(No Model.)

R. FORWARD.

CAR COUPLING.

No. 250,905. Patented Dec. 13, 1881.

Fig. 2.

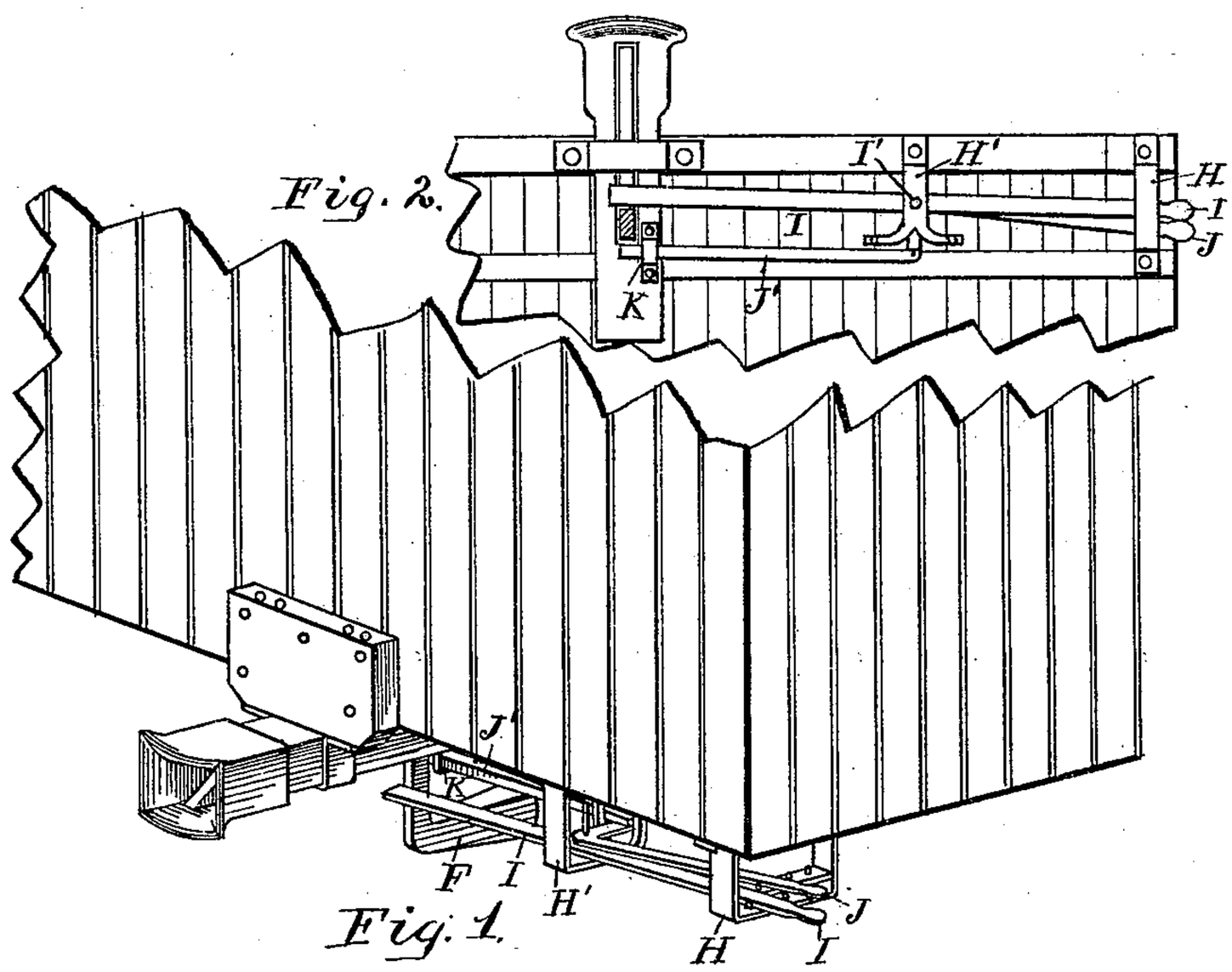

Fig. 1.

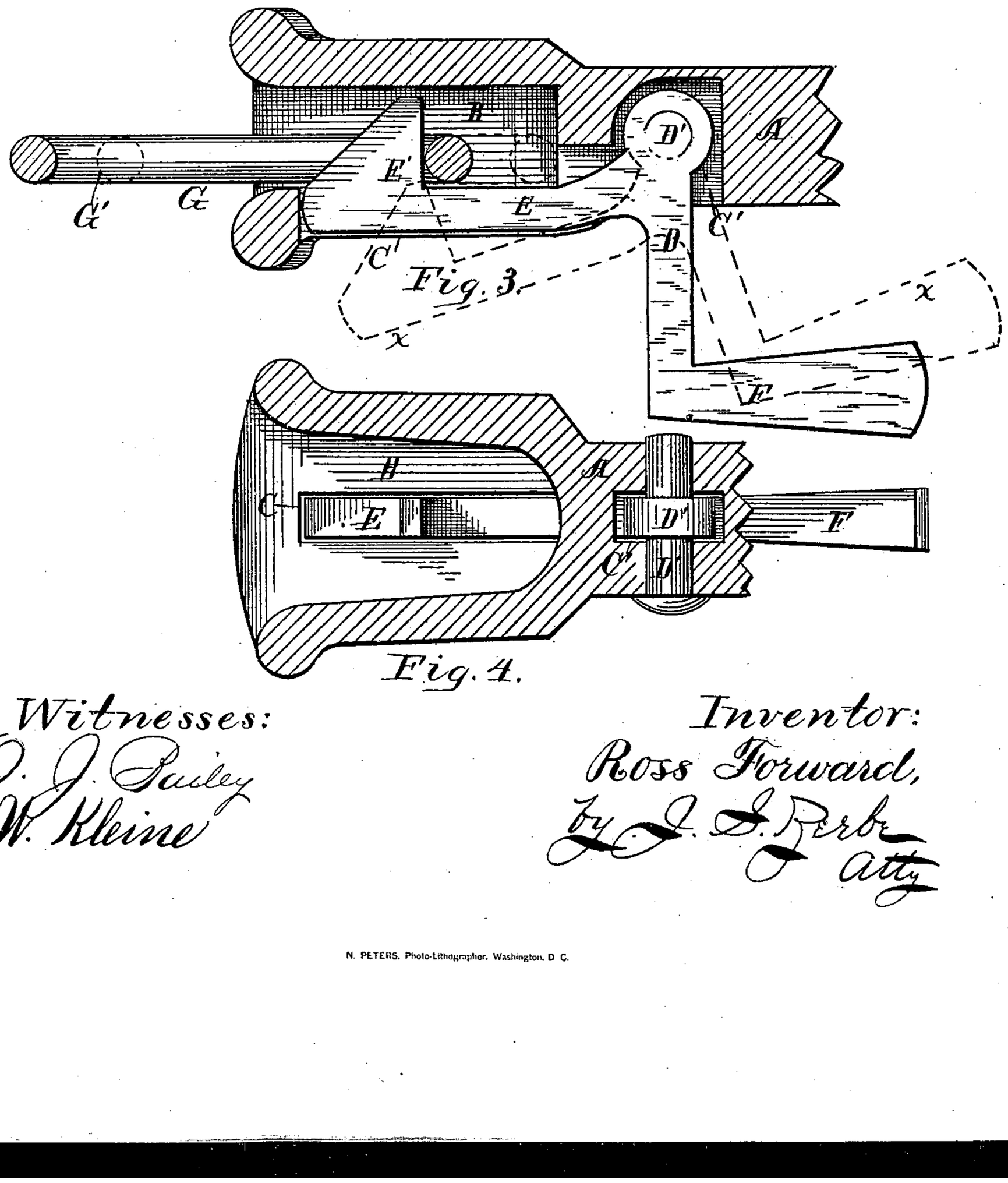

Fig. 3.

Fig. 4.

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UNITED STATES PATENT OFFICE.

ROSS FORWARD, OF CINCINNATI, OHIO.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 250,905, dated December 13, 1881.

Application filed October 3, 1881. (No model.)

To all whom it may concern:

Be it known that I, ROSS FORWARD, of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and useful Improvement in Car-Couplers, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a perspective view of the end of a car having a coupler of my improved construction. Fig. 2 is a view of the under side of the car. Fig. 3 is a vertical central longitudinal sectional view of the draw-head, and Fig. 4 is a horizontal central longitudinal sectional view of same.

The object of my invention is to provide a simple and effective automatic coupler for railroad-cars; and it also provides for locking the link when once coupled, and a means for uncoupling without compelling the operator to enter between the cars.

It consists of a draw-head constructed in a peculiar manner within and having a longitudinal slot through the lower wall of the draw-head to receive a latch or hooked lever, the rear end of which is hinged to the draw-bar and has a limb projecting downward from the pivotal point, the lower end of the limb carrying a rearwardly-projecting weight, whose action tends to keep the hooked lever raised by the force of gravity, so as to prevent the link from uncoupling. A suitable latch or bar, whose inner end passes behind the downwardly-projecting limb, is connected with a lever and extends to the side of the car for locking the hooked lever, and another lever having its inner end in front of the downwardly-projecting limb, and extending also to the side of the car, serves to disconnect the coupler, all of which will now be described in detail.

In the drawings, A represents the draw-bar, and B the mouth of the draw-head, which I design constructing in such a manner that the throat will be about as deep as two-thirds the length of the link G, so that when the link is placed in the throat as far as indicated by the dotted lines G′ the projecting end will not overbalance and cause it to fall out. The lower wall of the draw-head has a slot, C, and this slot projects back and into a portion of the draw-bar proper, forming a cavity, C′. A lever, E, having its rear end hinged in the cavity C′ by means of the pin D′, is provided at the forward end with a hook, E′, which projects upwardly into the mouth or throat B of the draw-head. A limb, D, projects downward from the pivotal point D′, and at the lower end of this limb it is enlarged and bent rearwardly at right angles F, as shown. It will thus be observed that the weight F, acting by force of gravity, causes the lever E to remain in a horizontal position.

On the under side of the car, near one or both sides, a guard, H, is placed, and midway between this and the draw-bar a bracket, H′. A bell-crank lever, J, hinged at the angle to the bracket H′, has one limb extending out to the guard H, while the other limb of this lever is hinged to a sliding latch, J′, the inner end of which passes through the staple K and to the rear of the vertical limb D. The hinged lever accommodates itself to the inward and outward movement of the draw-bar, as no lever with its fulcrum on the body of the car could do without some provision for this movement.

I represents a lever pivoted centrally also to the bracket H′, with its outer end resting in the guard H and its inner end passing to the front of the limb D.

The operation of the coupler is as follows: The outer end of the bell-crank lever J is drawn forward. This movement causes the end of the latch J′ to be withdrawn from the rear side of the vertical limb D. The link G from the opposing car now enters the mouth of the draw-head, and in so doing strikes the inclined surface of the hook E′, depressing it, as shown by the dotted lines *x*, Fig. 3. The end of the link thus passes beyond the hook E′, when the latter again assumes its original position and completes the coupling operation, the lever J being first drawn back to its original position and fastened in the guard.

To uncouple I employ the lever I. The outer end of this is pressed forward or backward, as may be required, causing the inner end to move rearwardly, taking with it the limb D, as shown by the dotted lines *x* in Fig. 3. Suitable lugs affixed to the guard-plate H hold the hook E′ in this position until released.

It is obvious that levers attached to the sides or ends of the cars may be connected below with the levers I J and extend up to the

tops of the cars for performing the uncoupling or latching operations.

It will be observed, by reference to Fig. 3, that the line of draft in the coupling-link is below the line of the pivot-pin D′, thereby preventing the hook from uncoupling in a measure.

I am aware it is not new, broadly, to employ a hooked lever for engaging the coupling-link, said lever being pivoted to the rear of the draw-bar to the rear of the draw-head, and I do not therefore claim this. My present invention has special reference to the form of the latch or coupling hook, the manner of its attachment to the draw-bar, and the construction of the depth of the mouth of the draw-head relatively to the length of the link. The lever containing the hook, as will be observed, projects forward from the pivot-pin below the line of draft, and has a hook at right angles to the limb of the lever, thus not only obviating the objections to the curved hooks, (which require a slack in the link before the hook can be moved,) but also permits a solid wall to be made in the rear end of the mouth of the draw-head, against which the link impinges when entering from the opposing car. As previously observed, the depth of the mouth of the draw-head is so proportioned to the length of the link that when the link is placed in the mouth only one-third of the link will project from the draw-head, and this projecting end will be sufficient to couple with a draw-head containing this improvement.

Having described my invention, what I claim is—

1. In a car-coupler, the latch or coupling lever E, having at its forward end the hook E′, projecting upward at right angles to the line of the lever E, the rear end of said lever being bent upwardly and secured by a pivot-pin to the draw-bar to the rear of the mouth of the draw-head, and having a pendant, D, projecting downward from this pivotal point, substantially as and for the purpose herein shown.

2. In a car-coupler, the combination of said latch or lever E, having the pendant or limb D, with the bell-crank lever J, having the sliding latch to the rear of the pendant, and the lever I, extending to the front side of the pendant, as and for the purpose herein shown.

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