(No Model.) 3 Sheets—Sheet 1.

P. BROWN.

DRAW BAR ATTACHMENT FOR CARS.

No. 486,427. Patented Nov. 22, 1892.

Fig. 1.

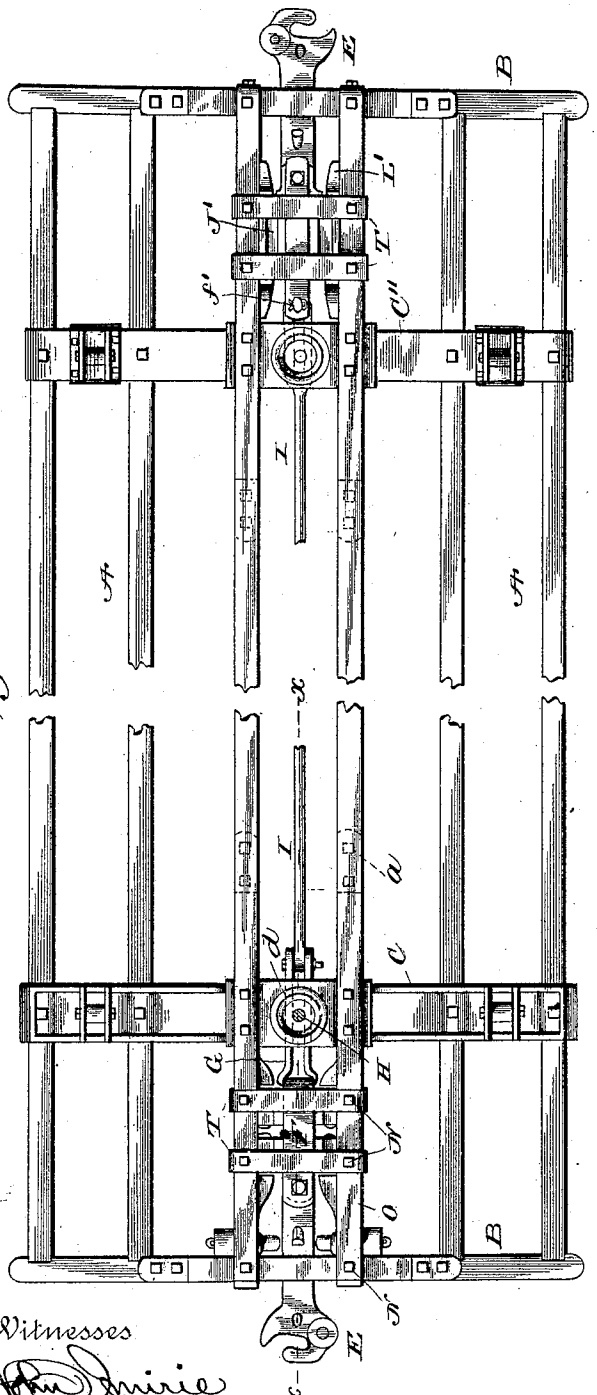
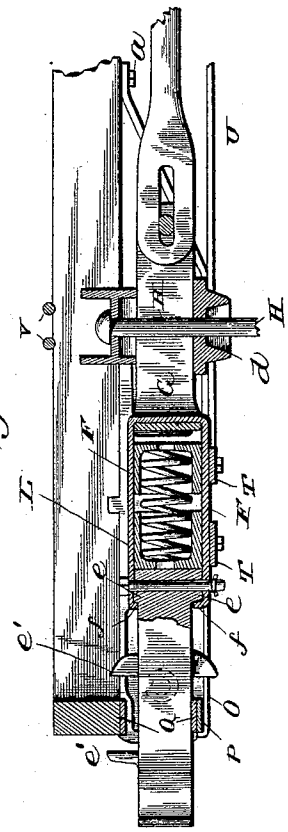


Fig. 2.



Witnesses
John Dewire
Thos E Robertson

Inventor
Perry Brown
By his Attorney
T. J. W. Robertson

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Fig. 3.

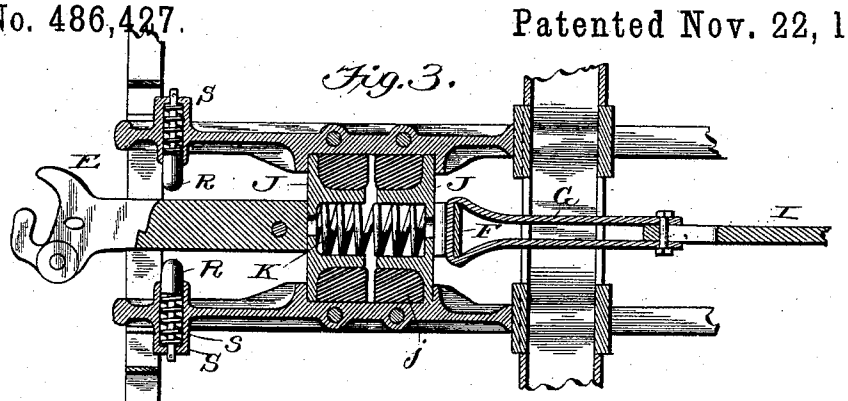


Fig. 4.

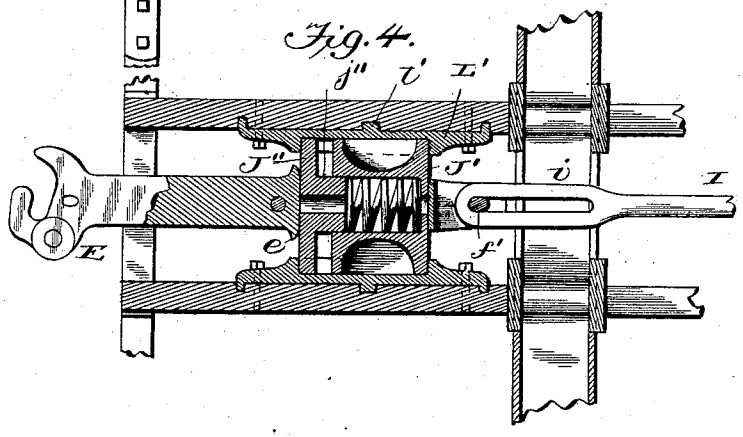


Fig. 5.

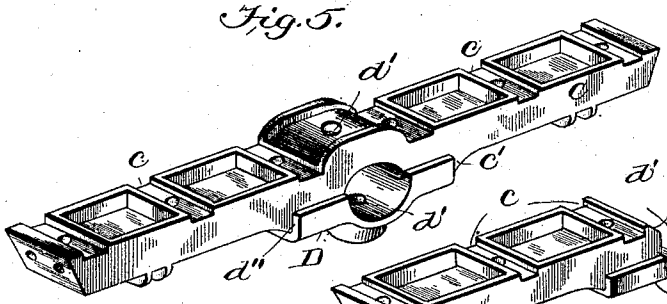


Fig. 6.

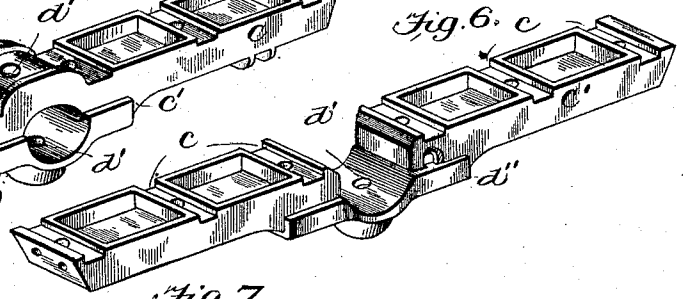
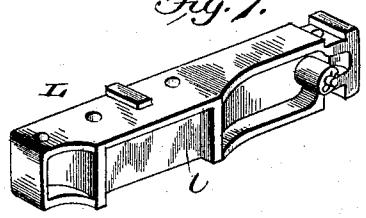


Fig. 7.



Witnesses

John Dunnie

Thos. E. Robertson

Inventor

Perry Brown

By his Attorney

T. J. W. Robertson

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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Fig. 8.

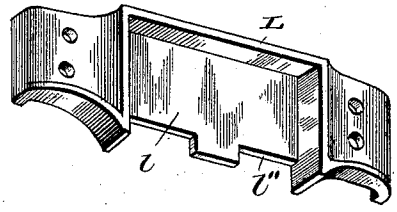


Fig. 9.

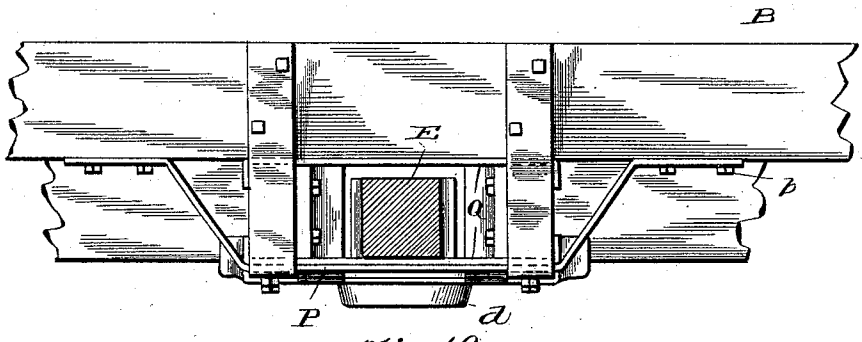


Fig. 10.

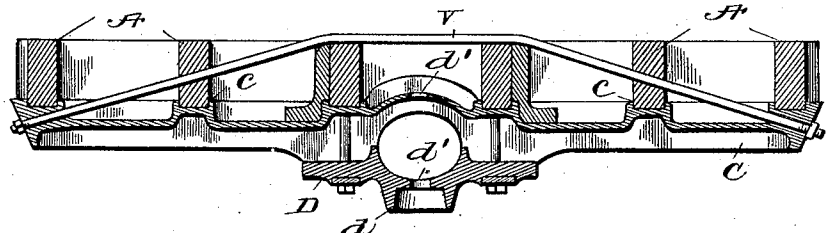
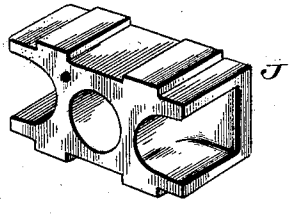


Fig. 11.



Witnesses
John Dinnie
Thos. E. Robertson

Inventor
Perry Brown
By his Attorney
T. J. W. Robertson

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

PERRY BROWN, OF SHARONVILLE, OHIO.

DRAW-BAR ATTACHMENT FOR CARS.

SPECIFICATION forming part of Letters Patent No. 486,427, dated November 22, 1892.

Application filed March 12, 1892. Serial No. 424,697. (No model.)

To all whom it may concern:

Be it known that I, PERRY BROWN, a citizen of the United States, residing at Sharonville, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Draw Bar Attachments, of which the following is a specification, reference being had therein to the accompanying drawings.

This improvemennt relates more particularly to that class of draw-bar attachments known as "continuous," and is designed to render the draw-bar and its connecting parts much more durable than heretofore.

The invention consists in the peculiar construction, arrangement, and combinations of parts hereinafter more particularly described, and then definitely claimed.

In the accompanying drawings, Figure 1 is a reversed plan of the timbers and draw-bars of a car. Fig. 2 is a central longitudinal section of one of the draw-bars on the line *x x* in Fig. 1. Fig. 3 is a horizontal longitudinal section of the same. Fig. 4 is a similar section of the draw-bar on the right-hand end of Fig. 1. Fig. 5 is a perspective view of the bolster. Fig. 6 is a similar view of a divided bolster. Fig. 7 is a similar view of a long draft guide-iron. Fig. 8 is a similar view of a shorter draft guide-iron. Fig. 9 is an end elevation with the coupling in section. Fig. 10 is a cross-section through the center of the bolster. Fig. 11 is a perspective view of a follower-block.

Referring now to the details of the drawings, A represents the longitudinal sills of the car, B the cross-sills, and C C′ C^2 bolsters thereof, which are shown in different forms, C and C′ being of metal and C^2 an ordinary wood bolster. The metal bolster is shown in two different forms in Figs. 5 and 6, that shown in Fig. 5 being in one piece, while in Fig. 6 the bolster proper is shown in two parts, connected by a bolster-plate. The metallic bolsters are preferably made of malleable cast-iron, but may be made of pressed steel or channel-iron, at the will of the maker, and are provided with recesses *c* to receive the sills A. Beneath the bolster and between shoulders *c′* is set the bolster plate D, having the circle *d* to fit in the truck-plate, (not shown,) a hole *d′* for the king-bolt, and projecting ribs d^2, which embrace the bottom of the bolster, as shown in Figs. 5 and 6.

E E are the couplings, which may be of any approved form, but preferably of the twin-jaw variety, and having a toe *e* at each side of the inner ends. The couplings are pivotally connected to a yoke F, which in one form of my improvement receives another yoke G, (see Fig. 3 and left-hand end of Fig. 1,) which passes on each side of the kingbolt H and is connected to a rod I, which is also connected to the other coupling at the opposite end of the car. The yoke F has its ends turned down, as shown at *f*, to fit around over projections *e* on the top and bottom of the coupling, by which means much of the strain is taken off the pivot of the yoke F. In this yoke is set the follower-blocks J, which are hollowed out to receive the spring K, and thus serve the purpose of protecting the spring and preventing the coils from "climbing" on each other and thus spoiling the spring, which so frequently occurs when there is no means of preventing said climbing. The ends of these blocks move in recesses *l*, formed in guide-irons L, which may either be attached to draft-timbers M, as shown in Fig. 4 and the right hand of Fig. 1, or they may be made as shown in Fig. 7, in which case they will be long enough to dispense with the said draft-timbers M, as shown in Fig. 3 and the left-hand end of Fig. 1. These draft-timbers or draft guide-irons, as the case may be, are bolted to the sills by bolts and nuts N, which bolts also pass through straps O, which are bent up over the front of the cross-sills at one end and bolted thereto, as shown, and are extended backward under the bolster and bolted to the longitudinal sills at *a*. In some cases, however, the straps O are simply bent up for a short distance over the end of the guide-irons, as shown in Fig. 2, and are therefore not bolted to the front of the cross-sill.

The front end of the coupling is supported by a stirrup P, bolted at *p* to the cross-sill and passing under draft-timbers or guide-irons, as the case may be. Between the cross-sill and the coupling, and between the coupling and stirrup, are removable wearing-plates Q Q′, which may be removed when worn and

replaced by others, and thus the stirrup is prevented from being worn by the motion of the coupling. The end of the plates Q Q′ are bent down or up, as the case may be, so as to clasp the draft timbers or irons according as one or the other may be employed. Besides this purpose, the plates Q may serve to receive the force of the lugs *c′* on the top and bottom of the coupling, which, although normally out of contact with the plates Q, may come in contact with them should some of the other connections accidentally give way.

The draft-irons when made long enough, as in Fig. 3, are provided with spring-plugs R, set in cylindrical projections S, containing springs *s*, which are so arranged as to tend to keep the couplings E in the central or normal position.

The follower-blocks J have their ends recessed, as shown, for two purposes—viz., to lighten the same and to receive cushions of rubber *j*. The spring K and the recesses made to receive it are so proportioned to each other that while allowing a proper amount of movement under the varying strain the coils of the spring cannot climb over each other, as the blocks when closed together form a cylindrical receptacle for the spring, which is slightly longer than said spring when its coils are all in close contact. Underneath the yoke F are set two short cross-bars T, which serve to retain it and the follower-blocks in place. By removing the nuts or bolts which retain these in place the blocks J J may be removed.

In that form of my invention shown in Fig. 4 and the right-hand end of Fig. 1, the ordinary bolster and draft-timbers are employed. To the draft-timbers the draft guides or irons L′ are bolted, as shown clearly in Fig. 4. The back of the irons have projections *l′*, which fit into grooves cut in the draft-timbers, and their lower edges have notches *l″*, which receive the cross-bars T. Instead of the equally-divided follower-blocks shown in Fig. 3, I employ a large block J′ and a smaller one J″, the former having a deep receptacle for the spring K and the latter having a plunger *j″*, acting on said spring, said receptacle, plunger, and spring being so proportioned that no damage can come on the spring from their coils climbing. In this case the yoke F consists of two straps pivoted to the couplings E in the same manner as the yoke F, but connected at their inner ends by a pin or bolt *f′*, which passes through an eye *i* on the end of rod I, sufficiently long to receive the king-bolt also and yet allow the necessary play. In some cases I run bars U, which extend from one bolster to the other, so as to provide further strength should it be thought desirable or where extra-heavy cars are used.

The bolsters are provided with truss-rods V, which pass over the two central sills through the next ones to them under the outer sills and through the ends of the bolsters, where they are secured by nuts, whereby a very strong bolster is made with but little metal. At *c″* I show antifriction-rollers, which will serve to relieve friction between the bolster and track.

I deem it important that the inner end of the draw-bar or coupling and the outer face of the follower-block be squared off, for in that case the spring K will tend to keep the draw-bar in its central position, even if the spring-plugs R should fail for any reason. To make this additionally sure, I prefer to form the rear end of the coupling with toes *e*, as shown in Fig. 4, in which case the spring-plugs may be dispensed with; but both the toes and the spring-plugs may be used, if preferred. I have shown the rubber cushions in two separate pieces; but it is evident that there may be a single piece of rubber on each side extending into both blocks. In some cases I may substitute rubber for the spiral spring K.

What I claim as new is—

1. In a draw-bar attachment, a pair of follower-blocks having a receptacle for the spring longer than the length of said spring when closed and opening transversely of the same, substantially as described.

2. In a draw-bar attachment, a pair of follower-blocks, one being a receptacle for the spring and the other having a plunger for acting on the spring projecting from it and extending into and working within the receptacle inclosing the spring, substantially as described.

3. In a draw-bar attachment, a draw-bar, a connecting-rod between it and a second draw-bar at the opposite end of the car, a pair of follower-blocks, a spring between them, and a yoke pivotally connected to the first-mentioned draw-bar, passing above and below said follower-blocks and connected with the draw-bar on the opposite end of the car, substantially as described.

4. In a draw-bar attachment, a draw-bar, a connecting-rod between it and a second draw-bar at the other end of the car, a pair of follower-blocks, a spring between them, and a yoke arranged above and below said blocks, connected to a second yoke secured to said connecting-rod, substantially as described.

5. In a draw-bar attachment, a pair of draw-bars, and a rod connecting said draw-bars having an oblong eye through which the king-bolt and a bolt connecting it with one of the draw-bars pass, substantially as described.

6. In a draw-bar attachment, a bolster having an opening in its center to admit the passage of the draw-bar connections and provided with antifriction-rollers, substantially as described.

7. In a draw-bar attachment, a pair of guide-plates having notches on their edges to receive cross-bars running from one to the other and under the draft-timbers, substantially as described.

8. In a draw-bar attachment, a bolster having a central aperture for the passage of the

connections between the draw-bars and a bolster-plate closing the aperture on the lower side and having tenons fitting into mortises in the bolster, substantially as described.

9. In a draw-bar attachment, a pair of follower-blocks and a spring-plug bearing on the draft-bar to keep it in its normal position and a draft-iron having a receptacle for the plug and recesses for the follower-blocks, substantially as described.

10. In a draw-bar attachment, a follower-block and a draw-bar having their contiguous faces butting together, the draw-bar having a pivotal connection near the front end of said follower-block, and a spring pressing said draw-bar and follower-plate together, whereby the draw-bar is returned to its central position by the power of the spring, substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses, this 11th day of March, 1892.

PERRY BROWN.

Witnesses:
THOS. E. ROBERTSON,
W. H. BARNES.