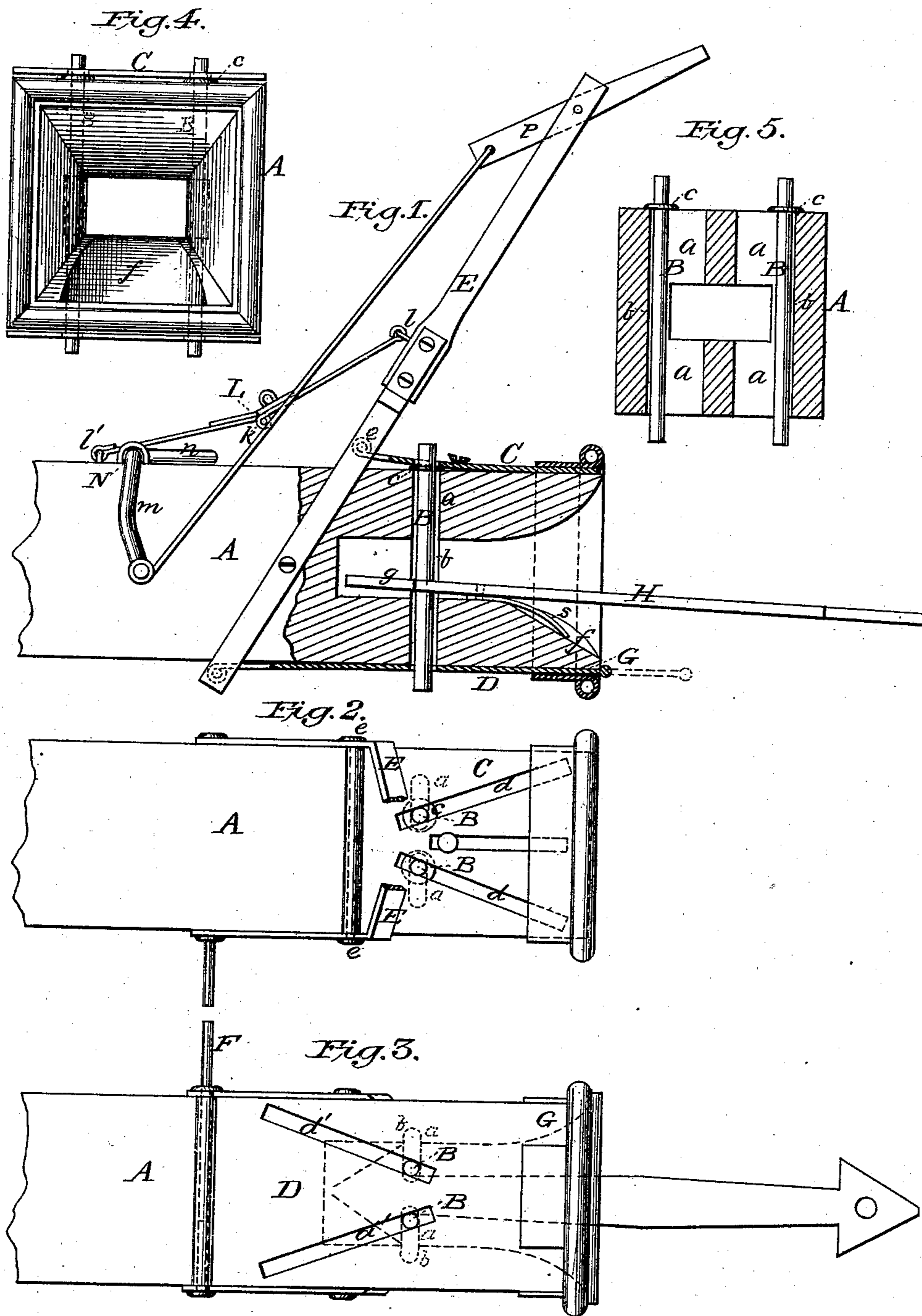


E. J. CLARK.  
Car-Coupling.

No. 223,794.

Patented Jan. 20, 1880.



WITNESSES

*John A. Ellis.*  
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INVENTOR

*Erastus J. Clark.*  
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*his* ATTORNEY

# UNITED STATES PATENT OFFICE.

ERASTUS J. CLARK, OF ST. JOSEPH, ASSIGNOR OF ONE-HALF OF HIS RIGHT  
TO J. L. RAY, OF CHAMPAIGN, ILLINOIS.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 223,794, dated January 20, 1880.

Application filed December 16, 1879.

*To all whom it may concern :*

Be it known that I, ERASTUS J. CLARK, of St. Joseph, in the county of Champaign and State of Illinois, have invented a new and  
5 valuable Improvement in Automatic Car-Couplings; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings,  
10 making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a side view and partial section illustrating the invention. Fig. 2 is a top view of the  
15 draw-bar. Fig. 3 is a bottom view of the same. Fig. 4 is a front view, and Fig. 5 is a transverse vertical section through the draw-bar.

This invention has relation to means for coupling cars; and it consists in the construction and novel arrangement of a draw-bar having transverse guide-slots and inside lateral  
20 recesses, laterally-sliding coupling-rods or catch-bars, and upper and lower slide-guides having inclined slots engaging with said coupling-rods, in the pivoted lever operating said  
25 slide-plates, and in the automatic locking-joint, all as hereinafter shown and described.

In the accompanying drawings, the letter A designates the draw-bar, having extending  
30 vertically through its top and floor portions the lateral transverse guide-slots *a*, whereof the walls of the outer ends extend through the middle portion or cavity of the draw-head and form recesses *b* in the side walls thereof.  
35 B B represent two vertical coupling-rods or catch-bars, which are seated in these slots, one on each side of the draw-bar, extending through the same from bottom to top and projecting to engage with operating-plates hereinafter described. These coupling-rods are provided  
40 with flanges or stops *c*, which rest on the top of the draw-head and prevent them from falling through.

C represents the short slide-plate, which is  
45 connected to the top of the draw-bar by suitable ways, and is provided with forward diverging slots, *d*, one on each side, which, respectively, engage with the upper projecting ends of the coupling-rods B. D indicates the  
50 long slide-plate, which is connected to the bot-

tom of the draw-bar by suitable ways, and is provided with rearward diverging slots, *d'*, which engage with the lower projecting ends of the coupling-rods. E designates the operating-lever, which is connected with the upper  
55 slide-plate by means of journals *e*, and with the lower slide-plate in a similar manner, the lower journal-bar being laterally extended, as indicated at F, to form an operating-handle at a low level, so that the working of the slide-  
60 plates can be effected from the ground. These slide-plates move at the same time, but in opposite directions.

In order to throw the coupling-rods laterally outward or away from each other the upper  
65 plate is moved to the rear, while the under plate is moved to the front, and may extend in front of the draw-bar, as indicated at G, this extension serving, when the draw-bars come together and it is pressed by their contact  
70 backward, to reverse the movement of the connecting-lever E and that of the slide-plates, thereby throwing the coupling-rods B B inward or toward each other into engagement with the lateral wings of the head *g* of the  
75 link-bar H.

Sometimes the slide D may be made short or without the extension G. In the engaged position the coupling-rods and their slide-  
80 plates are locked by means of an automatic or gravitating stop-joint, L, the sections or branches of which are hinged together at *k*, and connected, respectively, to the lever at *l* and draw-bar at *l'*.

A crank-shaft, N, extending across the draw-  
85 bar, is provided with a tongue, *n*, which, when said shaft is rotated upward, engages with the under portion of the locking-joint L and raises it at its middle hinge portion, so that it can be bent backward, and therefore allows the op-  
90 erating-lever E to be moved to the rear to separate the coupling-pins B B, as above described. When these coupling-pins are separated they move into the lateral recesses or seats *b* in the sides of the draw-bar in the  
95 cavity thereof, and are therefore out of the way of the head of the link-bar H, which becomes thus disconnected.

In order to operate the locking-joint from below its crank-arm *m* may be laterally ex- 100

tended from the side of the draw-bar, and in order to operate it from above a short lever, P, is pivoted to the top of the main lever and connected by a suitable rod with said crank-arm.

It is apparent that the separation of the coupling-pins B B, and the consequent disconnection of the link-bar from the draw-head, can be effected readily when the train is in motion, the disconnecting movement being lateral only.

In order to keep the link-bar in the central position the beveled lower face, *f*, of the draw-bar is made concave from side to side, so as to form a central hollow, into which the link-bar will gravitate, being aided in this by means of an under spring, *s*, extending obliquely forward from its head toward its middle portion. This under spring also serves to keep the link-bar in horizontal position, although the bar may be reversed, so that the spring will be upward when it is necessary that its outer end should be at a lower level to make the connection with the opposite draw-bar.

In order to make connection with an ordinary pin-coupler the end of the link-bar may be provided with a slot or opening.

Having described this invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, with a transversely-slotted draw-bar and coupling-pins or catch-bars B B in the transverse slots, of the upper and lower slide-guides, C and D, the operating-lever E, and the automatic lock H, substantially as specified.

2. The combination, with the transversely-slotted draw-bar and its vertical catch-rods B B in the transverse slots, of the short slide-plate C, having forward diverging slots, and the long slide-plate D, having rearward diverging slots and forward extension G for contact with the opposite draw-bar, substantially as specified.

3. The automatically coupling and locking draw-bar having transversely-moving catch-rods operated by slide-guides, and a gravitating lock, L, and a mechanism to operate said slide-guides and to raise the gravitating lock, all combined and arranged to operate as shown and described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

ERASTUS J. CLARK.

Witnesses:

NELSON B. IRONS,  
OSCAR MILLER.