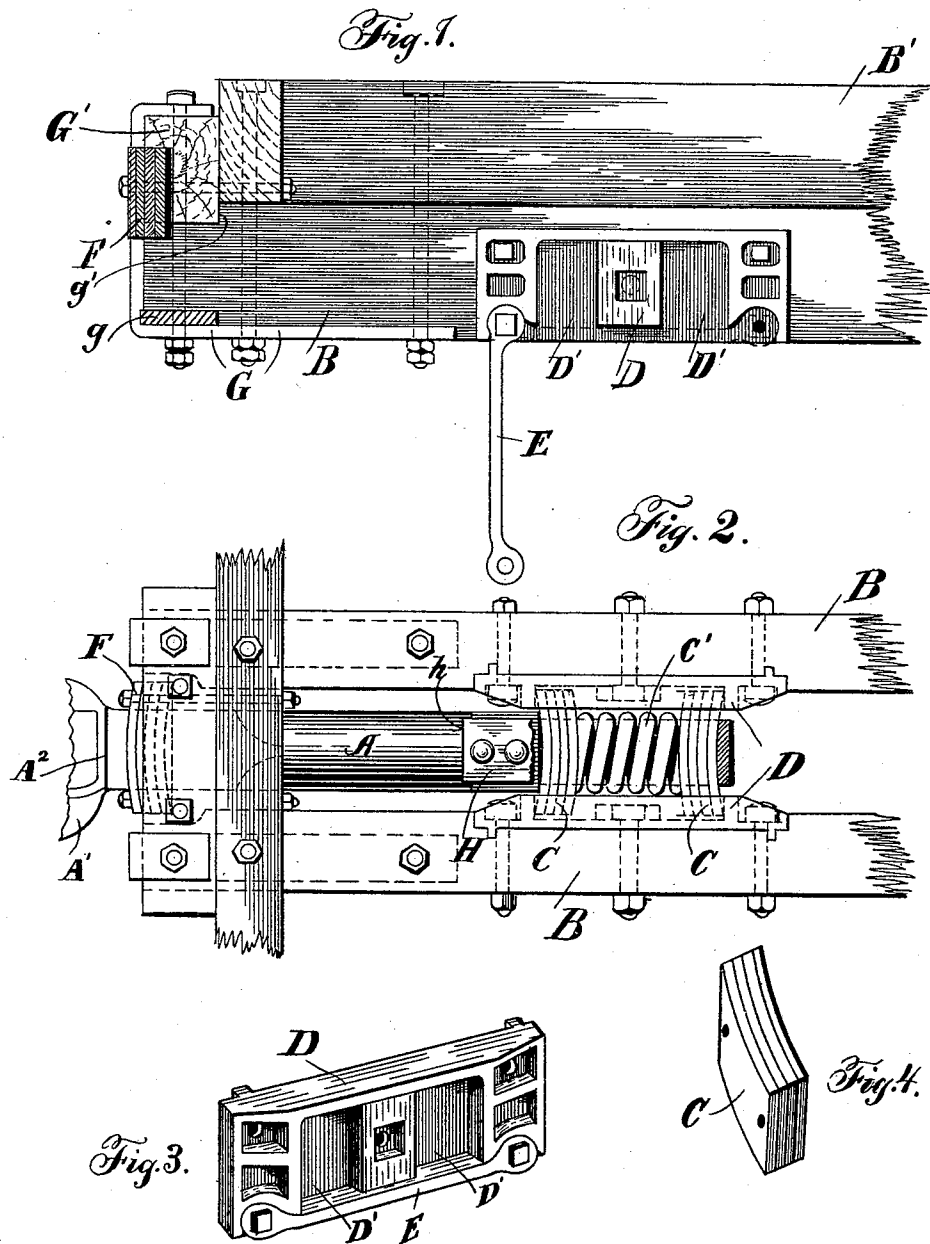


(No Model.)

J. A. HINSON.
DRAW BAR ATTACHMENT.

No. 500,331.

Patented June 27, 1893.



Witnesses.

Chas. P. Houghton
Samuel C. Hibben

Inventor.

James A. Hinson.

By *Banning & Banning* Payson.
Attorneys.

UNITED STATES PATENT OFFICE.

JAMES A. HINSON, OF CHICAGO, ILLINOIS.

DRAWBAR ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 500,331, dated June 27, 1893.

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To all whom it may concern:

Be it known that I, JAMES A. HINSON, a citizen of the United States, residing at Chicago, Illinois, have invented certain new and useful Improvements in Drawbar Attachments, of which the following is a specification.

The object of my invention is to provide means to lessen or absorb the shock or blow imparted to draw-bars and their attachments, as cars are brought together and pulled apart; and my invention consists in the features and details of construction hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of a portion of the main longitudinal sill of a car and the draft timber, viewed from the inside. Fig. 2 is a plan view of the draft timbers between which the draw bar is arranged with connected parts. Fig. 3 is a perspective view of one form of drawbar plates; and Fig. 4 is a perspective view of a set of springs used in my improvement.

My improvement in drawbar attachments has more especial reference to what is known among railroad men as draft rigging, which is a term used to designate those particular parts that relate to the mounting and cushioning of the drawbars of railway cars.

In making my improvement, I use a drawbar A, which may be of the ordinary construction provided with the coupling head A'. The drawbar is arranged between the draft timbers or sub-sills B, fastened to the under side of the longitudinal sills B' of the car, in the usual or in any other convenient way. Instead, however, of using a coiled spring or springs alone to receive the shock or blow occasioned by the sudden coming of cars together or the sudden separation of them, as happens in coupling, stopping and starting trains, &c., I use follower plates, C, made of leaf springs in conjunction with a coiled spring or springs C'. These follower plates are made up or composed, as above said, of leaf springs preferably riveted together, to secure the desired strength and tension necessary for the work which they are intended to do. I arrange them transversely between the sub-sills or draft timbers, and, in order to accommodate those which work particularly in conjunction with the coiled spring, I make draft plates, D, provided with recesses D'.

These draft plates are preferably set into, and bolted or otherwise securely fastened to the draft timbers, as shown in Fig. 2. The recesses are wide enough to receive the ends of the sets of follower plates C, and somewhat longer than necessary to accommodate them, so as to permit of the desired longitudinal play in the compression or opening of the springs. I have shown two recesses in the draft plates, one for each set of follower plates, but I do not intend to limit myself to making them separate, as it is obvious that the partition between the recesses could be dispensed with, without interfering with their purpose or function. In order to insert or remove the sets of follower plates in the draft plates with facility and dispatch, I make one side of the recesses, preferably the lower side or a portion of it, capable of being opened, so that the springs may be inserted or removed. As shown in the drawings, this result is obtained by bolting the bar E' at the lower side of the recessed draft plates, so that the ends of the follower plates will be inclosed in the recesses by it.

When it is desired to remove a set of follower plates, or a drawbar for any purpose, and to insert another in its place, all that is necessary is to remove the bolt at one end of the bar, so that it may be swung or removed out of position, when the necessary change can be made. In Fig. 1, I have shown it as dropped down to permit the removal or insertion of the ends of the follower plates. Between the two sets of follower plates, C, that are arranged in the draft plates, is arranged a coiled spring or springs C', above mentioned. This spring rests at its ends against the two sets of follower plates between which it is interposed. The rear set of the follower plates rests against the rear end of the recess, and the coiled spring holds the front set of the follower plates out against the outer or front end of the recess in which its ends are placed. This leaves sufficient space to permit the front set of follower plates to be moved back at pleasure.

Immediately behind the drawbar head is arranged another set of leaf springs, F, which may be mounted and held in its position by any desired or convenient means. Immediately in front of this set of leaf springs F, the

drawbar is provided with a flange or shoulder A^2 , adapted to abut against it whenever the drawbar is forced apart by the pressure of contacting cars.

5 Whenever two cars provided with my improvement are brought together in coupling, or in the stoppage of a train, the drawbars will be forced back, and the shoulder A^2 will come into contact with the forward set of leaf
10 springs, F. I prefer the arrangement, however, to be such that the pressure of the drawbar will be accelerated on the coiled spring before the shoulder A^2 has been pressed back far enough to abut against the set of leaf
15 springs F. The strength and tension of the coiled spring will ordinarily be sufficient, so that it will be unnecessary to have the shoulder abut against the springs F, except under circumstances of unusual pressure. The set
20 of springs F, when the shoulder bears against them with sufficient pressure, will be straightened more or less and the tension will thus absorb or take up a portion of the shock. As the drawbar is pressed farther back, its end
25 will force back the front set of follower plates, C, arranged in the draft plate, until the coiled spring is fully compressed, when further pressure will cause the rear set of follower plates to be straightened more or less and its tension
30 increased. We will thus, in the backward pressure of the drawbar, have the force of the blow or shock distributed through the coiled spring, the front set of leaf springs, and the rear set of follower plates. As the
35 cars are drawn apart and the pressure released, the forward set of leaf springs, F, and the rear set of follower springs, C, would first be released; the coiled spring would then be released; and the shock of the recoil would
40 be received by the front set of follower plates, which would prevent injurious recoil shocks being conveyed to the next car. In this way, and by the use of several sets of springs and follower plates, arranged as shown and described, the shock of abutting cars will be
45 taken up and absorbed, so that no part will be liable to be injured by the force of a blow or shock, and, when the cars are separated—as in the starting of the train—the several
50 springs and follower plates, being released one after the other, will lessen or prevent the violent recoil that often takes place with the springs now in use.

In order to provide means for preventing
55 the withdrawal of the drawbar, and the consequent breaking of the train, should its attachments get away, I have arranged straps, G, that, commencing well back under the draft timber or sub-sill, pass around the front
60 end of the same, and back across the transverse head block G' , as shown in Fig. 1. These straps, as shown in the drawings, are attached to the sub-sill and main sill of the car and other parts by bolts, which secure
65 them in such an effective manner that it will be practically impossible to remove them without first taking out the bolts. Resting

upon the straps, is a cross bar g , on which the drawbar rests as it moves back and forth and whereby the drawbar is prevented from
70 falling. The head block has one corner g' extending down somewhat into the space between the draft timbers or sub-sills. This corner is on a line with the back edge of the bar g , so that if the attachments of the draw-
75 bar should give way, it could only be pulled forward until the U-shaped strap H, which passes around the rear end of the drawbar and presents abutting shoulders h above and below the drawbar, came into contact with
80 the transverse bar g and the shoulder g' of the head block, when the drawbar could be drawn out no farther, but would be held in place, thus preventing the breaking or separation of the train.

85 Although I have described the various parts with considerable minuteness and detail, yet I wish it to be understood that I intend to use some of them separately or in connection with other parts, and do not therefore desire to be limited strictly to their use
90 in connection with the parts shown. Thus, it is obvious that the bar G , or the draft plates D, could be used in connection with the old style drawbars and follower plates, and I
95 therefore mention this, so that no one will suppose that I am limited to the use of all the parts shown and described, instead of being entitled to use them together or separately as I may deem best.

100 What I regard as new, and desire to secure by Letters Patent, is—

1. In draft rigging, the combination of a drawbar, transverse spring follower plates, and means for supporting the drawbar and the
105 follower plates in position, substantially as described.

2. In draft rigging, the combination of a drawbar, two sets of transverse spring follower plates at the rear end of the drawbar, a coiled spring interposed between the sets
110 of follower plates, and means for supporting the drawbar and the springs in position, substantially as described.

3. In draft rigging, the combination of a drawbar, transverse spring follower plates, and recessed draft plates for the ends of the follower plates having one side of the recess
115 removable to permit their withdrawal or insertion, substantially as described.

4. In draft rigging, the combination of a drawbar having a flange or shoulder thereon near its front end, a front set of transverse leaf springs near the front end of the draw-
120 bar and back of the flange or shoulder thereon, and means for supporting the drawbar and the springs in position, substantially as described.

5. In a draft rigging, a recessed draft iron provided with one hinged side, whereby the
125 draft iron can be opened for the insertion or withdrawal of the follower plates, &c., substantially as described.

6. In a draft rigging and as a new article

of manufacture, a spring follower plate, substantially as described.

7. A draft rigging provided with transverse spring follower plates, between which the ordinary spring is located, substantially as described.

8. The combination with the draft irons and draft rigging of straps inclosing the end, top and bottom of the sub-sill and head block, a draw bar provided with shoulders, a cross bar,

and a head block, the straps, cross bar, shoulders and head block acting independently of and supplemental to the draft rigging and irons to prevent the withdrawal of the drawbar in case of accident, substantially as described.

JAMES A. HINSON.

Witnesses:

THOMAS A. BANNING,
SAMUEL E. HIBBEN.