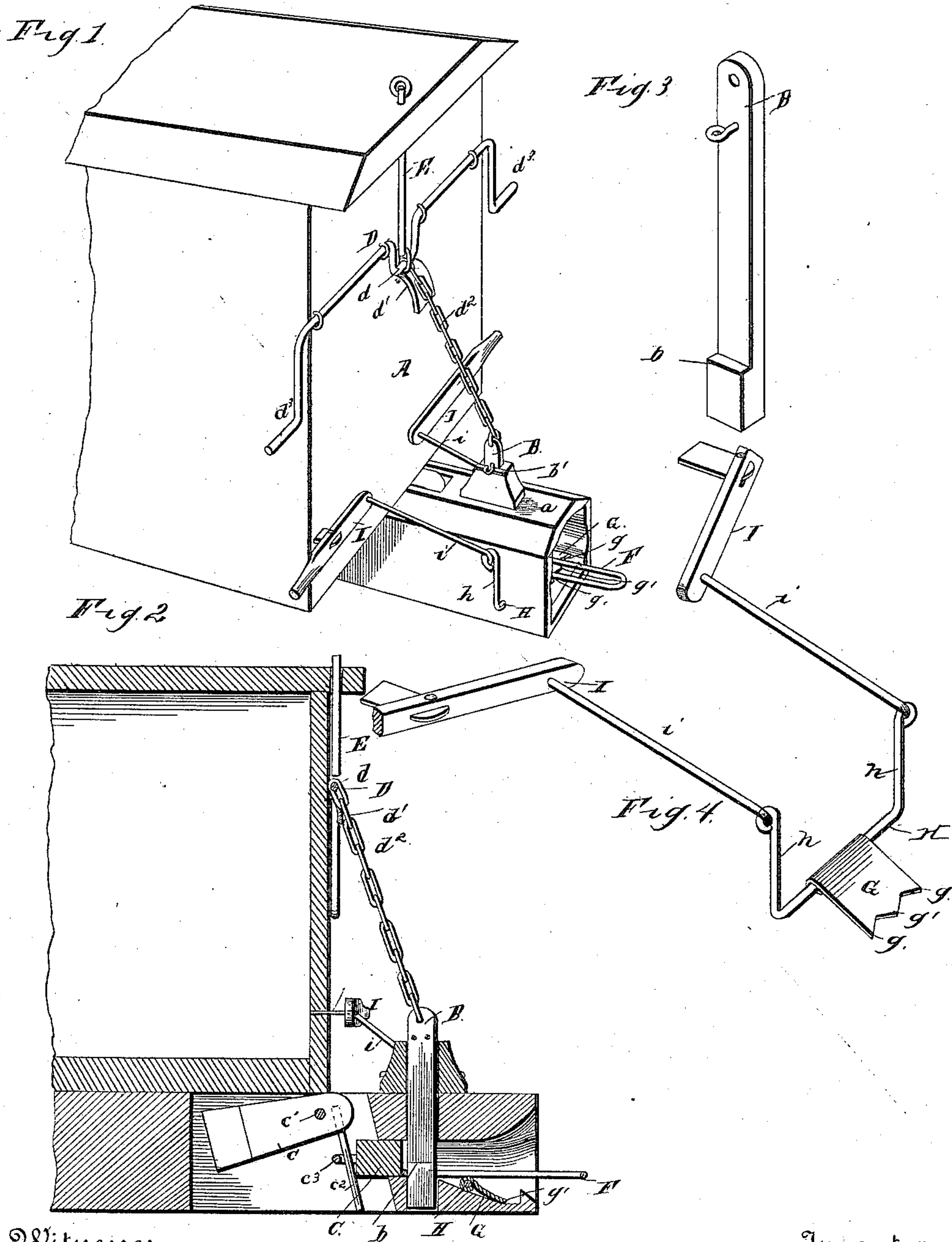


(No Model.)

A. N. HALL.
CAR COUPLING.

No. 363,385.

Patented May 24, 1887.



Witnesses

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UNITED STATES PATENT OFFICE.

ALEXANDER NELSON HALL, OF JACKSONVILLE, ILLINOIS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 363,385, dated May 24, 1887.

Application filed March 19, 1887. Serial No. 231,575. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER NELSON HALL, a citizen of the United States, residing at Jacksonville, in the county of Morgan and State of Illinois, have invented new and useful Improvements in Automatic Car-Couplings, of which the following is a specification.

My invention relates to improvements in car-couplers, the objects being to obviate the necessity of the brakeman going between the cars to couple and uncouple the same, and to provide a device that will couple automatically. These objects I attain by means of the construction and novel arrangement of parts hereinafter described, embraced in the appended claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a car with my invention attached. Fig. 2 is a central vertical longitudinal section of the coupler. Fig. 3 is a perspective view of the coupling-pin detached. Fig. 4 is a perspective view of the link-lifter detached and the operating mechanism thereof.

Referring to the drawings, A designates the end of a car, and *a* the draw-head, secured thereto in the usual position.

B is the coupling-pin passing through the upper pin-opening, which runs through a block secured to the upper side of the draw-head, and having its lower part provided with a shoulder, *b*, to strike against a plate or bar, *b'*, secured across one side of the upper orifice of the said pin-opening, and prevent the pin from being detached from the draw-head.

C is a block fitting and sliding in the recess of the draw-head in rear of and below the pin; and *c* is a lever-bar, pivoted at *c'* within the draw-head in the rear of the block C, and provided near its front end with a downwardly-extending rod, *c²*, which passes through a loop or staple, *c³*, secured to the rear surface of the block. The lever-bar, being pivoted near its front end, will, when free to turn, cause the rod *c²* to bear against the block C and force it under the end of the pin when the latter is raised and retain it up.

The means for raising the pin are as follows:

D is a horizontal crank-shaft turning in bearings secured to the end of the car a suitable distance above the coupling-pin, and having secured to the transverse bar of its central crank,

d, an outwardly convex plate, *d'*, upon which the chain *d²*, connecting the coupling-pin with the crank *d*, partially rolls when the shaft D is rotated by means of either of its crank-handles *d³* *d³*, situated outside of the space between the cars, so that the brakeman can lift the pin from either side of the cars without going between them. The curved plate causes the pin to be raised more rapidly than if the chain were lifted by the crank alone.

E is a vertical link-rod extending down through suitable supports from the top of the car, with its lower end loosely connected to the crank *d*, and having a handle on its upper end to enable the brakeman to lift the pin from a position on the roof of a car.

The mechanism for lifting the outer end of the link to different elevations for the purpose of causing it to enter opposite draw-heads of different heights is as follows:

F is the link retained in the draw-head by the pin, which is down.

G is a plate having its outer edge provided with two notches, *g g*, having their bottoms rounded and a central outstanding point, *g'*, between them, which point is situated centrally between the sides of the plate. The rear edge of the plate G is secured upon a transverse shaft, H, turning in bearings secured to the floor of the recess of the draw-head in front of the coupling-pin and below the link. The end portions, *h h*, of said shaft are bent at right angles and have their ends looped or hooked to connect with the looped ends of the link-rods *i*, the other ends of which are loosely connected to the ends of the inner arms of the levers I I, pivoted about centrally upon brackets secured in proper positions upon the end of the car.

The operation of the link-lifter is as follows: When the brakeman wishes to couple the car to which the device is attached to a car having a higher draw-head, he pushes the outer arm of either lever I outward, thereby causing the inner arm of said lever to move inward or toward the car it is attached to, thus, by means of the link-rod lifting the end parts, *h*, of the shaft H, rotating the said shaft, and consequently turning the lifting-plate or link-lifter upward. The link lies above the said lifter, with its bars in the grooves *g g* and the point *g'* within it, so that when the said plate

risers it lifts the outer end of the link with it and enables it to enter the higher draw-head. The grooves and point g' also hold the link straight and cause it to enter the opposite
 5 draw-head centrally. When the link enters the herein-described draw-head, it strikes the block C and, pushing it back, allows the pin to drop and couple with itself. The block C is prevented from slipping too far forward by
 10 means of the rod c^2 entering the staple c^3 .

The coupler thus, while quite simple of construction, will couple automatically, can have its pin lifted from either side or the roof of the car, and can have the link lifted to couple
 15 with a higher draw-head without the brakeman going between any two adjacent cars, and being put in danger of his life thereby.

Having described my invention, I claim—

1. In a car-coupler, the combination of the
 20 draw-head, the coupling-pin, the block sliding in the recess of the draw-head and provided with the staple on its rear side, the lever-bar pivoted near its front end in the recess in the draw-head in rear of the sliding block,
 25 and the rod extending downward from the lever-bar through the staple and bearing on the sliding block to cause it to move under the coupling-pin when raised and prevent the same from falling, substantially as described.

30 2. In a car-coupler, the combination, with the link of one draw-head, of the opposite draw-head, the coupling-pin thereof, the pivoted lever-bar, the rod depending therefrom, and the sliding block provided with a staple
 35 in its rear side to engage the depending rod,

and so situated as to be struck by the entering link and pushed thereby from under the point of the coupling-pin, substantially as described.

3. In a car-coupler, the combination, with the draw-head and coupling-pin, of the trans- 40
 verse crank-shaft journaled on the end of the car, the chain-plate secured to the crank thereon, the chain connecting said crank and the coupling-pin, the handles on the ends of the crank-shaft, and the link-rod loosely connected 45
 at its lower end to the crank, and having a handle on its upper end, whereby the brakeman can lift the pin from the roof of the car, substantially as specified.

4. In a car-coupler, the combination, with 50
 the draw-head, coupling-pin, and link, of the lifting-plate or link-lifter provided in its outer edge with the similar notches and the central point between said notches, the shaft having the inner edge of the lifting-link secured to it, 55
 turning in bearings secured to the floor of the draw-head recess in front of the pin and below the link, and having its end portions turned upward, the link-rods connecting the ends of said portions with the operating-levers, and 60
 the said levers pivoted about centrally on brackets secured to the end of the car, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in 65
 presence of two witnesses.

ALEXANDER NELSON HALL.

Witnesses:

MADISON M. HENDERSON,
 PATRICK O'HAGAN.