

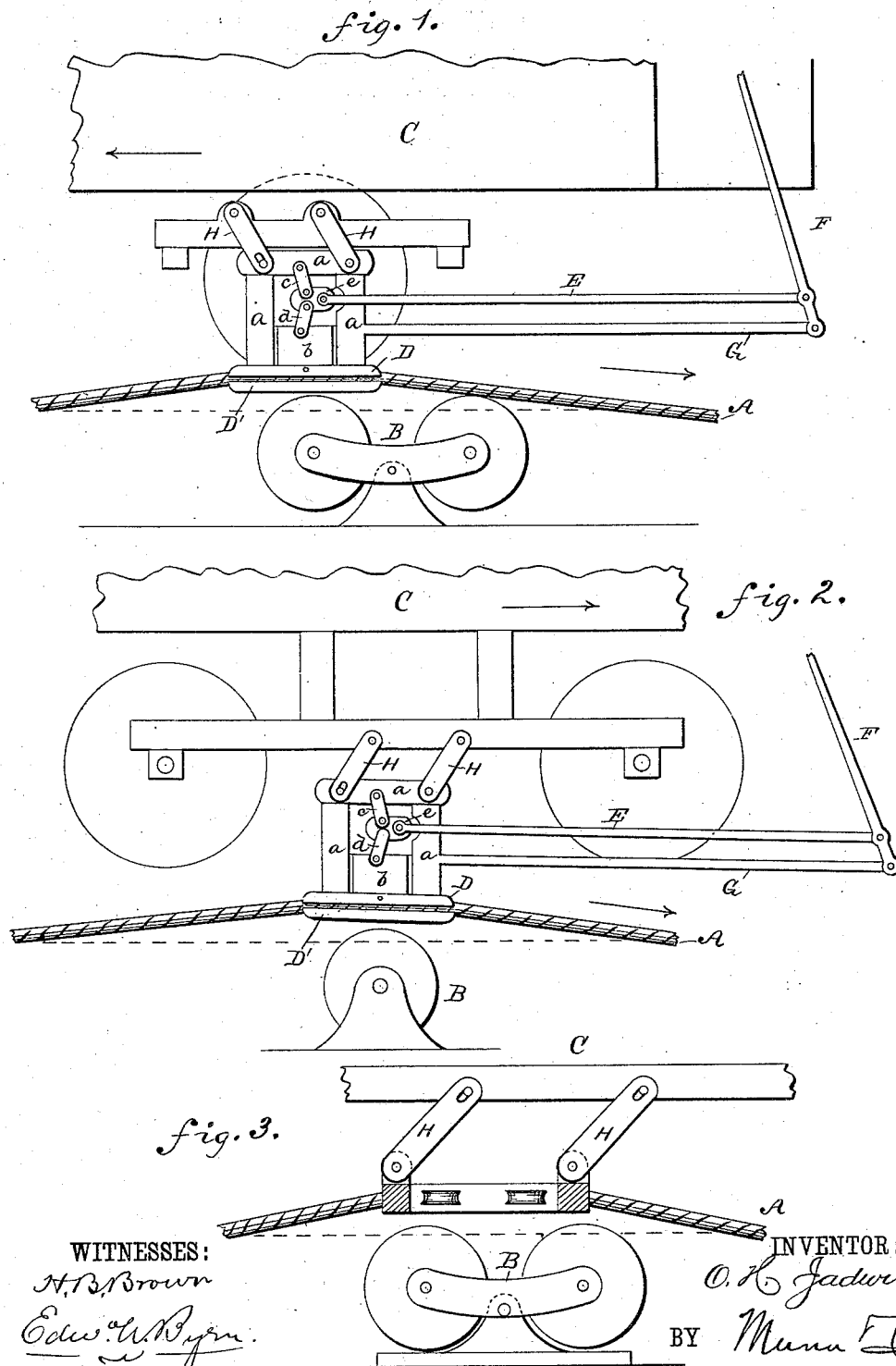
(No Model.)

O. H. JADWIN.

GRIPPING ATTACHMENT FOR TRACTION CABLE SYSTEMS.

No. 307,306.

Patented Oct. 28, 1884.



UNITED STATES PATENT OFFICE.

ORLANDO H. JADWIN, OF NEW YORK, N. Y.

GRIPPING ATTACHMENT FOR TRACTION-CABLE SYSTEMS.

SPECIFICATION forming part of Letters Patent No. 307,306, dated October 28, 1884.

Application filed April 22, 1884. (No model.)

To all whom it may concern:

Be it known that I, ORLANDO H. JADWIN, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Gripping Attachments for Traction-Cable Systems, of which the following is a description.

Figure 1 is a side view of my invention, showing by the arrows the strain of the car-load as opposed to the travel of the cable, as in going on level ground or up a hill. Fig. 2 shows a similar view with the strain of the car-load in the same direction as the travel of the cable, as in going downgrade. Fig. 3 shows a horizontal gripper instead of a vertical one, as in Figs. 1 and 2.

The object of my invention is to provide a form of gripping attachment for connecting a car to a traction-cable, which, when connected to the cable and the strain of the latter is on it in either forward or backward direction, will cause the gripping attachment to pull slightly out of the normal line of the cable, and allow the gripping devices to pass freely by the supporting-pulleys or cable-guides, and thus avoid the hammering and thumping of the gripper against said pulleys or guides. Another object is to provide means for closing the gripper upon the cable with a very slight movement of the operating-bar, and without interfering with the free swinging movement of the gripper. These objects are attained in my invention, which I will now proceed to describe.

In the drawings, A represents the cable, and B the supporting-pulleys for the same. C is any portion of the car which remains a constant or nearly constant distance from the cable—such as the car-axle, axle-frame, or truck. D D' are the two jaws of the gripper. The lower one of these jaws is attached to the frame *a*, and the upper one to the shank *b*, moving in said frame.

To close the gripper upon the cable, the upper jaw, D, and its shank *b* are forced downward. For this purpose toggle-arms *c d* are used, one of which, *c*, is jointed to the frame *a*, and the other, *d*, to the shank *b*, while the inner ends of both said toggle-arms are jointed

to a block, *e*, connected by a rod, E, with a hand-lever, F, which lever is fulcrumed upon a horizontal arm, G, projecting from the frame *a*. Now, by swinging this lever in one direction, the toggle-arms are spread out and the gripper closed, while the reverse movement draws them together and opens the gripper, and in this movement it will be seen that the motion of the lever required to open or close the gripper is very slight, as the throw of one of the toggle-arms is added to the throw of the other, all without interfering with the swinging of the gripper, as the thrust and pull of the arm G and rod E neutralize each other. Now, for connecting the gripper to the car, two parallel swinging bars, H H, are used, the lower ends of one or both of which may be loosely jointed to the frame *a*, while the upper ends are jointed or pivoted to any portion of the car. These swinging supports for the gripper constitute a very important part of my invention, for they not only transmit the strain of the cable to the car, but when said strain is transmitted the pull on the frame *a* causes the swinging bars H H to have a slight radial movement, and this lifts the gripper and the cable slightly, as shown in Fig. 1, so that the gripper in passing over the supporting-pulleys does not involve destructive hammering or thumping action on the pulleys, which has a very damaging effect to both the cable and the gripper, but permits the passage to be made smoothly, and lessening the noise, jar, or breakage. In some instances, when the car is well loaded and going downgrade, the car will have a tendency to go faster than the cable, and the direction of the strain is reversed. My invention provides equally well for this contingency, for the bars H H then swing in the reverse direction, as in Fig. 2, and still lift the gripper away from the pulleys. The bars H H may be arranged vertically, as in Figs. 1 and 2, or they may be arranged for a horizontal gripper, as in Fig. 3, or they may occupy any other relation, the principle of operation in drawing the cable and gripper out of the normal path of the cable, when the strain is on, being the same and securing the same result of relieving the cable-supports and the gripping devices from thump and jar.

My invention also secures the advantages of

a flexible connection between the gripper and car, that permits the gripper to follow the movements of the cable at points between the pulleys.

5 Having thus described my invention, what I claim as new is—

10 1. The combination, with a car, of a gripping attachment for the traction-cable attached to the car by supports arranged to swing longitudinally with or in the plane of the cable, substantially as described.

15 2. The combination, with a car, of a gripping attachment for the traction-cable, and intermediate devices connecting it to the car, substantially as described, whereby the gripping devices, with cable, are lifted or moved

away from the normal line of the cable when a strain is transmitted through said connection, as described.

3. The combination, with the car and its 20 gripping devices, of the intermediate parallel swinging connecting-bars, H H, as and for the purpose described.

4. The combination, with the two jaws in a swinging cable-gripping device, of a pair of 25 toggle-arms and a rod for opening and closing the same, all freely swinging with the gripper, as described.

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