

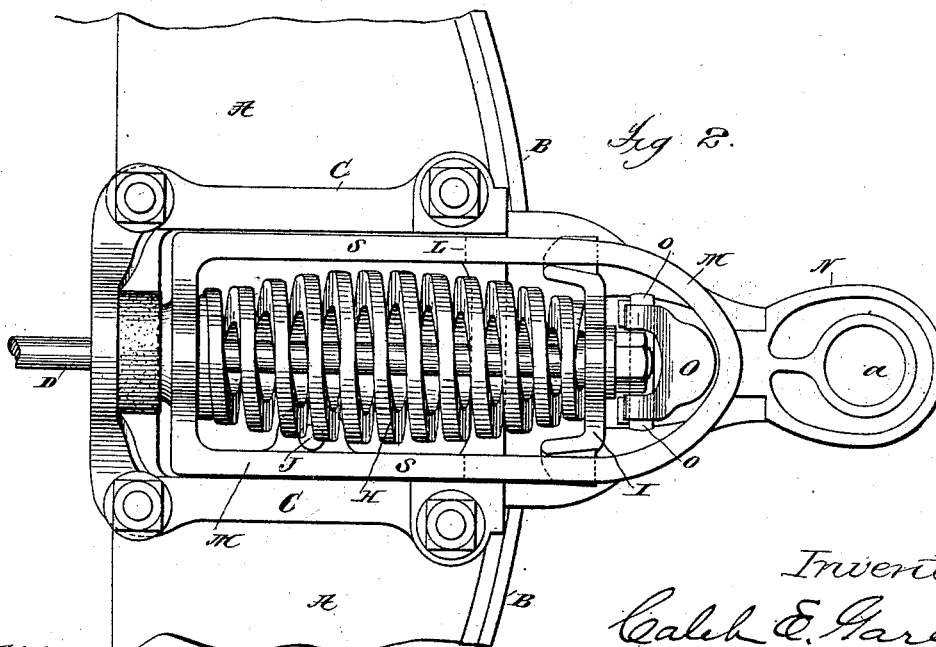
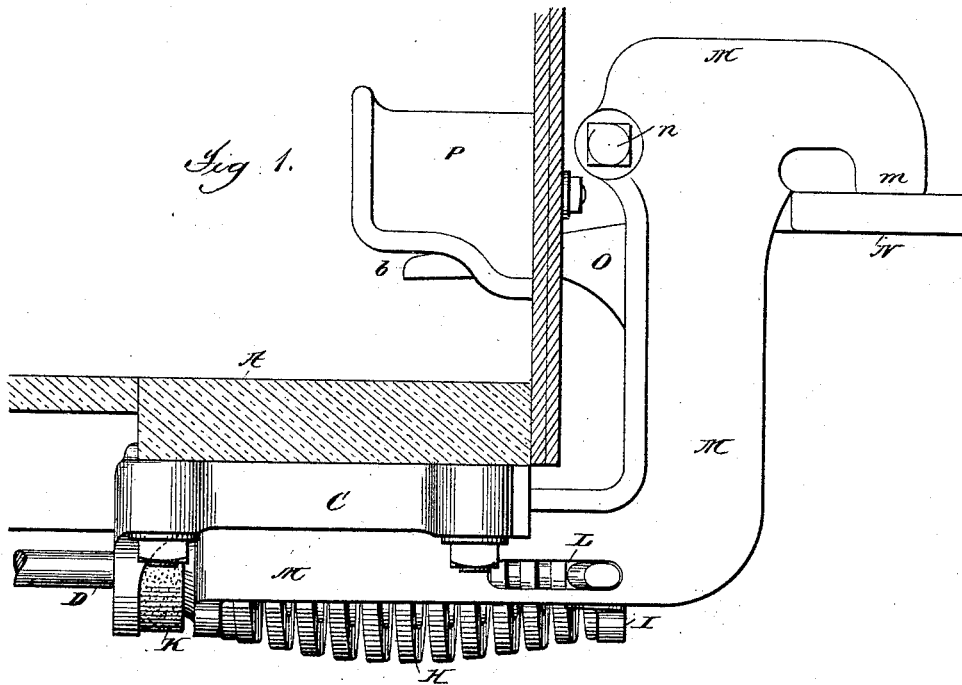
(No Model.)

3 Sheets—Sheet 1.

C. E. GAREY.
DRAW HOOK FOR STREET CARS.

No. 418,454.

Patented Dec. 31, 1889.



Attest
Geo. H. Butts
J. Kennedy

Inventor
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By Philip P. Hays

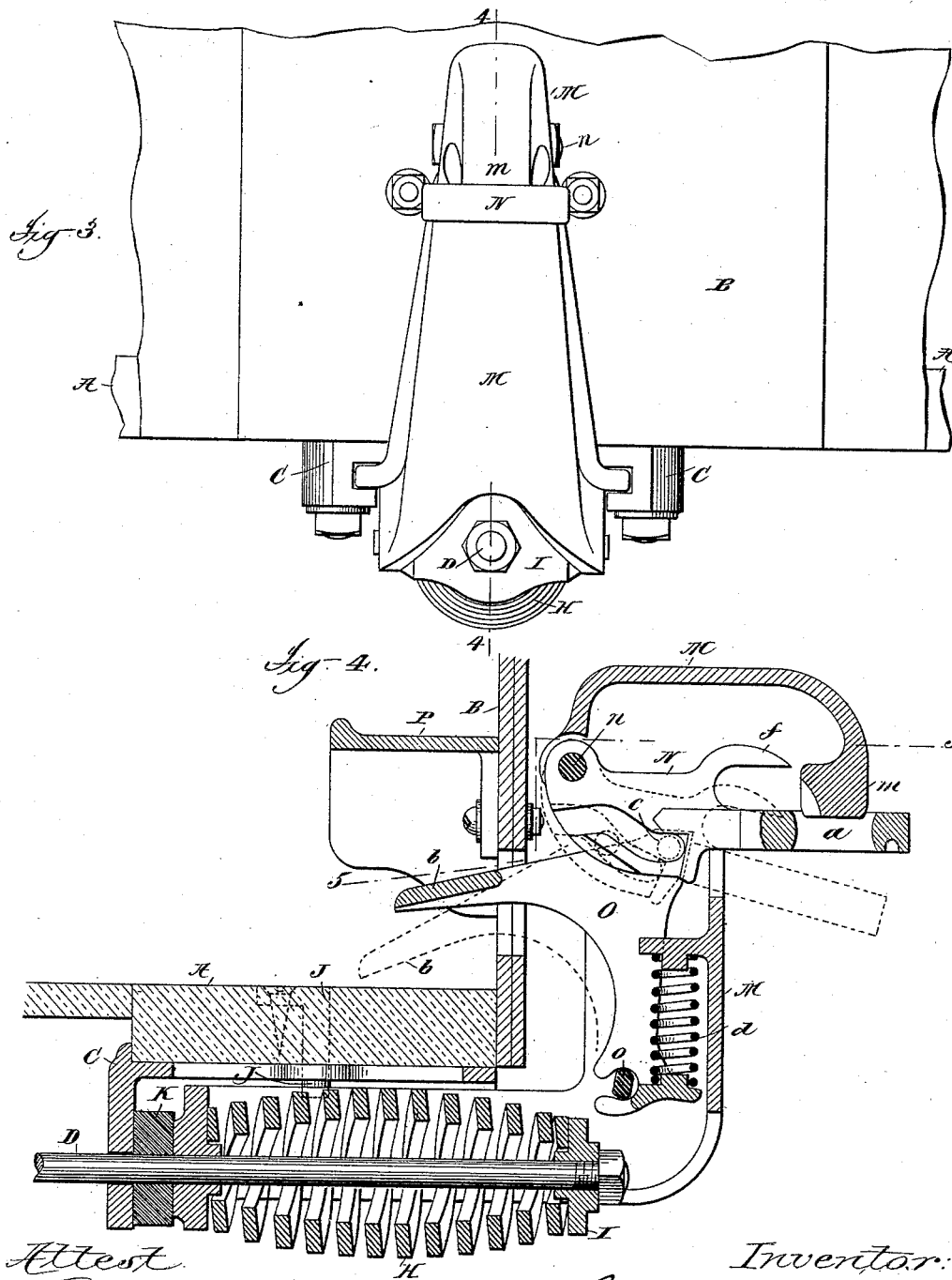
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3 Sheets—Sheet 3.

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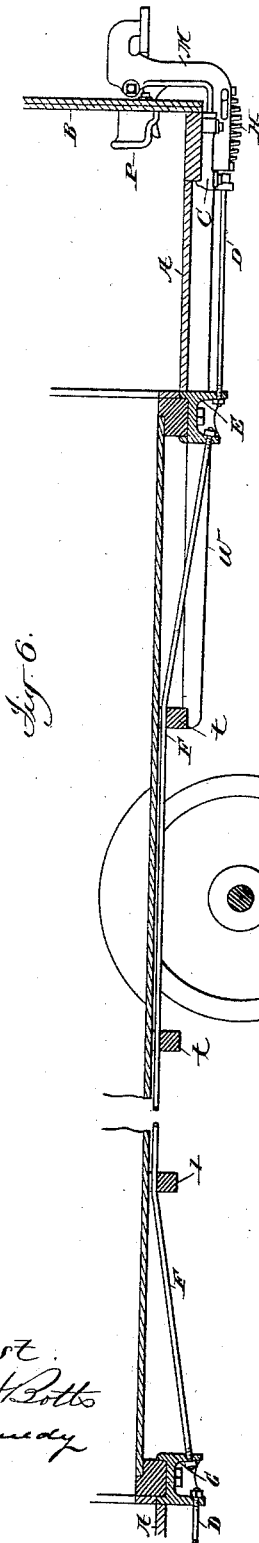


Fig. 6.

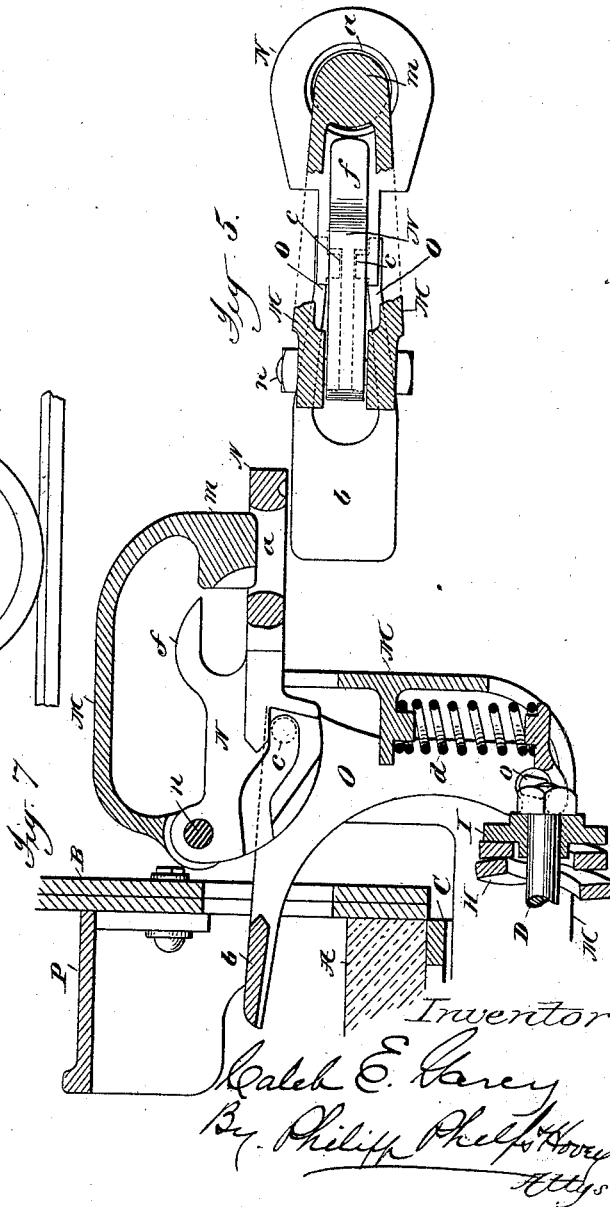


Fig. 5.

Fig. 7.

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UNITED STATES PATENT OFFICE.

CALEB E. GAREY, OF NEW YORK, N. Y.

DRAW-HOOK FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 418,454, dated December 31, 1889.

Application filed October 8, 1889. Serial No. 326,306. (No model.)

To all whom it may concern:

Be it known that I, CALEB E. GAREY, a citizen of the United States, residing at New York, county of New York, and State of New York, have invented certain new and useful Improvements in Draw-Hooks, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to a draw bar and hook which is designed especially for use upon street-cars.

It is the object of the invention to provide a hook from which it will be practically impossible for the team to become detached either accidentally or by reason of side draft, and which is at the same time so constructed that the driver can instantly detach the team no matter whether they are drawing upon the hook or not.

It is also the object of the invention to provide a hook to which it will be easy to attach the team when making ready for a start and from which it will be easy to detach it when a change is required.

In the accompanying drawings, which illustrate the invention, Figure 1 is a side elevation of the hook, showing it applied to a car. Fig. 2 is a bottom plan view of the same. Fig. 3 is a front elevation of the same. Fig. 4 is a longitudinal vertical section taken on the line 4 4 of Fig. 3. Fig. 5 is a horizontal section taken on the line 5 of Fig. 4; and Fig. 6 is a longitudinal section of the bottom portion of the car, showing the manner in which the hook is connected to the frame-work to equalize the strain upon the car. Fig. 7 is a view similar to Fig. 4, but showing the hook so shaped as to lower the point of draft.

Referring to said drawings, it is to be understood that A represents the platform at one end of an ordinary street-car, and B the dash-board at the front end of the platform. The draw hook or bar M is secured to the car beneath the platform, and its rear end forms a rectangular frame S, which is arranged to have a limited sliding motion between guides C, secured to the bottom of the platform. The draft upon the hook is transmitted to the car through a rod D, which passes rearward beneath the platform and is secured to a casting E, which is fastened to the cross-beam of

the car. In order to relieve the beam of a part of the strain of the draft of the car, it is connected by a rod F, which passes longitudinally under the car to a casting G, located upon the similar beam at the opposite end of the car. By this means the draft is distributed between the two beams, so that neither is subjected to a strain which is likely to wrench it. It has heretofore been customary to attach the hook in such manner that the draft was exerted upon the platform, and this has proved objectionable in practice because of the tendency to draw the platform away from the car. By the present arrangement the strain of the draft is distributed between the different parts of the frame of the car in such manner that no one part is subjected to undue strain. The rod F also performs an important function in supporting the platforms. It will be observed that the rod passes above the intermediate beams *t*, and it will also be observed that the platform is supported upon longitudinal beams *w*, the inner ends of which bear upward against the beam *t*. It will be apparent from this construction that the rod F will act as a truss to support the beam *t* against upward pressure, and thus hold it in place and prevent the platform from sagging. The draft of the hook is communicated to the rod D through the medium of a spring, as is usual. This spring H is of the ordinary form employed for this purpose and surrounds the rod D, it being located in the frame S and interposed between a cross-bar I, fixed on the end of the rod, and the rear end of said frame, as best shown in Figs. 2 and 4. By this means the spring is compressed more or less when extraordinary draft is put upon the hook, as in starting the car, thus relieving the car from strain and making the starting of the car more easy for the draft-animals. The recoil of the spring when the draft of the hook is reduced to the normal or below the normal point is taken up by a buffer K, interposed between the hook and the rear portion of the guide C.

The cross-bar I, which is secured to the front end of the rod D, is extended and enters guide-slots L, formed in the sides of the frame S. This operates to guide the forward end of the rod and prevent it from becoming sprung to one side by the tension of the spring, and also

tends to materially strengthen the connection between the hook M and the car.

The hook M bends upward in front of the dash, as best shown in Fig. 1, the height to which it extends being determined by the point at which it is desired to apply the draft. It then bends forward and downward, terminating in the hook proper *m*, which receives the link connecting the team to the car.

In Figs. 1 to 6 the hook is shown so formed as to make the point of draft comparatively high, while in Fig. 7 it is so formed as to bring the point of draft but a trifle above the car-platform.

It will be observed that this hook, contrary to the usual plan which has heretofore been pursued, extends downward, so that the link is placed upon it from beneath. This makes it necessary to employ a latch to retain the link in place, and for this purpose there is provided a latch N, which is pivoted in a recess in the hook, as indicated at *n*, and is arranged to be closed up against the lower end of the hook *m*, so as to retain the link in place.

The latch N is preferably provided with an opening *a*, into which the end of the hook *m* enters for a short distance, as indicated in Fig. 4. The latch N is operated by means of a treadle-lever O, which is fulcrumed in a recess in the hook M, as indicated at *o*. This treadle-lever is of bell-crank form, one arm passing through an opening in the dash and forming the treadle *b*, located in a convenient position to be operated by the foot of the driver. To prevent the accidental operation of the treadle by the driver or by passengers on the platform, it is covered and protected by a hood P, secured to the dash.

The treadle O is bifurcated so as to straddle the latch N, and is provided with studs *c*, which enter cam-shaped grooves formed in the sides of the latch, the grooves being of such shape, as best shown in Fig. 4, that when the treadle is in its depressed position, as indicated by dotted lines in said figure, the latch will be lowered away from the hook *m*, to permit of the introduction and removal of the link, while when the treadle is in its normal or raised position the studs *c* will act to raise the latch and lock it in its raised position, as indicated by full lines in Fig. 4, so as to hold the link securely on the hook *m*. The treadle-lever is normally held in position to hold the latch in its raised position by means of a spring *d*, which acts upon the front side of the lever, as shown in Fig. 4.

The operation of the organization thus described is as follows: To attach the team to the car, the driver depresses the treadle and by means of a hand-hook lifts the link of the evener or whiffletree, as the case may be, into position above the latch and beneath the hook *m*. By then removing the pressure from the treadle the spring *d* operates to restore the latch to its normal position, thereby carrying the link onto the hook *m* and locking it thereon. It will now be seen that it is prac-

tically impossible for the link to become detached from the hook *m* by any accidental means or by side draft, as it is held securely in its position by the latch, it being impossible for there to be any appreciable down-draft, as there is very little strain put upon the latch. In starting and stopping and in all other cases where extra draft is put upon the hook and where the draft is suddenly reduced, the spring H and buffer K operate in the usual manner to prevent shock and strain, and also to prevent noise upon the recoil of the spring H. To detach the team, the driver simply presses the treadle *b*, thereby lowering the latch. The link will then drop by its own weight from the hook. It might sometimes happen, particularly in case of an emergency, that the driver would wish to detach the team when there was draft upon the link, and in such case the link might not fall from the hook by its own weight. To insure the detachment of the link in such case and in other cases, the latch is provided with a lip *f*, which extends above the link, so that when the latch is depressed by the operation of the treadle the lip *f* will engage with the upper side of the link and force it down and off the hook.

It is desirable to provide means by which, in case the rod D should become broken, the hook will not become detached from the car, but will remain attached, so as to permit the car to complete its trip. For this purpose the platform directly above the frame S is provided with a downwardly-projecting stud J, which extends into the frame so as to engage therewith and prevent it from being withdrawn from the guide C in case the rod D becomes broken.

What I claim is—

1. The combination, in a draw-hook, of the hook for receiving the link, the latch by which the link is supported in position upon the hook, and the treadle in position to be worked by the driver for operating the latch to release the link, substantially as described.

2. The combination, in a draw-hook, of the hook for receiving the link, the latch by which the link is carried onto and held in position upon the hook, and the treadle in position to be worked by the driver for operating the latch to release the link, substantially as described.

3. The combination, in a draw-hook, of a downwardly-extending hook for receiving the link, a latch for retaining the link in position upon the hook, and a treadle in position to be worked by the driver for operating the latch to release the link, substantially as described.

4. The combination, in a draw-hook, of the hook for receiving the link, the latch for retaining the link in position upon the hook, the treadle in position to be worked by the driver for operating the latch to release the link, and the hood for protecting the treadle, substantially as described.

5. The combination, in a draw-hook, of the

downwardly-extending hook for receiving the link, the pivoted latch for holding the link in position upon the hook and having the lip *f* extending above the link, and the treadle for operating the latch, substantially as described.

6. The combination, in a draw-hook, of the hook for receiving the link, the pivoted latch for holding the link in position upon the hook, the treadle for operating the latch to release the link, and the spring *d* for holding the treadle and latch in position to retain the link upon the hook, substantially as described.

7. The combination, with the hook M, containing the spring H and arranged to have movement in the guides C, of the rod D, connected to said hook and extending rearward beneath the car-platform and connected to the car in the rear of the platform, and the buffer K, interposed between the guide C and the hook, substantially as described.

8. The combination, with the hook, of the

rod D, connected to the hook and to a beam of the car in the rear of the platform, and the rod F, also connected to said beam and passing above a cross beam or beams between the ends of the car, substantially as described.

9. The combination, with the hook M, containing the spring H and arranged to have movement in the guides C, of the rod D, connecting the hook to the car through the medium of the spring, and the stud J, secured to the platform and projecting into a recess in the hook, to prevent the latter from becoming detached from the car in case the rod D breaks, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

CALEB E. GAREY.

Witnesses:

J. J. KENNEDY,
T. H. PALMER.