W. H. MAPLE.
Car-Coupling.

No. 211,415. Patented Jan. 14, 1879.

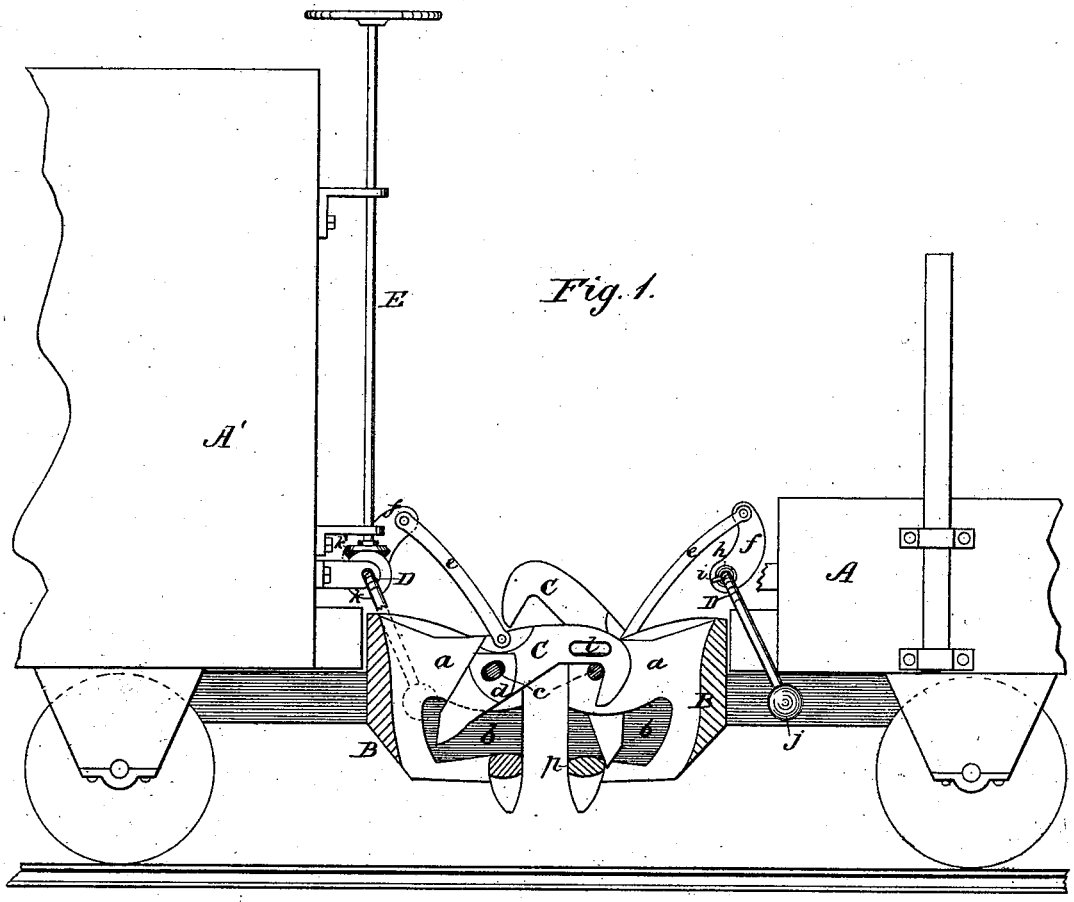
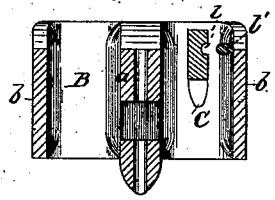


Fig. 1.

Fig. 4.



WITNESSES:
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2 Sheets—Sheet 2.

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Fig. 2.

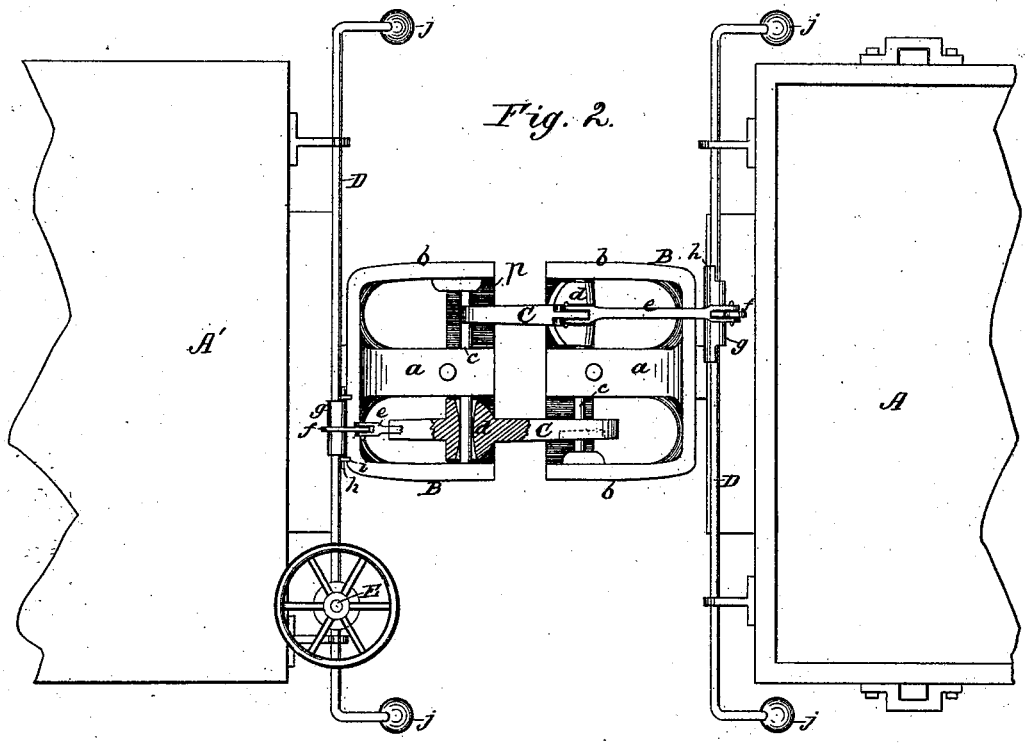
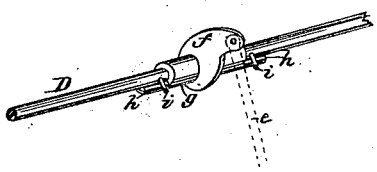


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM H. MAPLE, OF CHARITON, IOWA.

IMPROVEMENT IN CAR-COUPLINGS.

Specification forming part of Letters Patent No. **211,415**, dated January 14, 1879; application filed October 15, 1878.

To all whom it may concern:

Be it known that I, WILLIAM HENRY MAPLE, of Chariton, in the county of Lucas and State of Iowa, have invented a new and Improved Car-Coupling; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is a side elevation of the coupling devices, partly in section; Fig. 2, a plan view. Fig. 3 is a detail perspective view of the connection between the rock-shaft and coupling devices. Fig. 4 is a vertical cross-section of the draw-head.

My invention relates to certain improvements in car-coupling in which the cars are connected by hooks working vertically upon a horizontal pivot, and in which the coupling device is operated by a horizontal and transverse rock-shaft extending to each side of the car, and also by a vertical shaft leading to the top of the car.

My improvements consist, mainly, in the improved construction and arrangement of the rock-shaft and its connected mechanism for operating the hooks; in the peculiar construction and arrangement of the hooks; and in the peculiar construction and arrangement of the draw-bar, as hereinafter more fully described.

In the drawing, A A′ represent two cars arranged adjacent to each other, and provided with my improved coupling devices. One of these cars, A, is a flat or platform car, while the other is an elevated or box car, the two forms being here illustrated to show the applicability of my devices to each.

B is the draw-bar, the shank of which extends beneath the car-frame, and is attached thereto by suitable draft-connections. The front end of this draw-bar is extended up above the level of the shank, and forms an abutment against the dead wood of the car, which, when the cars come together, relieves the draft-connection of the draw-bar of all strain. The front end or draw-head of the draw-bar is constructed with an open upper surface, a central tongue, *a*, side walls *b b*, and a bottom with two holes through it, one on each side of the central tongue, just below the hook-chambers. Transversely through the sides *b* and the central tongue *a* is arranged the horizontal bolt *c*, which forms the axis for the hooks. C are the hooks, each of which is in the nature of a lever, and is pivoted to the same bolt *c*, which constitutes the hold for the free end of the opposite hook.

In connecting these hooks to their axial bolt they are formed with an enlargement, *d*, through which extends a hole made tapering or flaring upon each side, so as to form a circular bearing for the hook in a horizontal plane, which permits the hook to move freely from side to side without canting upward.

To the upper edge of the hooks C are attached the lower ends of the links *e*, which, in turn, are pivoted loosely to the ends of the arms *f*, rigidly attached to the short sleeves *g*, encompassing the transverse rock-shafts D. The said sleeves *g* are loosely arranged upon the rock-shafts D, but are coupled to the same by lugs *h* formed upon the sleeves and pins *i* attached to the rock-shaft. Upon the outer ends of the rock-shafts D are formed cranks, with weighted balls *j*, which both serve as handles for turning the rock-shafts and hold the shafts with the attached devices in the desired position.

Now, in coupling the cars it will be seen that the pin *i* of the shaft D rests beneath the lug *h* of the sleeve *g*, and the weight of the balls on the end of the said shaft D holds the hook in an elevated position ready for coupling, as shown in the right-hand part of Fig. 1, the lower end of the hook resting against the continuous front edge of the draw-bar, which operates as a stop. When the cars come together the rock-shaft is turned nearly a complete revolution, in which position, as shown in the left-hand part of Figs. 1 and 2, the pin *i* rests upon the top of the lug *h*, and the weight of the balls serves to hold the hooks down upon the coupling-bolt against accidental disengagement. The rock-shaft D is arranged in bearings attached to the car-frame, and extends from side to side of the car, so as to permit the cars to be coupled or uncoupled from either side.

When box-cars are employed a bevel-pinion, *k*, is fixed upon the rock-shaft D, and a vertical rod, E, is provided with a second bevel-

pinion, k', meshing with the first, and extends to the top of the car, where it is provided with a hand-wheel. When the hooks are pressed against the side of the draw-head said hooks may have a tendency to become disengaged, especially when passing over rough roads; and to obviate this result the hooks are provided upon the side with recesses l, (see Figs. 1 and 2,) which, when the hooks are pressed against the sides of the draw-bar, fit over projections or lugs l', formed upon the side of the draw-head, and prevent the disengagement of the hooks when in this position, still allowing them to be uncoupled.

With respect to the pivotal connection of the hooks, I would state that I am aware that a car-coupling hook has heretofore been provided with a double tapering bearing, made largest at the outer side. I therefore only claim such hook when it is provided with an enlargement, d, to receive said bearing, which gives a larger and more lasting wearing-surface without materially adding to the weight or clumsiness of the hook, and which better serves to hold the hook in its true position.

What I claim as new, and desire to secure by Letters Patent, is—

1. The hooks C, having an enlargement, d, with circular slotted bearing, as described.

2. The combination of the hooks C with the draw-bar having a centrally-perforated tongue, a, and bolt c, the said tongue being arranged between the hooks to brace the bolt, and above the bottom of the draw-bar to permit the insertion of the link beneath, as shown and described.

3. The draw-head having sides b, tongue a, and holes beneath the hook-chambers, inclosed by a continuous front edge, as shown and described.

4. The hooks C, extended rearwardly from their fulcrum, and combined with the bolt c, and the draw-head having a continuous front edge to give strength to same, and to form a rest for hook when raised or thrown down, as described.

5. The draw-bar having side chambers and a central tongue, with a free open space beneath said tongue to permit an ordinary link to be inserted, as shown and described.

6. The combination, with the coupling device and the horizontal rock-shaft D, of a loosely-coupled sleeve or ring enveloping the rock-shaft and connected with the coupling device for operating the same, substantially as described.

7. The combination, with the coupling device, of the rock-shaft D, extending from side to side of car, and provided with cranks and weights adapted to exert a constant holding effect upon said coupling device, substantially as described.

8. The vertical shaft E and horizontal shaft D, connected by a miter-gear, the loose sleeve g, encompassing the horizontal shaft, and the hooks C, connected with said sleeve, all combined and arranged as shown and described.

9. The hooks having recesses l upon their sides, in combination with the draw-bar formed with corresponding projections upon their side walls, as and for the purpose described.

WILLIAM HENRY MAPLE.

Witnesses:
R. H. POLLOK,
G. H. RAGSDALE.