

1,016,701.

3 SHEETS--SHEET 1.

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Patented Feb. 6, 1912

3 SHEETS—SHEET 2.

1,016,701.

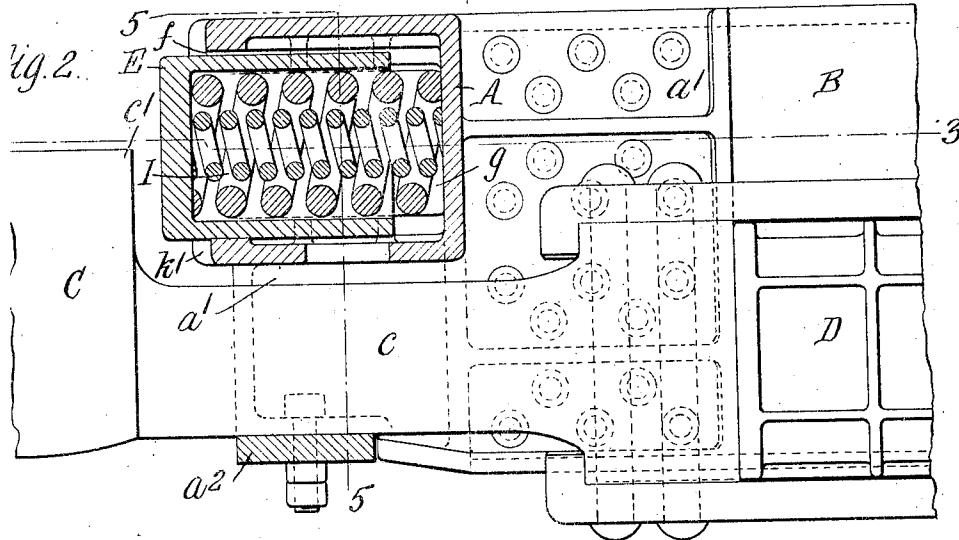
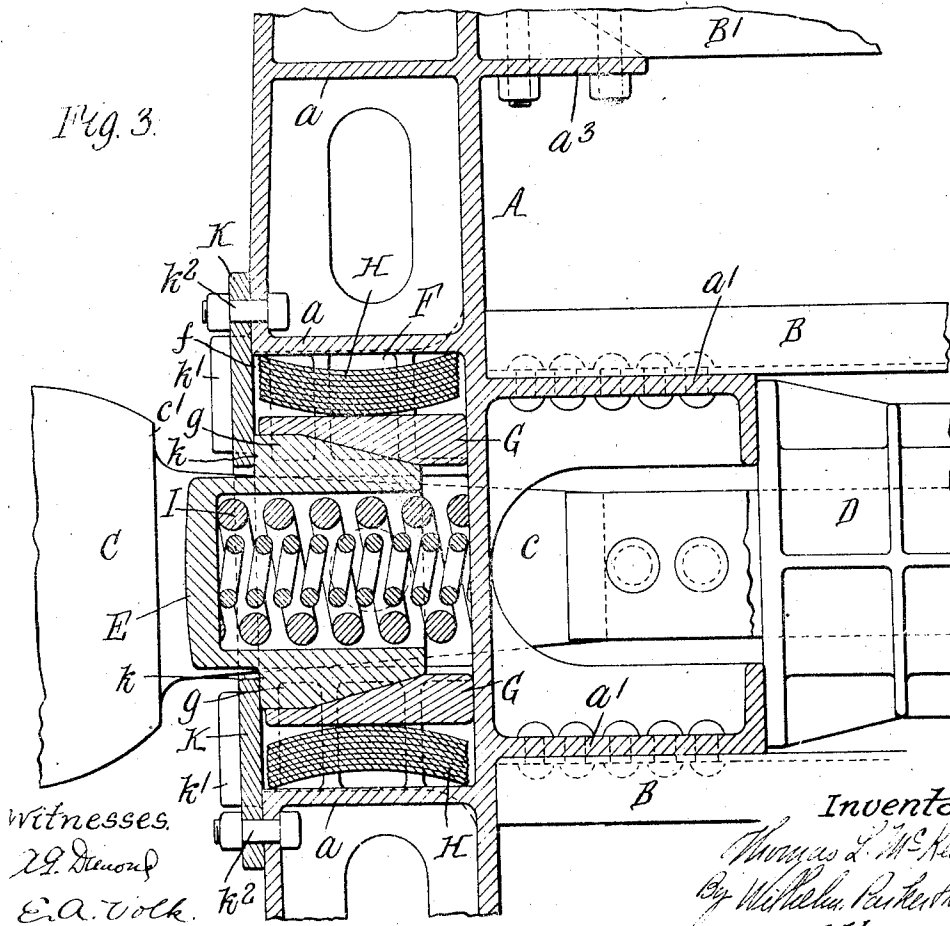


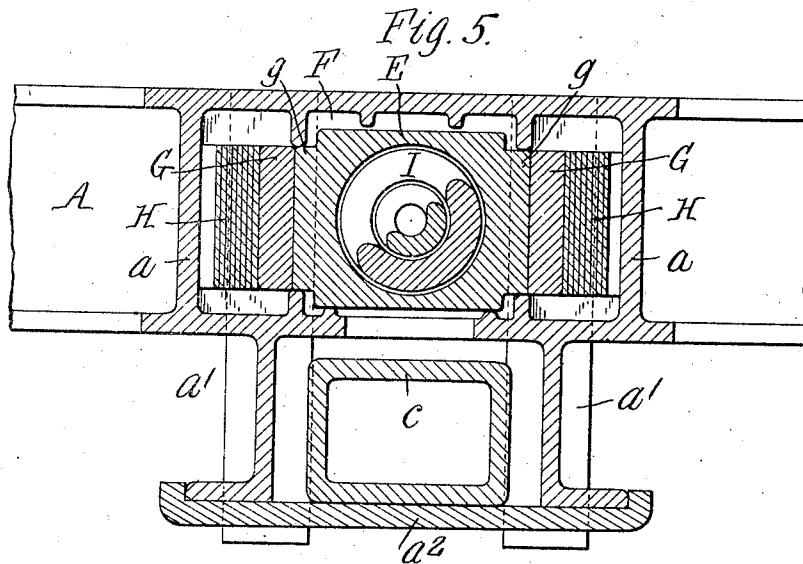
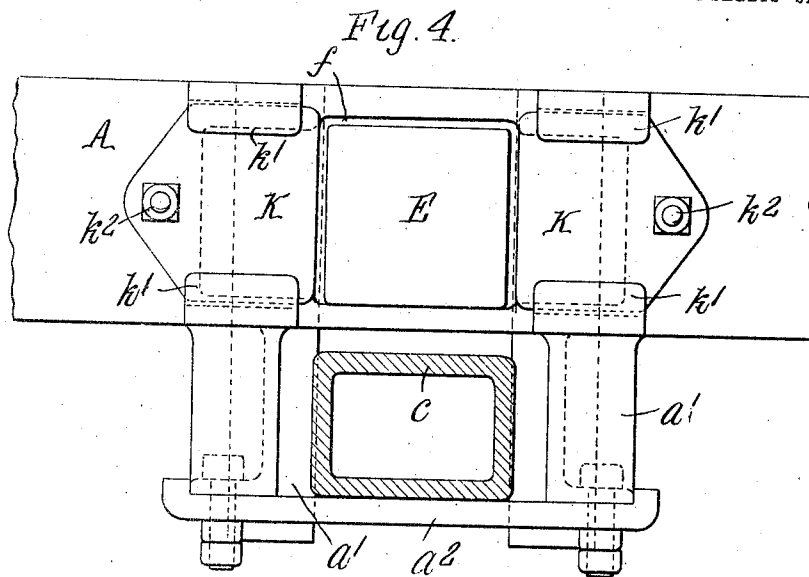
Fig. 3.



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T. L. McKEEN.
CAR BUFFER AND END SILL.
APPLICATION FILED APR. 12, 1909.

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3 SHEETS—SHEET 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

THOMAS L. McKEEN, OF EASTON, PENNSYLVANIA.

CAR BUFFER AND END SILL.

1,016,701.

Specification of Letters Patent.

Patented Feb. 6, 1912.

Application filed April 12, 1909. Serial No. 439,271.

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 Buffers and End Sills, of which the following is a specification.

This invention relates more particularly to improvements in buffing apparatus intended for use on freight cars having hollow metallic end sills, for supplementing the buffing action of the draft gear.

One of the principal objects of the invention is to provide a combined end sill and buffer construction in which the hollow end sill itself constitutes the containing box or casing for the movable parts of the buffing apparatus, whereby the necessity of a separate box or casing for the buffing apparatus is avoided and the cost and weight of the apparatus is consequently materially reduced, while at the same time the buffing apparatus does not project out from the end of the car but is practically hidden from view in the end sill and inclosed and protected thereby.

Another object is to provide a friction buffing apparatus of high capacity which is nevertheless of compact, strong, simple and inexpensive construction.

In the accompanying drawings, consisting of three sheets: Figure 1 is a fragmentary plan view, partly in section, of a metallic car under frame provided with a buffing apparatus embodying the invention. Fig. 2 is a longitudinal sectional elevation, on an enlarged scale, of the end sill and buffing apparatus. Fig. 3 is a sectional plan thereof in line 3-3, Fig. 2. Fig. 4 is a front elevation, partly in section, thereof. Fig. 5 is a transverse sectional elevation thereof in line 5-5, Fig. 2.

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

A represents the end sill, B B' and B² respectively the center, intermediate and side sills, C the coupler, c the coupler shank or drawbar, and D the draft gear of a freight car.

The end sill A is hollow and preferably consists of a single-piece steel casting having vertical cross-webs *a* therein at suitable intervals for strengthening it, and provided centrally with brackets or portions *a'* which extend rearwardly therefrom for the

attachment of the center and draft sills and the inner or rear ends of which constitute front stops or abutments for the draft gear. These brackets *a'* also depend below the end sill, and the drawbar is confined laterally between them and is supported by a bar *a²* connecting the bottoms of the brackets. The end sill is also shown as provided with suitable lugs or pockets *a³* for connecting it to the adjacent ends of the longitudinal sills B' and B². The coupler C and draft gear D may be of any usual or suitable construction. The rear portion of the head of the coupler extends upwardly above the drawbar in front of the end sill, as usual, forming a horn or projection *c'* with an upright rear or inner face which is utilized for operating the buffer.

E represents a buffer head which is arranged to move fore and aft of the car in a central chamber F formed in the end sill between the cross webs *a* at the middle portion of the sill. The outer end of this buffer head projects out through an opening *f* in the outer wall of the end sill in rear of the projection *c* of the drawhead so as to be moved inwardly thereby when the coupler is pushed inwardly in buffing. The buffer head is provided at opposite sides, within the chamber F, with wedge portions *g* having inclined outer faces which bear and are adapted to slide against correspondingly inclined faces on friction blocks G which are bodily movable laterally or sidewise of the car in the chamber F.

Springs H arranged between the friction blocks G and the end walls of the buffer chamber F to be made shorter, or the middle against the friction faces of the buffer head and resist the spreading of the friction blocks caused by the inward movement of the buffer head. Each spring preferably consists of a number of bowed spring plates or leaves arranged on edge, as such springs have a great capacity and occupy the minimum space, thus permitting the buffer chamber F to be made shorter, or the middle cross webs *a* to be located nearer the center of the end sill where they are needed for strengthening this part of the end sill.

I represents a release spring which supplements the leaf springs in resisting the inward movement of the buffer head and insures the return of the buffer head to the initial position after the pressure on the head which forces it inwardly is removed.

This spring *a* is preferably arranged in the buffer chamber and extends into a cavity provided for it in the buffer head, and consists of inner and outer spring coils, but this arrangement is not absolutely essential.

The several parts of the buffer are inserted into the chamber *F* through the opening *f* in the outer wall thereof, and are retained in the chamber by cover plates *K* which partly close the opening *f* in the outer wall of the end sill and are adapted to engage outwardly facing shoulders *k* at opposite sides of the buffer head, to limit the outward movement of the buffer head. In the construction shown, these cover plates, see Figs. 3 and 4, are slid into place between grooved lugs *k'* on the outer wall of the end sill and are secured by bolts *k''*. Any other suitable means for covering the opening *f* and confining the parts of the buffer in the buffer chamber *F* could be used.

In the normal position of the parts, the buffer head is held in a position to leave a space between the same and the horn *c'* of the coupler which allows an inward movement of the coupler for coupling cars that is resisted only by the draft gear *D*. When the coupler is driven farther inwardly in buffing, the horn *c'* strikes the buffer head and moves it inwardly against the resistance of the friction buffing apparatus in the end sill which thus supplements the resistance of the draft gear *D* and permits the use of a light buffing capacity required on freight cars. The buffing apparatus constructed and arranged in the end sill as described adds but little to the cost of the car.

I claim as my invention:

1. The combination with a car having a hollow metal end sill, of a coupler having a drawbar extending under the end sill and a part projecting upwardly in front of the end sill, a draft gear for said coupler, a buffer head arranged in said hollow end sill in rear of said projection on the coupler and adapted to be moved inwardly by the upwardly projecting part of said coupler, and friction resistance devices arranged in said hollow end sill at opposite sides of said buffer head and exerting pressure laterally against said buffer head to resist the inward movement thereof, substantially as set forth.

2. The combination in a car with a hollow metal end sill, of a coupler having a drawbar extending under the end sill and a part projecting upwardly in front of the end sill, a draft gear for said coupler, a hollow buffer head arranged in said hollow end sill and projecting out of the same in position to be

engaged and moved inwardly by said projection on the coupler after an initial movement of said coupler, friction resistance devices arranged in said end sill at opposite sides of said buffer head, and a release spring for said buffer located in the hollow buffer head, substantially as set forth.

3. The combination in a car with a hollow metal end sill, of a coupler having a drawbar extending under the hollow end sill and a part projecting upwardly in front of the end sill, a draft gear for said coupler, a buffer head arranged in said hollow end sill in rear of said projection on the coupler and adapted to be moved inwardly by the upwardly projecting part of said coupler, wedges on the opposite sides of said buffer head, laterally movable friction blocks in said end sill bearing against said wedges, leaf springs in said end sill which bear against the outer sides of said friction blocks and press said friction blocks against said wedges, and a coil release spring for said buffer, substantially as set forth.

4. The combination in a car with a hollow metal end sill, of a coupler having a drawbar extending under the hollow end sill, and a part projecting upwardly in front of the end sill, a draft gear for said coupler, a hollow buffer head arranged in said hollow end sill and projecting out of the same in position to be engaged and moved inwardly by said projection on the coupler, said buffer head having wedge faces on its opposite sides, laterally movable friction blocks in said hollow end sill which bear against the wedge faces of said buffer head, springs in said end sill which press said friction blocks against said wedge faces, and a release spring for said buffer located in said hollow buffer head, substantially as set forth.

5. In a car, the combination of a metal end sill provided centrally with a buffer chamber having an opening in its outer wall, a coupler, a draft gear for said coupler, a buffer head arranged in said buffer chamber and adapted to be forced inwardly by the coupler, resistance devices arranged in said buffer chamber at opposite sides of said buffer head, and means for closing said opening of the buffer chamber at opposite sides of the buffer head and retaining the buffer head and resistance devices in said chamber, substantially as set forth.

Witness my hand, this 3rd day of April, 1909.

THOMAS L. McKEEN.

Witnesses:

C. W. PARKER,

C. B. HORNBECK.

1,016,701, Patent, U.S. Pat. Office

It is hereby certified that in Letters Patent No. 1,016,701, granted February 6, 1912, upon the application of Thomas L. McKeen, of Easton, Pennsylvania, for an improvement in "Car Buffer and End Sills," an error appears in the printed specification requiring correction as follows: Page 1, line 94, strike out the words "to be made shorter, or the middle" and insert the words *press the friction blocks forcibly*; 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.