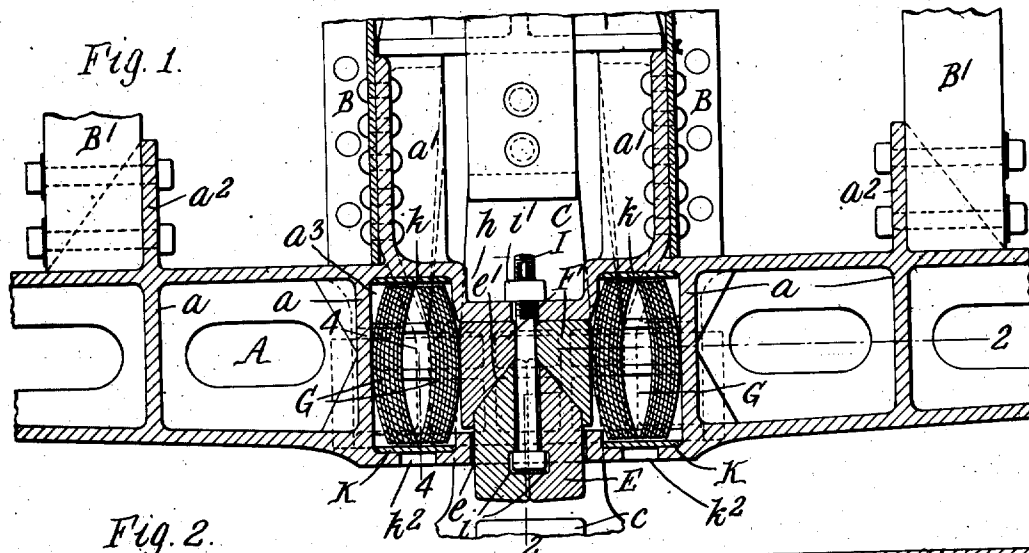


T. L. McKEEN.  
CAR BUFFING DEVICE.  
APPLICATION FILED AUG. 9, 1909.

Patented Feb. 6, 1912.

2 SHEETS—SHEET 1.

1,016,702.



Witnesses.  
A. G. Diamond.  
E. A. Volk.

Inventor.  
Thomas L. McKen  
By Wilhelm Fickert  
Attorneys.

1,016,702.

T. L. McKEEN.  
CAR BUFFING DEVICE.  
APPLICATION FILED AUG. 9, 1909.

Patented Feb. 6, 1912.  
2 SHEETS—SHEET 2.

Fig. 6.

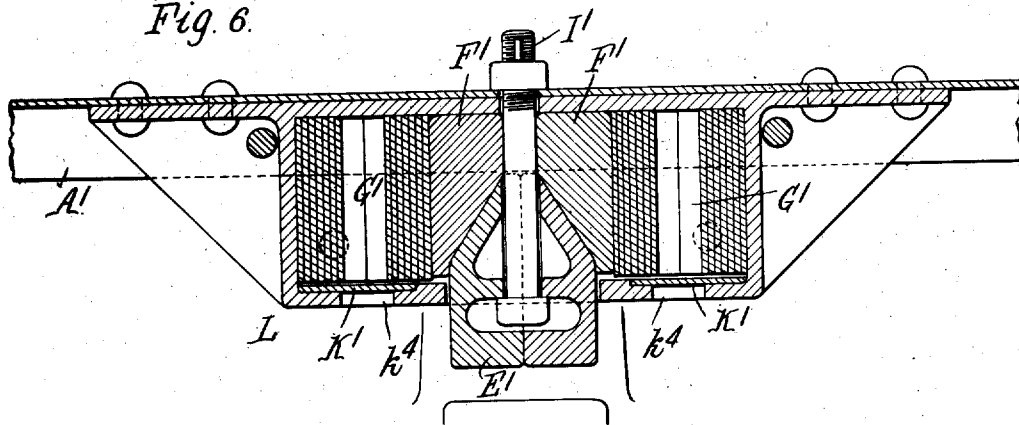


Fig. 7.

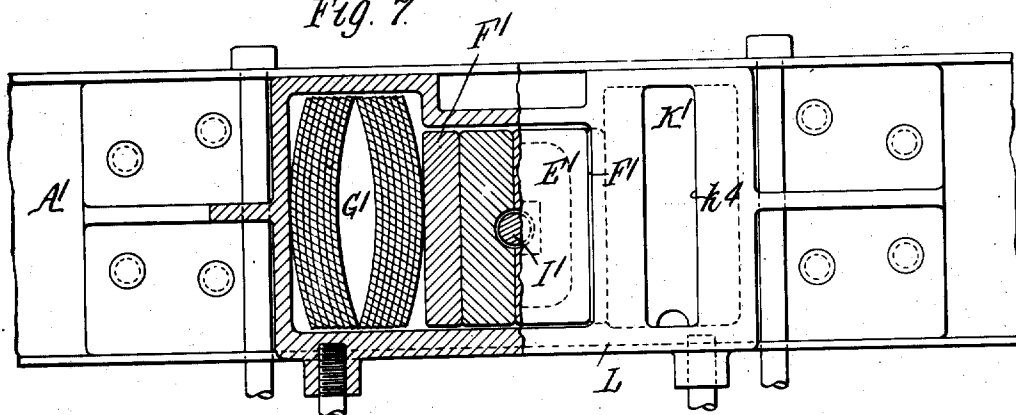
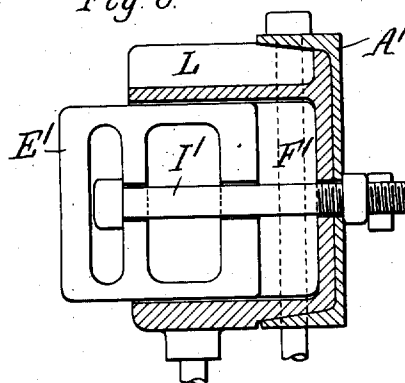


Fig. 8.



Witnesses.  
A. G. Diamond.  
E. A. Volk.

Inventor.  
Thomas R. McKeen  
by Wilhelm R. Parker & Hans  
Attorneys.

# UNITED STATES PATENT OFFICE.

THOMAS L. McKEEN, OF EASTON, PENNSYLVANIA.

## CAR BUFFING DEVICE.

1,016,702.

Specification of Letters Patent.

Patented Feb. 6, 1912.

Application filed August 9, 1909. Serial No. 511,879.

*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.

The primary object of the invention is to produce a strong and durable friction buffing device which is of compact construction adapting it to be located in a hollow cast end sill or striking block of the usual dimensions, but which nevertheless offers a great resistance and allows a long travel of the drawbar.

Another object of the invention is to construct the device so that it will be simple and inexpensive and permit the use of a forged steel wedge and obviate the necessity for a release spring, and also so that the parts can be readily placed in and removed from the end sill or striking block, and so that the springs can be examined and a broken spring replaced without disturbing the other parts.

In the accompanying drawings, consisting of two sheets: Figure 1 is a fragmentary sectional plan view of a freight car frame provided with a hollow end sill and buffing device embodying the invention. Fig. 2 is an elevation thereof, partly in section, in line 2-2, Fig. 1. Fig. 3 is a central longitudinal sectional elevation thereof. Fig. 4 is a section thereof in line 4-4, Fig. 1. Fig. 5 is a perspective view of one of the wedge blocks detached. Fig. 6 is a sectional plan view of a buffing device of slightly modified construction. Fig. 7 is an elevation, partly in section, thereof. Fig. 8 is a central longitudinal sectional elevation thereof.

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

Referring first to Figs. 1-5, A represents the end sill, B and B' respectively the center and intermediate longitudinal sills, and C the drawbar of a freight car. A hollow cast steel end sill is shown having vertical cross webs *a* at suitable intervals for

strengthening it, and provided with rearwardly extending brackets or portions *a'* and *a''* for the attachment of the longitudinal sills B and B'. The cross webs *a* at the middle of the end sill form between them a chamber *a'''* in which the buffing device, hereinafter described, is located and inclosed. The brackets *a'* also have parts depending below the end sill, the drawbar being confined laterally between these parts and supported by a cross-bar connecting them. The buffing device is, however, adapted to be employed in hollow end sills of other construction or in hollow striking blocks of the sort which are ordinarily secured to the end sills, when solid metal beams of channel or other shape are used for the sills. A drawbar C or coupler of any usual or suitable construction may be employed which has a rearwardly facing projection or shoulder *c* above the drawbar for engaging and operating the buffer. This projection is formed by the rear end of the usual drawhead. The inner end of the drawbar, as usual, is connected to a draft gear (not shown) which may be of any desired construction. E represents a buffer head or wedge which is arranged to move longitudinally of the car in the buffer chamber *a'''* of the end sill with its outer end projecting through an opening *e* in the front wall of the sill so as to be struck and shoved inwardly by the projection *c* of the drawhead when the latter is pushed inwardly in buffing. The buffer head or wedge preferably consists of two like halves of steel forgings having oppositely inclined faces *e'* at their inner ends which bear against and are adapted to slide on correspondingly inclined faces on friction blocks F which are arranged at opposite sides of the wedge E and are movable laterally or crosswise of the car in the buffer chamber *a'''*. Springs G, arranged between the friction blocks F and the end walls of the buffer chamber *a'''*, press the friction blocks against the friction faces of the wedge E and yieldingly resist the spreading of the friction blocks by the wedge when the latter is moved inwardly. Each spring G 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 outer sides of the friction blocks and the end walls of the

buffer chamber  $a^3$ . Leaf springs thus arranged have greater resisting capacity than coil springs of practicable size and occupy less space in the end sill lengthwise thereof and they bear centrally on the friction blocks, thus permitting the use of friction blocks of considerably less length than the width of an end sill of ordinary dimensions. In fact, the end sill can be, and preferably is recessed centrally at its rear side, as clearly shown at  $h$  in Figs. 1 and 3, thus affording a space into which the draft yoke can enter, and thereby allowing a longer outward movement of the drawbar than would be possible if the central portion of the end sill were of the usual width or had a rearwardly projecting portion at its middle. The described springs also allow a greater lateral movement of the friction blocks than if all of the leaves of each spring were arranged the same way, and consequently the pitch of the inclined faces of the wedge and friction blocks can be made great enough to insure the releasing of the wedge, thereby obviating the necessity for the usual coil release spring which would materially increase the dimensions of the buffing device and complicate its construction. I represents a bolt, the head and a portion of the shank of which are located in a recess formed by opposite cavities  $i$  in the inner sides of the two halves of the wedge E, and which extends rearwardly between the friction blocks and closely through a hole in the rear wall of the end sill, being provided at its rear end with a keyed nut  $j$  or other securing means. This bolt limits the outward movement of the wedge and prevents its escape from the opening  $e$  in the front wall of the buffer chamber, thereby retaining the wedge and friction blocks in place. By removing the nut the wedge and friction blocks are released and can be readily removed through the opening  $e$ . By constructing the wedge in halves and retaining it in place by the bolt, as described, the halves of the wedge can be made of steel forgings, which is desirable, and it is not necessary to provide cover plates or parts on the front of the end sill and which are apt to be broken off, to retain the parts in the buffer chamber. K  $k$  represent plates which are preferably placed between the ends of the springs G and the adjacent walls of the buffer chamber  $a^3$  to take the wear off of these walls. The wear plate K at the front or outer end of each spring is removable through a slot  $k'$  in the top of the sill and, when in place, covers an opening  $k^2$  in the front wall of the buffer chamber opposite the spring. By raising this plate K the spring can be seen and a broken leaf or leaves can be replaced through the opening  $k^2$  without disturbing the other parts of the buffer. Notches  $k^3$

are shown in the lower ends of these plates K in which an implement can be inserted for prying the plates upwardly.

Figs. 6-8 illustrate a construction in which a channel beam end-sill A' is employed and the buffing device is arranged in the hollow striking block or casting L such as usually secured centrally on the front side of sills of this sort. The buffing device is constructed and arranged substantially as above described and as shown in Figs. 1-5, except that the springs G are preferably arranged vertically on end instead of horizontally on their side edges, as in the other construction. In Figs. 6-8, E' represents the wedge, F' the friction blocks, I' the retaining bolt, and K' the removable plates covering openings  $k^4$  in the front wall of the striking block through which access is had to the springs. The striking block in this construction forms in effect a hollow middle portion of the end sill and the term "end sill" is used in some of the claims with such meaning.

I claim as my invention:

1. In a buffing device for cars, the combination with a drawbar, and an end sill having a hollow portion above the drawbar forming a buffer chamber, of a wedge adapted to be moved inwardly in said chamber by the drawbar, friction blocks in said chamber on opposite sides of said wedge and adapted to be moved laterally by the wedge, springs in said chamber on opposite sides of said friction blocks for opposing the movement of said friction blocks, and a device extending rearwardly from said wedge through said chamber for retaining the wedge and friction blocks in place, substantially as set forth.
2. In a buffing device for cars, the combination with a drawbar, and a hollow member above the drawbar forming a buffer chamber, of a wedge adapted to be moved inwardly in said chamber by the drawbar and consisting of separate halves, friction blocks in said chamber on opposite sides of said wedge and adapted to be moved laterally by the wedge, springs in said chamber on opposite sides of said friction blocks for opposing the movement of said friction blocks, and a bolt which is held between the halves of said wedge and retains the wedge and friction blocks in place in said chamber, substantially as set forth.
3. In a buffing device for cars, the combination with a drawbar, and a hollow member above the drawbar forming a buffer chamber and having an opening in the front wall thereof, of a wedge adapted to be moved inwardly in said chamber by the drawbar and adapted to be removed through said opening, friction blocks in said chamber on opposite sides of said wedge and adapted to be moved laterally by the wedge,

and springs in said chamber for opposing the movement of said friction blocks and each comprising a set of bowed spring plates which extend lengthwise with respect to the direction of movement of the wedge and are held from endwise movement in said buffer chamber, and a retaining device for said wedge and friction blocks extending from said wedge rearwardly between said friction blocks, substantially as set forth.

4. In a buffing device for cars, the combination with a drawbar, and an end sill having a hollow portion above the drawbar forming a buffer chamber which is contracted in width at its middle, of a wedge adapted to be moved inwardly in said chamber by the drawbar, friction blocks arranged at opposite sides of said wedge in the contracted middle portion of said chamber and adapted to be moved laterally by the wedge, and bowed leaf springs arranged in the wide end portions of said chamber with their convex sides bearing against said friction blocks for opposing the movement of said friction blocks, substantially as set forth.

5. In a buffing device for cars, the combination with a drawbar, and a hollow member above the drawbar forming a buffer chamber, of a wedge adapted to be moved inwardly in said chamber by the drawbar, friction blocks in said chamber on opposite sides of said wedge and adapted to be moved

laterally by the wedge, leaf springs arranged in said chamber at opposite sides of said friction blocks for opposing the movement of said friction blocks, and a plate at one end of each of said springs which covers an opening in the outer wall of said chamber and which is movable to uncover said opening to afford access to the spring, substantially as set forth.

6. In a buffing device for cars, the combination with a drawbar, and a hollow member above the drawbar forming a buffer chamber, of a wedge adapted to be moved inwardly in said chamber by the drawbar, friction blocks in said chamber on opposite sides of said wedge and adapted to be moved laterally by the wedge, leaf springs arranged in said chamber at opposite sides of said friction blocks for opposing the movement of said friction blocks, and a plate at one end of each of said springs which covers an opening in the outer wall of said chamber and which is removable through a slot in the top of said chamber to uncover said opening to afford access to the spring, substantially as set forth.

Witness my hand, this 2d day of August, 1909.

THOMAS L. McKEEN.

Witnesses:

C. W. PARKER,  
C. B. HORNBECK.

Correction in Letters Patent No. 1,016,702.

It is hereby certified that in Letters Patent No. 1,016,702, granted February 6, 1912, upon the application of Thomas L. McKeen, of Easton, Pennsylvania, for an improvement in "Car Buffing Devices," an error appears in the printed specification requiring correction as follows: Page 2, line 34, for the word "closely" read *loosely*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 2nd day of April, A. D., 1912.

[SEAL.]

C. C. BILLINGS,

*Acting Commissioner of Patents.*

and springs in said chamber for opposing the movement of said friction blocks and each comprising a set of bowed spring plates which extend lengthwise with respect to the direction of movement of the wedge and are held from endwise movement in said buffer chamber, and a retaining device for said wedge and friction blocks extending from said wedge rearwardly between said friction blocks, substantially as set forth.

4. In a buffing device for cars, the combination with a drawbar, and an end sill having a hollow portion above the drawbar forming a buffer chamber which is contracted in width at its middle, of a wedge adapted to be moved inwardly in said chamber by the drawbar, friction blocks arranged at opposite sides of said wedge in the contracted middle portion of said chamber and adapted to be moved laterally by the wedge, and bowed leaf springs arranged in the wide end portions of said chamber with their convex sides bearing against said friction blocks for opposing the movement of said friction blocks, substantially as set forth.

5. In a buffing device for cars, the combination with a drawbar, and a hollow member above the drawbar forming a buffer chamber, of a wedge adapted to be moved inwardly in said chamber by the drawbar, friction blocks in said chamber on opposite sides of said wedge and adapted to be moved

laterally by the wedge, leaf springs arranged in said chamber at opposite sides of said friction blocks for opposing the movement of said friction blocks, and a plate at one end of each of said springs which covers an opening in the outer wall of said chamber and which is movable to uncover said opening to afford access to the spring, substantially as set forth.

6. In a buffing device for cars, the combination with a drawbar, and a hollow member above the drawbar forming a buffer chamber, of a wedge adapted to be moved inwardly in said chamber by the drawbar, friction blocks in said chamber on opposite sides of said wedge and adapted to be moved laterally by the wedge, leaf springs arranged in said chamber at opposite sides of said friction blocks for opposing the movement of said friction blocks, and a plate at one end of each of said springs which covers an opening in the outer wall of said chamber and which is removable through a slot in the top of said chamber to uncover said opening to afford access to the spring, substantially as set forth.

Witness my hand, this 2d day of August, 1909.

THOMAS L. McKEEN.

Witnesses:

C. W. PARKER,  
C. B. HORNBECK.

Correction in Letters Patent No. 1,016,702.

It is hereby certified that in Letters Patent No. 1,016,702, granted February 6, 1912, upon the application of Thomas L. McKeen, of Easton, Pennsylvania, for an improvement in "Car Buffing Devices," an error appears in the printed specification requiring correction as follows: Page 2, line 34, for the word "closely" read *loosely*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 2nd day of April, A. D., 1912.

[SEAL.]

C. C. BILLINGS,

*Acting Commissioner of Patents.*

Correction in Letters Patent No. 1,016,702.

It is hereby certified that in Letters Patent No. 1,016,702, granted February 6, 1912, upon the application of Thomas L. McKeen, of Easton, Pennsylvania, for an improvement in "Car Buffing Devices," an error appears in the printed specification requiring correction as follows: Page 2, line 34, for the word "closely" read *loosely*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 2nd day of April, A. D., 1912.

[SEAL.]

C. C. BILLINGS,

*Acting Commissioner of Patents.*