2 Sheets—Sheet 1.

J. A. MASON.

Car Coupling.

No. 104,750

Patented June 28, 1870.

Fig. 1.

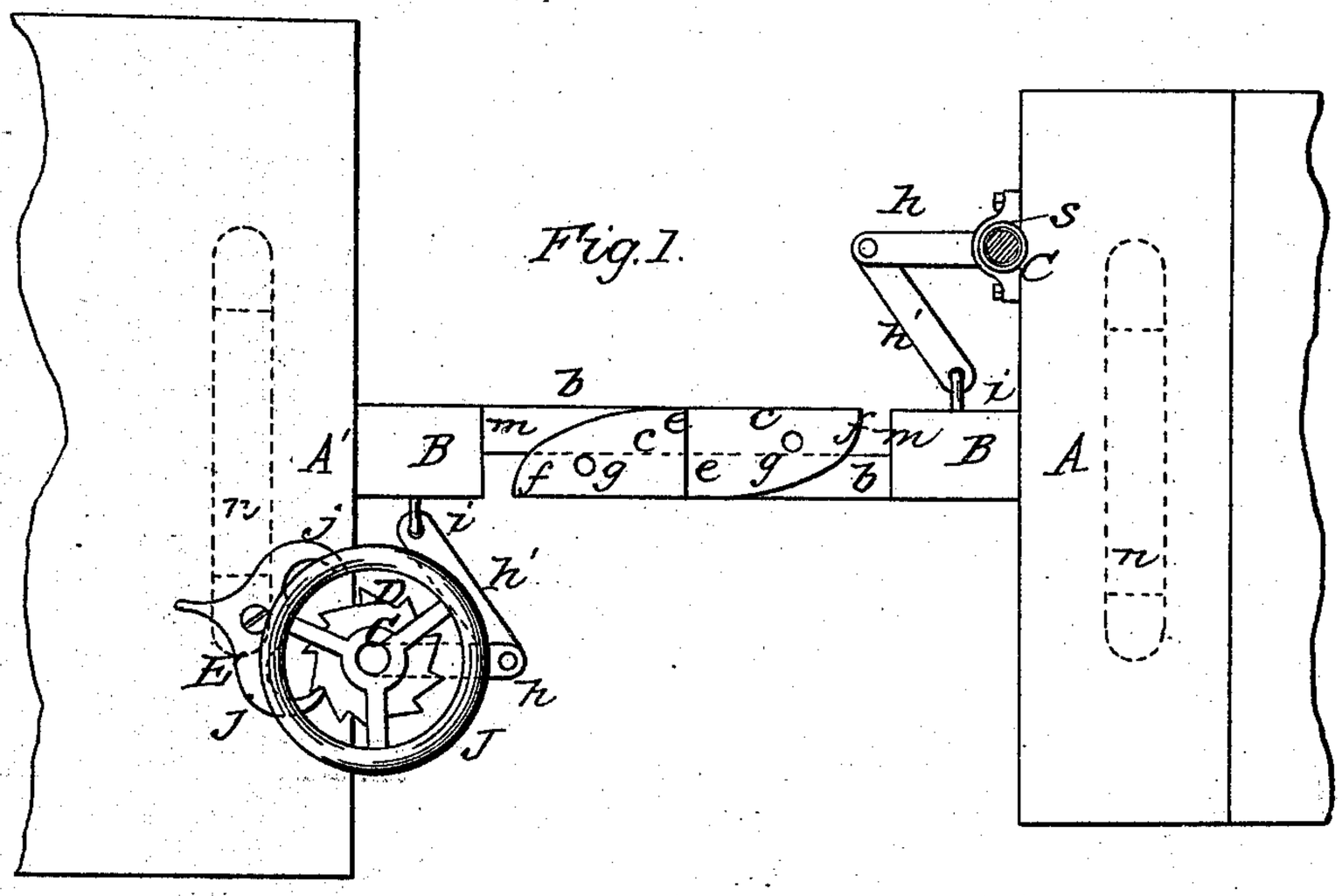
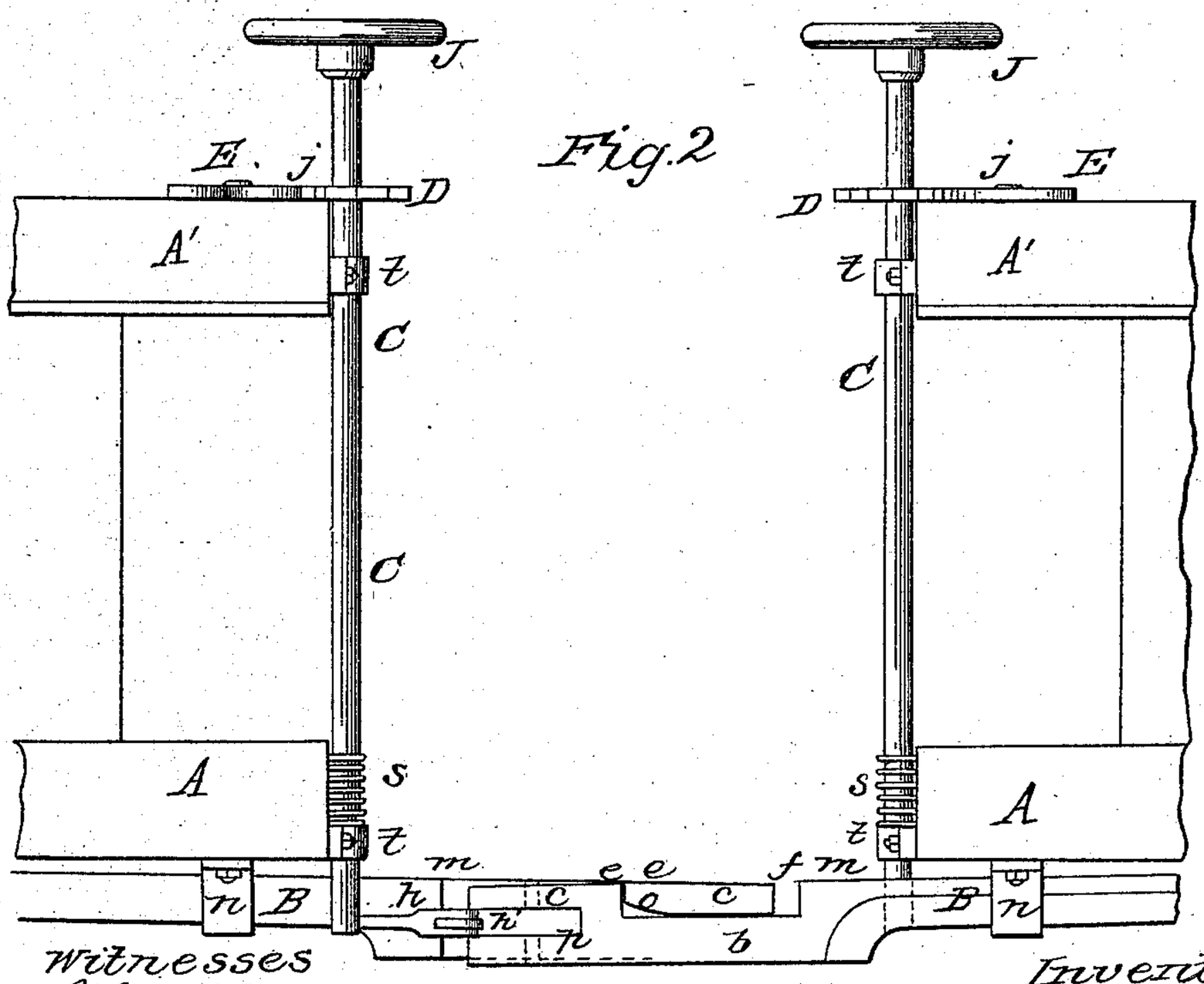


Fig. 2



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2 Sheets—Sheet 2.

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Car Coupling.

No. 104,750. Patented June 28, 1870.

Fig. 3

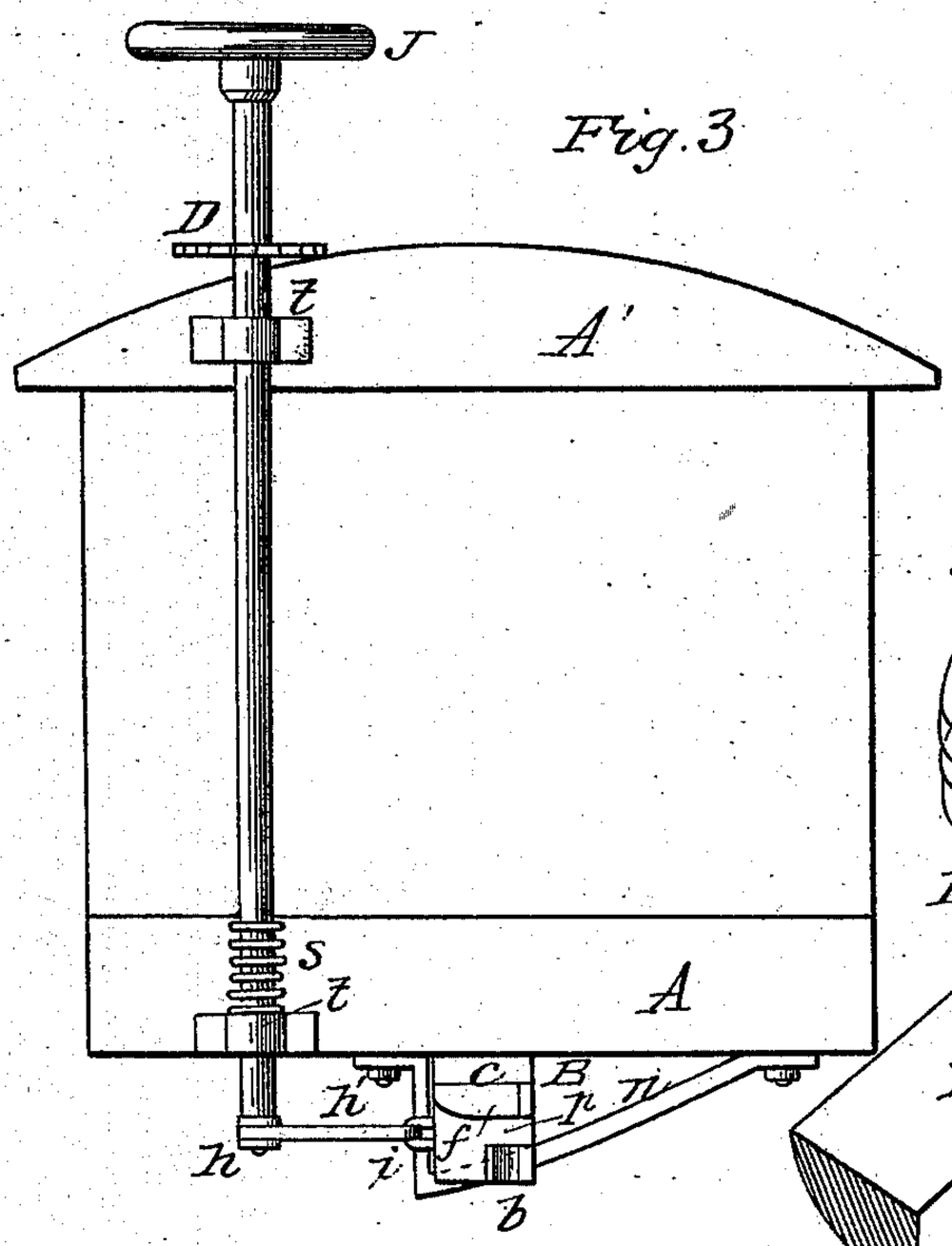


Fig. 4.

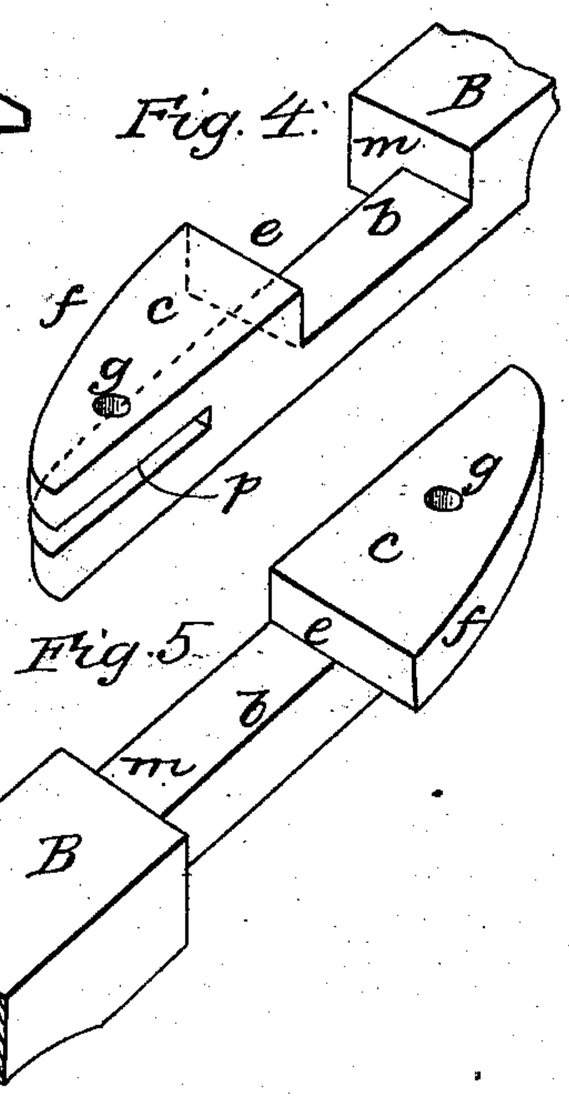
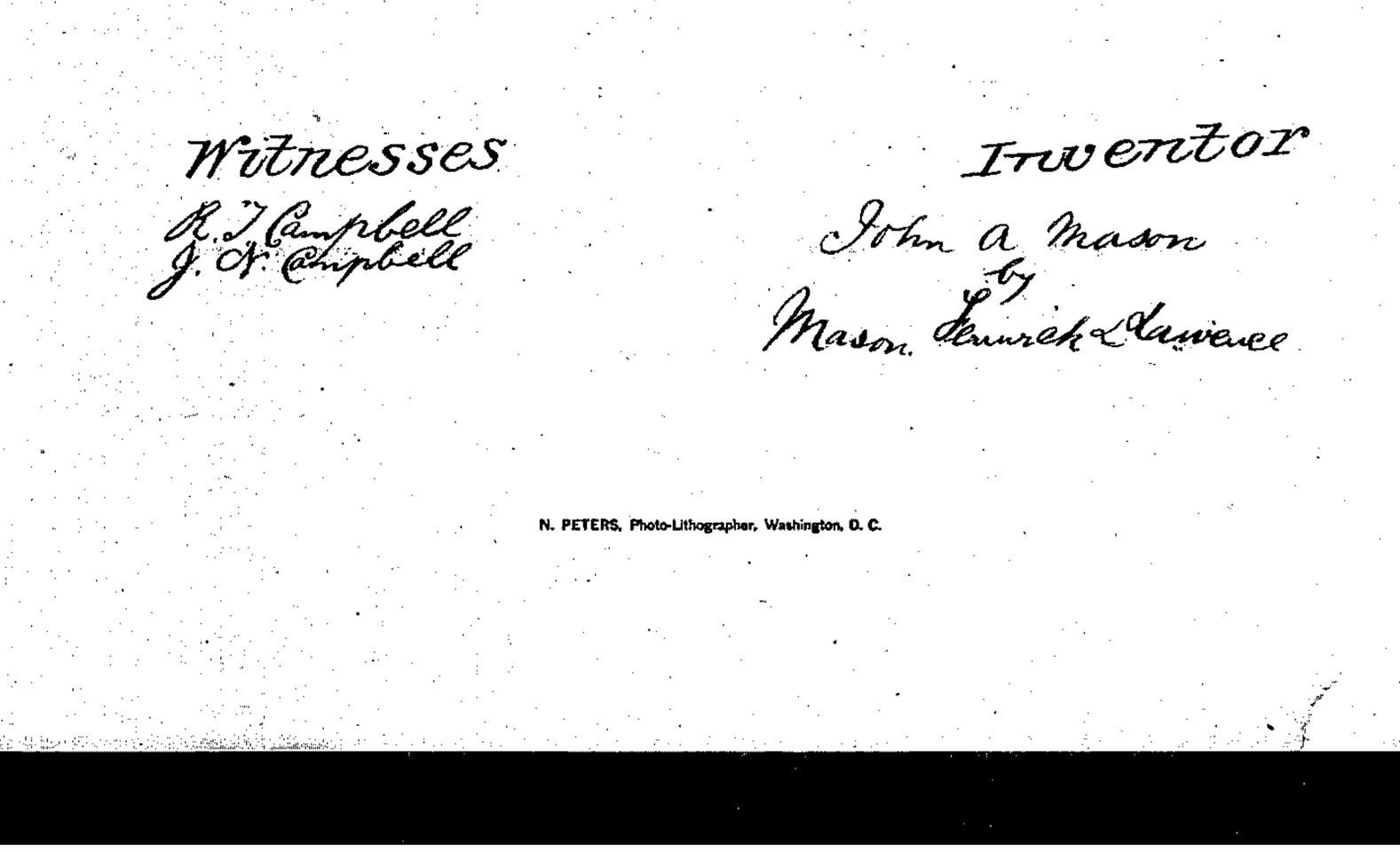


Fig. 5

Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN A. MASON, OF KEOKUK, IOWA.

IMPROVEMENT IN CAR-COUPLING.

Specification forming part of Letters Patent No. **104,750,** dated June 28, 1870.

To all whom it may concern:

Be it known that I, JOHN A. MASON, of Keokuk, in the county of Lee 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 thereof, reference being had to the accompanying drawing, making part of this specification, in which—

Figure 1, Plate 1, is a view of the ends of two cars coupled together by my improved device. Fig. 2, Plate 1, is a side elevation of the same. Fig. 3, Plate 2, is an end view of one car, showing one of the coupling draw-bars, its support, and the device for working it. Figs. 4 and 5, Plate 2, are perspective views of the two coupling-heads. Fig. 6, Plate 2, is a plan view, in detail, of the couplings detached from each other.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to certain novel improvements on car-couplings, which have hooked heads formed on the ends of laterally-movable draw-bars, and which are so constructed that when one car is moved up to another the coupling of the hooks is effected automatically.

The object of my invention is, first, to improve the hooked coupling by constructing the hooking portions with overlapping flanges, in such manner that when a coupling is effected the flange of each hooked head will overlap or lie over a reduced portion of the draw-bar behind the opposite hooked head, thereby preventing a casual uncoupling of the parts by either vertical or side motions of the cars, as will be hereinafter explained; second, to provide draw-bars having the flanged hooks formed on them with laterally-inclined stirrups, which will allow the free ends of the bars vertical and lateral motions, and also admit of their adjustment or adaptation to couplings in different planes, as will be hereinafter explained; third, to provide for holding the draw-bars in position for self-coupling, for locking them securely together when coupled, and also, when desired, for locking them when uncoupled, so that they will not couple, as will be hereinafter explained.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

In the accompanying drawing, A′ A′ represent the ends of two car-bodies having my improved coupling applied to them.

In Figs. 1 and 2 the draw-bars B B are shown coupled; and in Fig. 6 the bars are shown uncoupled.

As the construction of the several parts for each end of each car is precisely similar, I will describe the parts on one end of a car.

The draw-bar B extends beneath the platform A, and pivoted at P, Fig. 6, to a spring-box or other equivalent elastic connection in such manner that the coupling end of the bar is allowed free play both laterally and vertically.

Near the end of the car, and secured to the bottom of the same, is a stirrup, *n*, which is arranged transversely with respect to the length of the car, and inclined from a point on one side of the center thereof to a point *a* little to the opposite side of the center thereof, as shown in Fig. 3. This stirrup *n* is designed to afford a support for the coupling end of the draw-bar, and also to allow this end of the bar free play vertically and laterally.

That portion of the draw-bar B which is extended beyond the end of the platform A is reduced at *b* on one side of its center, so as to leave a vertical and a horizontal recess occupying, say, two-thirds of the size of the bar, as clearly shown in Figs. 1, 2, 4, and 5. This reduced portion leaves a shoulder or buffer, *m*, posteriorly, and anteriorly it terminates in a hook, *c*, which has a beveled overhanging flange, *f*, and a vertical transverse shoulder, *e*. The shoulder *e* of the hooking portion *c* may be equal in width to the width of the draw-bar, or double the width of the portion *b;* but this shoulder is only about one-half the vertical thickness of the draw-bar. Two hooks thus constructed will, when brought together, as shown in Figs. 1 and 2, interlock, so that the flange *f* of one hook will lie over the reduced portion *b* behind the opposite hook, thus preventing the two hooks from separation vertically.

For the purpose of adapting the hooks to receive the well-known coupling-links, I slot the hooks, as shown at *p*, and provide them with vertical pin-holes *g*.

If desirable, the bottom surface of the flange *f* may be beveled, as shown at *o*, Fig. 2, for allowing a slight play between the two hooks which are coupled together.

For the purpose of operating the draw-bar,

as in uncoupling, and locking it when uncoupled or coupled, I employ a vertical shaft, C, which is sustained by means of boxes *t t*. This shaft may extend above the roof of a car, as in freight-cars, or it may terminate just above the guard-rail of the platform, as in passenger-cars.

A hand-wheel, J, is applied on the upper end of shaft C, and an arm, *h*, is applied to its lower end, by means of which latter arm and a link, *h'*, that connects the arm to the draw-bar at *i*, the draw-bar can be moved laterally, and uncoupled from a similar draw-bar on another car.

A spring, *s*, is so applied to the shaft C as to hold the draw-bar in coupling position, as shown in Fig. 3.

D is a ratchet-wheel on the shaft C; and E is a double pawl, either one of the prongs *j j* of which may be made to engage with the said wheel, or both prongs may be disconnected from it.

It will be seen from the above description that I so construct hooked coupling-heads on the ends of draw-bars that portions of the hooking lips will overlap the reduced portions *b* when two bars are coupled together, and thus prevent a casual uncoupling of the parts by vertical motion.

It will also be seen that sufficient space is allowed between the lowest portions of the inclined stirrups *n n* and the car-platforms to adjust the draw-bars higher or lower, as may be required, to effect a coupling with either links or hooks which may be in different horizontal planes; also, that the draw-bars may be locked, by means of the double pawl E, either when coupled or when uncoupled; and, finally, it will be seen that the shoulder *m*, at the rear termination of each reduced portion *b* of a draw-head, serves as a buffer in the act of effecting a coupling.

I am aware that hooked couplings for cars have been constructed in various ways, with a view of preventing a casual detachment; but I am not aware that coupling-hooks have been so constructed before my invention that they were held together vertically by means of transverse over-lapping lips constituting parts of the hooking portions.

Instead of the double-acting pawl E, a pin-hole through the wheel D, with a pin to keep it locked or uncoupled, or simply a hook to hook in a hole or stop, might be employed.

Rods or chains may be applied to the hooks in such manner that these hooks can be uncoupled by a person stationed on the ground on one side of the cars.

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

1. The construction, upon the coupling end of a draw-bar, of a hook, *c*, having a lateral flange, *f*, formed on it, in combination with a rear reduced portion, *b*, substantially as described.

2. The jointed device *h h'*, arranged between and connected to the shaft C and the draw-bar B, whereby the use of springs may be dispensed with, and yet the uncoupling and coupling of the cars may be effected by turning the shaft C, all in the manner described.

3. The laterally-inclined stirrup *n*, laterally and vertically movable draw-bar B, and a flanged coupling-hook, constructed and combined substantially as described.

JOHN A. MASON.

Witnesses:
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