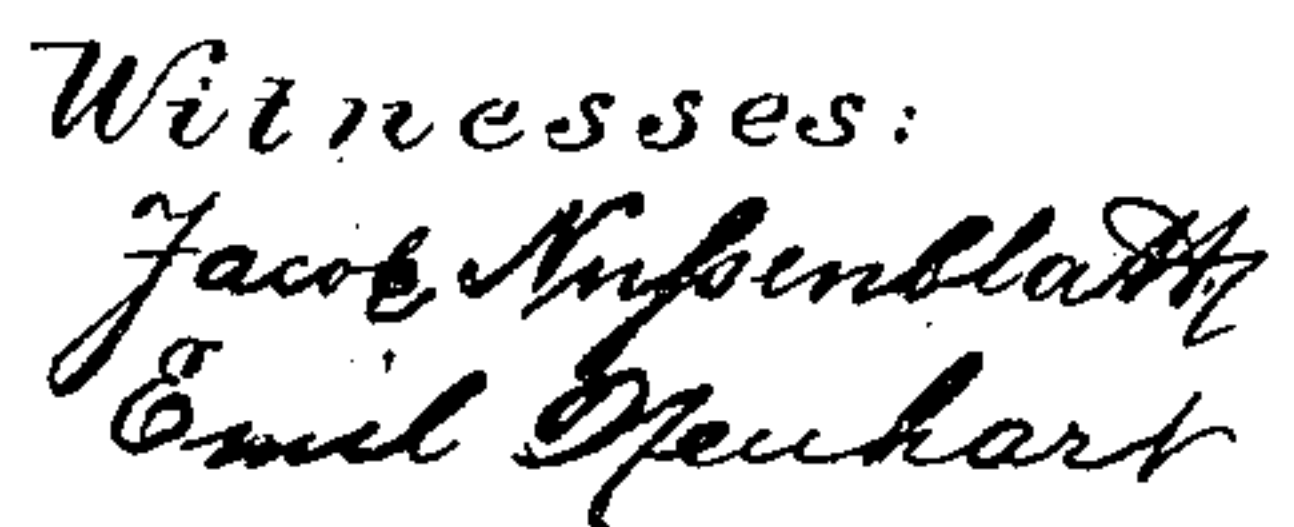
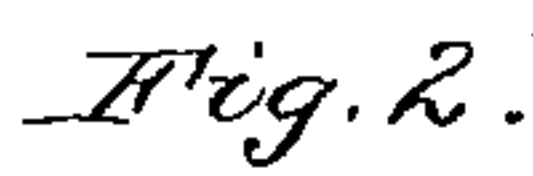


W. T. WILSON.
RAILWAY CAR.

No. 439,046.

Patented Oct. 21, 1890.



W. T. Wilson Inventor
By Wilhelm Honner
Attorneys.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 4.

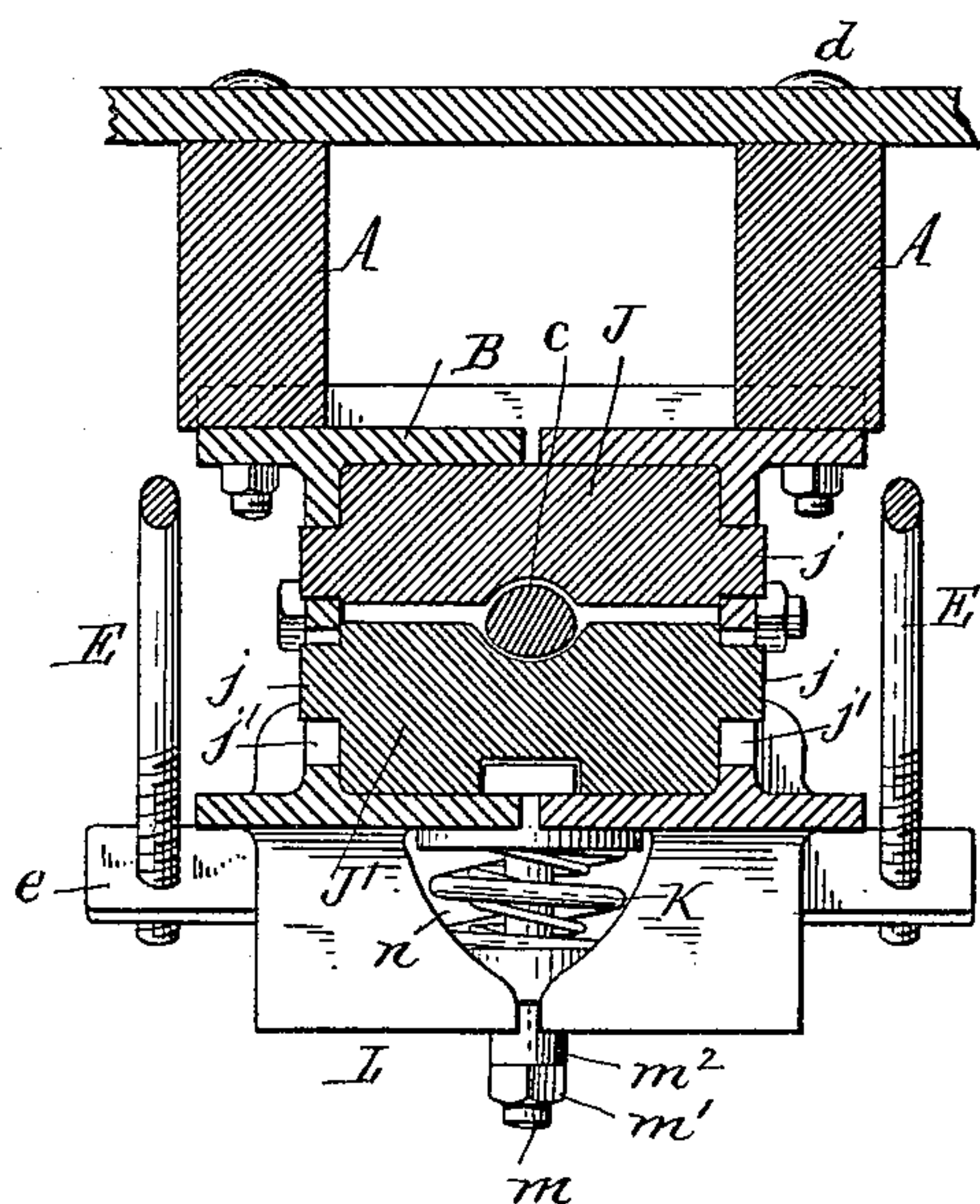
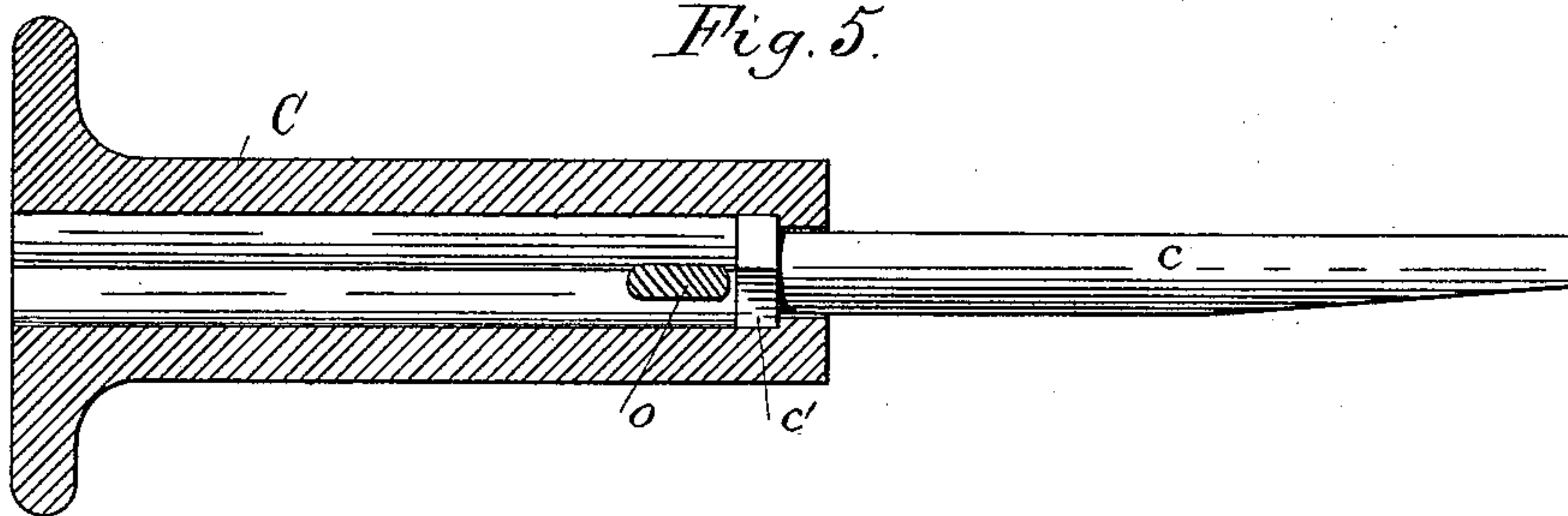


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM T. WILSON, OF BUFFALO, NEW YORK, ASSIGNOR OF TWO-FIFTHS
TO JOHN S. O'SHEA, OF SAME PLACE.

RAILWAY-CAR.

SPECIFICATION forming part of Letters Patent No. 439,046, dated October 21, 1890.

Application filed June 9, 1890. Serial No. 354,809. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM T. WILSON, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Railway-Cars, of which the following is a specification.

This invention relates to the buffing mechanism of railway-cars, and has for its object to increase by simple means the resistance of the draft-gear, so as to lessen the force of the shocks received by the car-body and reduce the liability of injury to the same.

The invention has the further object to provide a safety device which prevents withdrawal of the draft-bar from the car in case the fastening between the draft-bar and the buffer mechanism is broken from any cause.

In the accompanying drawings, consisting of two sheets, Figure 1 is a side elevation of the draft-gear of a freight-car provided with my improvements. Fig. 2 is a longitudinal section thereof. Fig. 3 is a cross-section in line *x x*, Fig. 1. Fig. 4 is a similar view in line *y y*, Fig. 2. Fig. 5 is a longitudinal section of the draft-bar.

Like letters of reference refer to like parts in the several figures.

A A represent the longitudinal center beams of the car to which the flooring is secured, and *A'* is the end sill.

B B represent longitudinal metallic supporting-frames, secured to the under side of the center beams and consisting of two parallel *I*-beams arranged side by side and contracted at their outer portions, as shown in Figs. 1 and 3, so as to form a rectangular chamber between the same, in which the square front portion of the draft-bar *C* is guided.

The *I*-beams are secured to the center beams of the car by vertical bolts *d*, passing through the center beams and the upper outer flanges of the *I*-beams. In addition to these bolts the *I*-beams are firmly united to the center beams by oppositely-inclined clips or tie-straps *E*, which straddle and embrace the center beams and *I*-beams and are connected at their lower ends by clip-plates *e*, bearing against the under sides of the *I*-beams, as

more clearly represented in Figs. 1 and 3. The upper cross-bars of these clips preferably rest in metallic seats *f*, countersunk in the upper sides of the center beams.

By arranging the clips in the manner shown the front clip resists the draft transmitted to the *I*-beams, while the rear clip resists the thrust received by these beams, thereby rigidly holding the *I*-beams in place. The clips also dispense with the use of numerous connecting-bolts which have been heretofore employed for this purpose. The inner lower flanges of the *I*-beams afford a long and firm bearing for the outer portion of the draft-bar and effectually prevent sagging thereof.

g represents the front follower-plate, and *g'* the rear follower-plate, through both of which the contracted cylindrical rear portion *c* of the draft-rod loosely passes. These followers are guided in ways formed between the adjacent *I*-beams *B*. The front follower bears against a shoulder formed at the junction of the flat-sided and cylindrical portions of the draft-bar, and the rear follower is compelled to move outwardly with the draft-bar by a transverse key or pin *h*, passing through the draft-bar, while the rearward movement of said follower is limited by a rib or shoulder formed on the supporting-frame of the draft-bar in a well-known manner.

I is the main buffer-spring, surrounding the draft-bar between the two followers.

J J' represent friction-blocks arranged between the *I*-beams *B* in rear of the main buffer mechanism and bearing with their inner faces against opposite sides of the draft-bar. One of these friction-blocks is stationary and the other, preferably the lower one, is movable and caused to press forcibly against the draft-bar by a spiral spring *K*, interposed between the under side of said block and the bottom of a pocket or housing *L*. The latter is formed partly on one of the *I*-beams *B* and partly on the other, as represented in Fig. 4. The vertically-movable friction-block is guided by lugs or tenons *j*, formed on opposite sides of the block and sliding in upright slots or ways *j'*, formed in the webs of the *I*-beams *B*, as represented in Figs. 1 and 4.

The spring *K* is compressed to a considerable

able tension before being placed into its pocket, so as to cause the lower friction-block to exert a heavy pressure against the extension *c* of the draft-bar in all positions of the latter. The spring thus resists the inward movement of the draft-bar under a light shock as well as under a severe blow and offers increased resistance by further compression as soon as the draft-bar is moved inwardly. To enable the spring to be inserted in the pocket in a compressed state the spring is seated between two cups *k*, which are connected by a bolt *m*, passing centrally through the spring and the cups. A sleeve or thimble *m*² is preferably interposed between the lower cup and the nut *m*' of the bolt. Upon turning the nut of the bolt in the proper direction the lower cup is caused to move toward the upper cup, whereby the spring is compressed. The spring is introduced into the pocket *L* in this compressed condition through openings or recesses *n*, formed in its front and rear sides. After the spring has been inserted in the pocket it is allowed to expand sufficiently to bear against the friction-block *J*' by loosening the nut of the bolt *m*, the head and nut of the latter being relieved from the pressure of the spring as soon as the latter bears with its upper end against the friction-block.

As the spring *K* is under constant compression, it causes the movable friction-block to exert a constant pressure against the rear portion of the draft-bar, which latter in turn bears with its upper side against the inner face of the stationary friction-block. A yielding frictional contact of great force is thus created between the draft-bar and the friction-blocks, which offers a powerful resistance to the movement of the draft-bar, thereby largely absorbing the shock received by the car and lessening the liability of damage thereto. The rear portion of the draft-bar is tapered rearwardly or made wedge-shaped, as shown, and the contiguous faces of the friction-blocks are correspondingly shaped, so that the inward movement of the draft-bar causes the movable friction-block to be depressed and further compress the spring, thereby still further increasing the resistance of the draft-bar. As soon as the draft-bar is relieved from the thrust it is again projected to its normal position by the reaction of the main buffer-spring *I* without requiring the draft-bar to be manipulated.

O represents a safety-pin or transverse bar secured to the front part of the draft-bar and passing through longitudinal slots *p*, formed in the sides of the *I*-beams *B*. These slots are made sufficiently long to permit the safety-pin to play in the slots without interfering with the movements of the draft-bar under ordinary circumstances. In case the connecting-key *h* of the draft-bar breaks, which is liable to occur, the safety-key *O* prevents withdrawal of the draft-bar by striking the front ends of the slots *p* and limiting the fur-

ther outward movement of the bar. By the use of this safety-pin the car can thus be drawn by means of its draft-bar until its buffer mechanism can be repaired. When the pin *h* breaks, the main buffer-spring still resists the thrust against the draft-bar, although it does not oppose the draft upon the same.

As represented in Fig. 5, the cylindrical rear portion of the draft-bar is made separate from the flat-sided front portion thereof, and the cylindrical portion is formed with a head *c*', which is seated in the central bore or opening of the front portion and bears against a shoulder at the inner end of the latter. The movement of the head *c*' is limited in the opposite direction by the safety-pin *O*. The cylindrical portion of the draft-bar is attached to the hollow front part thereof by inserting it into the front end of the hollow portion before securing the safety-pin in the same.

Q is a hand-hole formed in the sides of one of the *I*-beams *B* for inserting the key *h* of the draft-bar in place and for manipulating other parts of the buffer mechanism in assembling the same.

r is an opening formed in the adjacent lower sides of the *I*-beams through which the main buffer-spring is introduced between the beams.

I claim as my invention—

1. The combination, with the car-body, of longitudinal *I*-beams secured side by side to the under side thereof and a draft-bar guided between the *I*-beams and supported upon the lower flanges thereof, substantially as set forth.

2. The combination, with a longitudinal center beam of the car-body, of longitudinal *I*-beams arranged side by side underneath the center beams and forming together a chamber in which the draft-bar is guided, and oppositely-inclined truss straps or clips embracing the *I*-beams and the longitudinal beam of the car-body, substantially as set forth.

3. The combination, with the draft-bar composed of a hollow front portion and having an internal shoulder and a solid rear portion provided with a head arranged in said hollow portion and bearing against said shoulder, of a transverse pin secured in the hollow portion of the draft-bar in front of the head of the solid rear portion, substantially as set forth.

4. The combination, with the car-frame and the draft-bar guided in the same and having a stem or rearward extension rigidly connected therewith, of a main buffer-spring resisting both the thrust and the draft upon the draft-bar, a friction-block bearing against the rigid extension of the draft-bar, and a spring, whereby the friction-block is pressed against the draft-bar extension, substantially as set forth.

5. The combination, with the car-frame, of the draft-bar guided in the frame and having a tapering or wedge-shaped extension rigidly connected therewith, a main buffer-spring re-

sisting both the thrust and the draft upon the draft-bar and whereby the latter is projected to its normal position when relieved from the thrust, a friction-block bearing against the wedge-shaped extension of the draft-bar, and a spring, whereby the friction-block is pressed against said extension, substantially as set forth.

6. The combination, with the car-frame, of the draft-bar guided in the frame and having a stem or rearward extension rigidly connected therewith, a friction-block bearing against said extension, a spring, whereby the friction-block is pressed against said extension, cups in which the ends of the springs are seated, a bolt connecting said cups, and a pocket or casing arranged on the car-frame and inclosing said spring and cups, substantially as set forth.

7. The combination, with the car-body and the draft-bar, of I-beams secured side by side to the under side of the car-body and provided with a spring pocket or casing, a movable friction-block guided between the I-beams and bearing against the draft-bar, and a spring arranged in said pocket or casing and bearing against the friction-block, substantially as set forth.

8. The combination, with the car-body and the draft-bar, of I-beams secured side by side to the under side of the car-body and provided with a spring pocket or casing, a movable friction-block guided between the I-beams and bearing against the draft-bar, a spring arranged in said pocket or casing and

bearing against said friction-block, caps or cups in which the ends of the spring are seated, and a bolt passing through the spring and its caps, substantially as set forth.

9. The combination, with the car-body and the draft-bar, of I-beams secured side by side to the under side of the car-body and provided with a spring pocket or casing, a movable friction-block guided between the I-beams and bearing against the draft-bar, a spring arranged in said pocket or casing and bearing against said friction-block, caps or cups in which the ends of the spring are seated, a bolt passing through said springs, caps, and the bottom of the spring-pocket, and a sleeve or washer interposed between the nut of said bolt and the adjacent cap of the spring, substantially as set forth.

10. The combination, with the stationary draft-bar frame provided with longitudinal slots, of a draft-bar composed of a hollow front portion having an internal shoulder and a solid rear portion provided with a head arranged in said hollow portion and bearing against said shoulder, and a transverse pin secured in the hollow portion of the draft-bar in front of the head of the solid rear portion and having its end portions arranged in the slots of the draft-bar frame, substantially as set forth.

Witness my hand this 23d day of May, 1890.

WILLIAM T. WILSON.

Witnesses:

C. F. GEYER,

F. C. GEYER.