(No Model.) 4 Sheets—Sheet 1.

P. F. CORBETT.

CAR COUPLING.

No. 316,011. Patented Apr. 21, 1885.

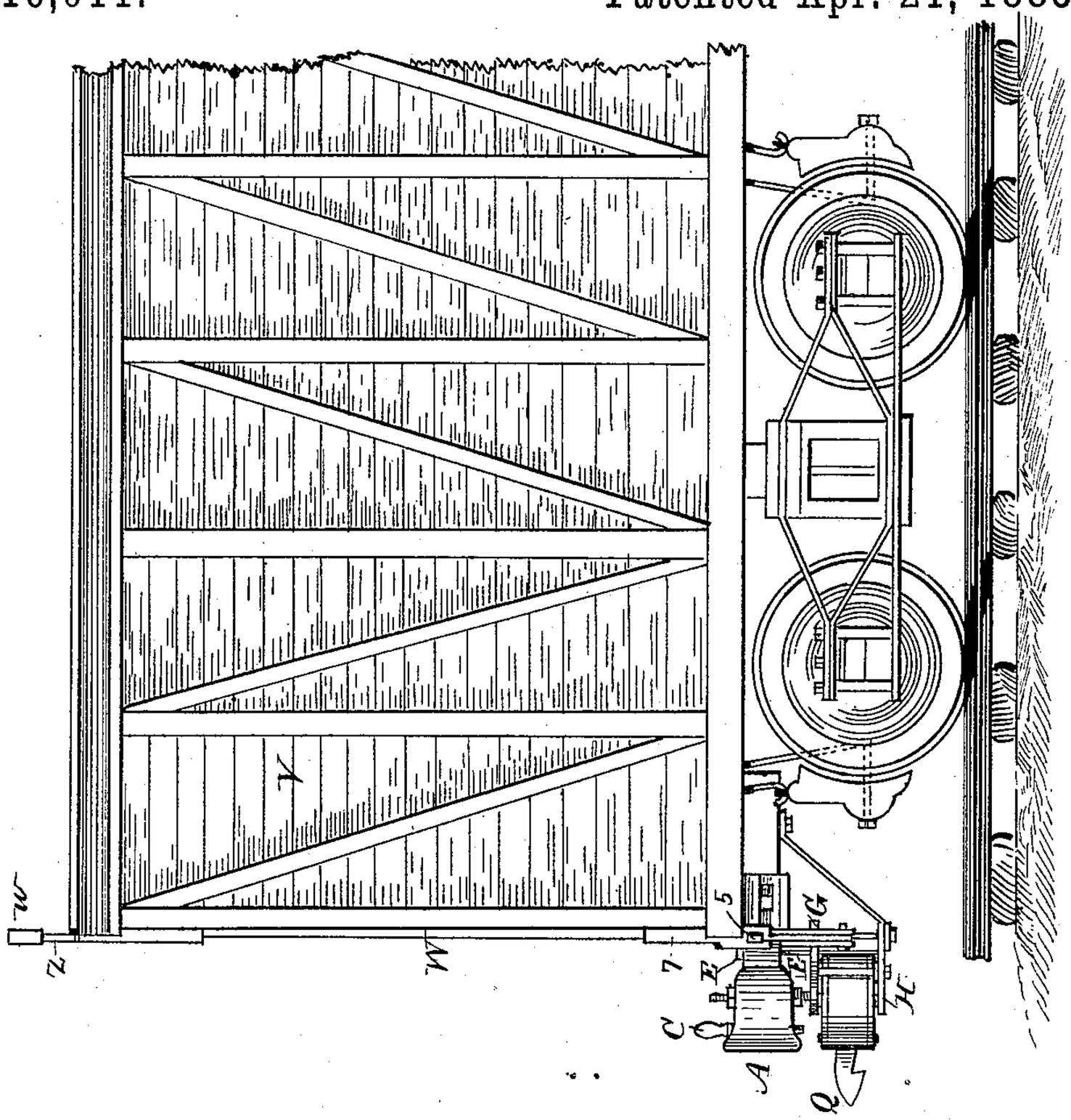

Fig. 2

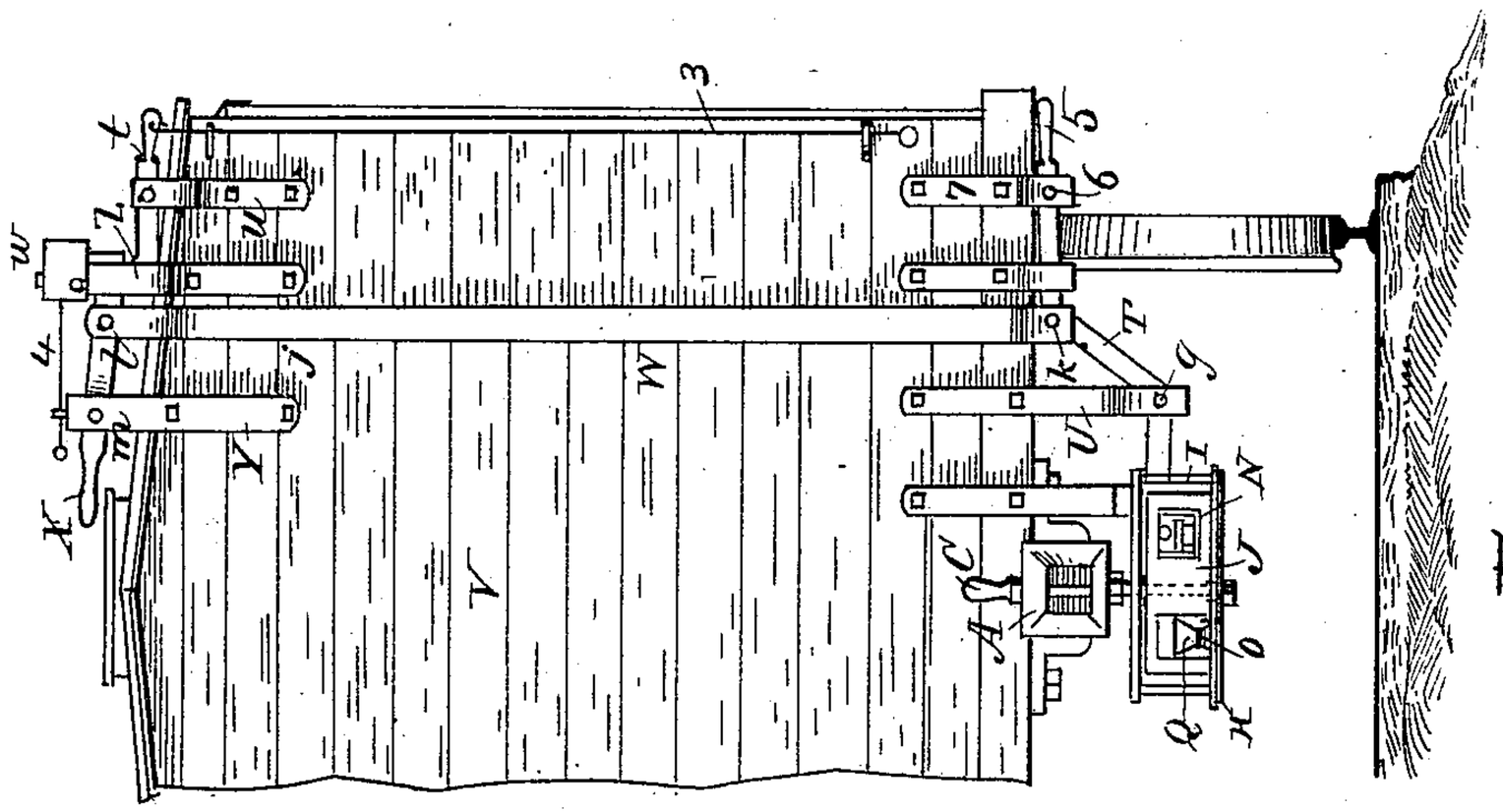

Fig. 1

Witnesses.
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(No Model.)

4 Sheets—Sheet 2.

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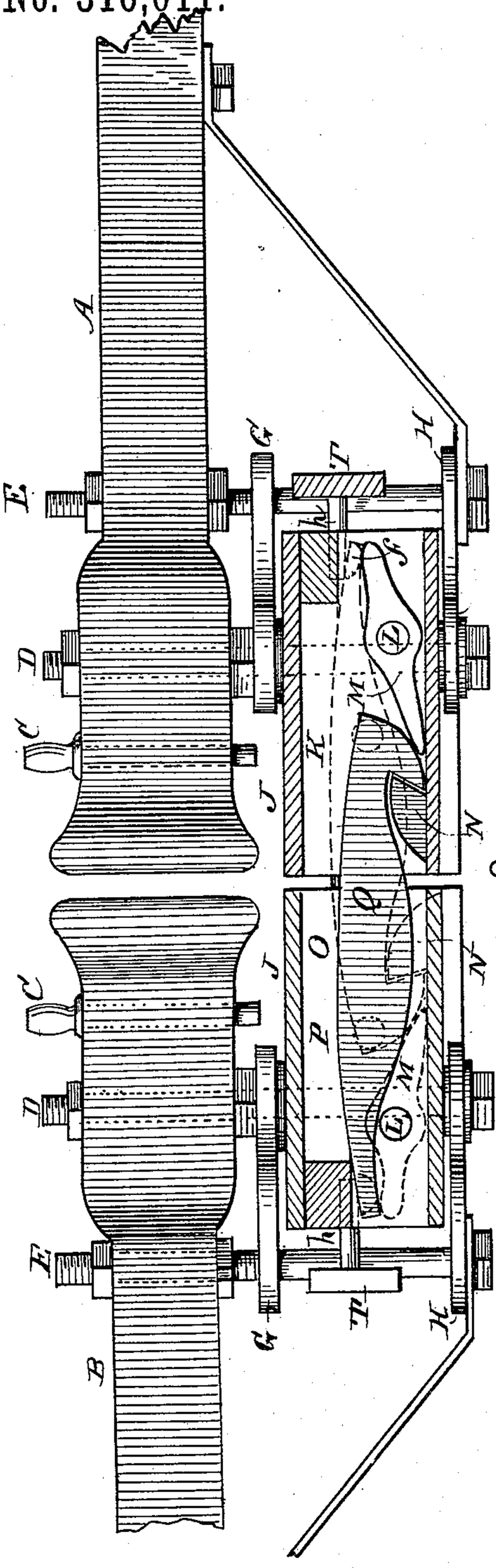

Fig. 3.

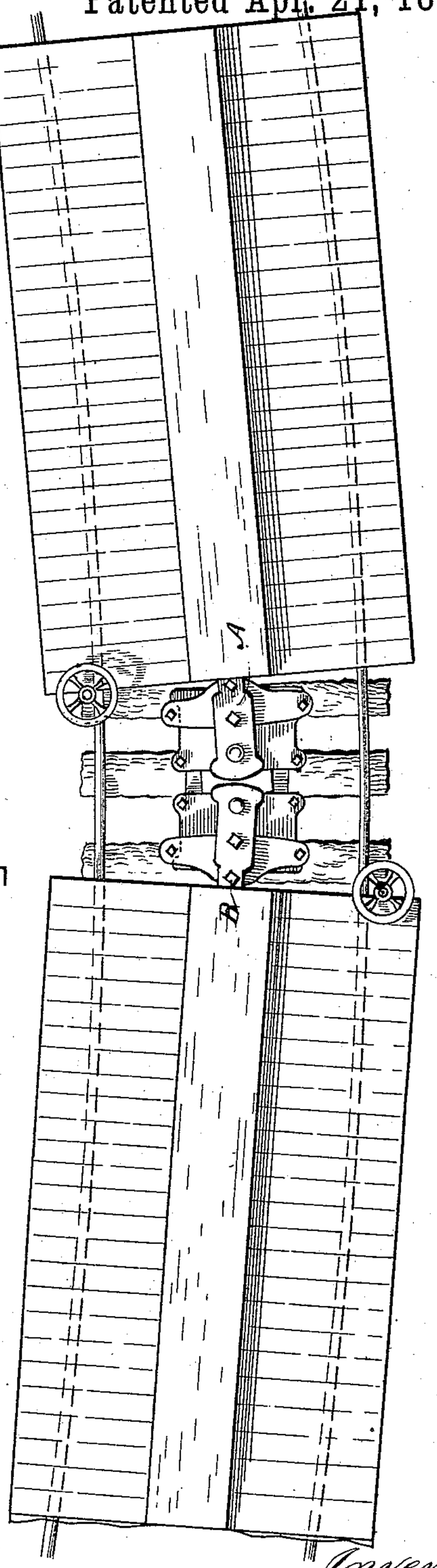

Fig. 4.

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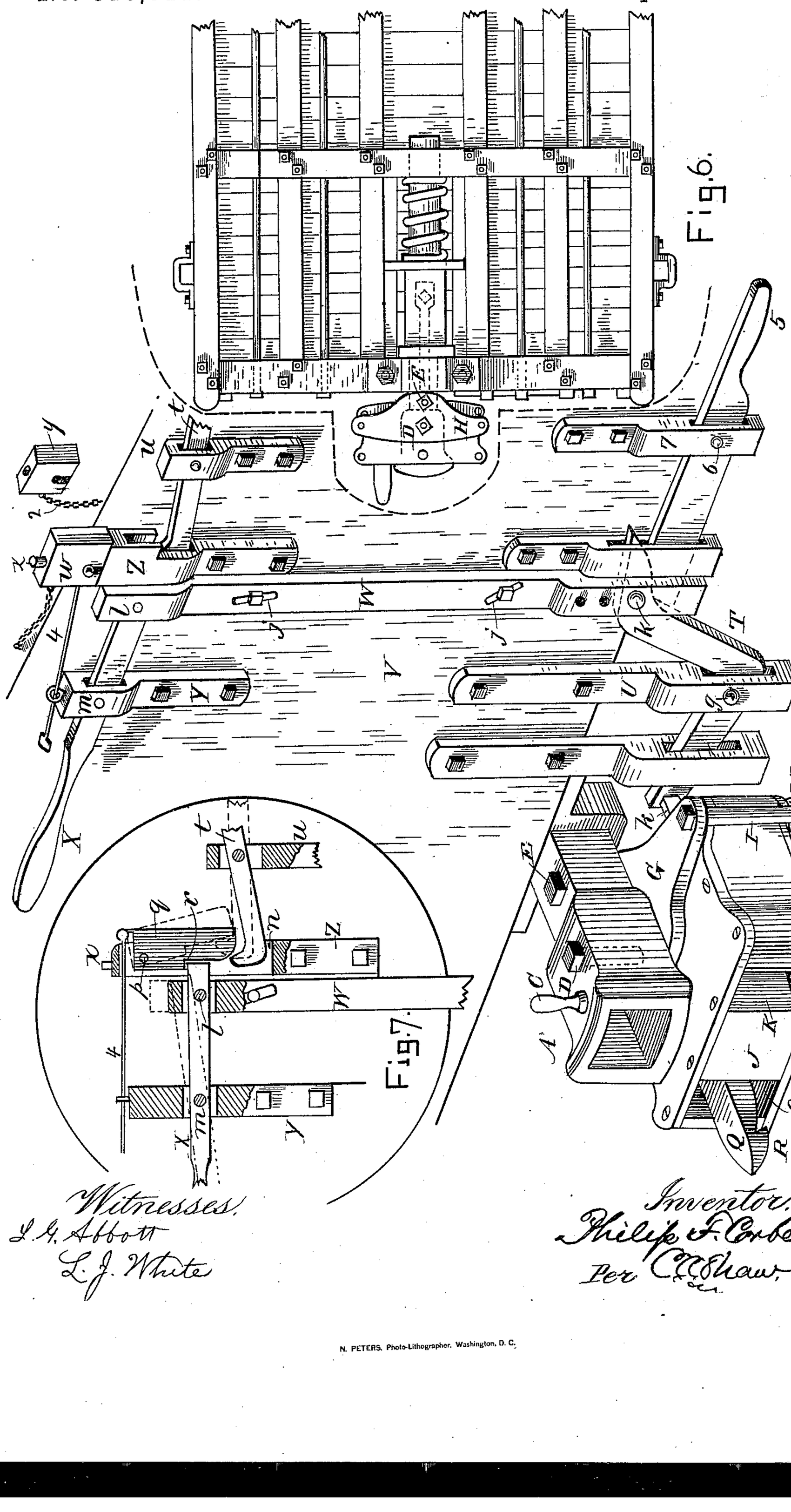

Fig. 6.

Fig. 5.

Fig. 7.

Witnesses.
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(No Model.) 4 Sheets—Sheet 4.

P. F. CORBETT.

CAR COUPLING.

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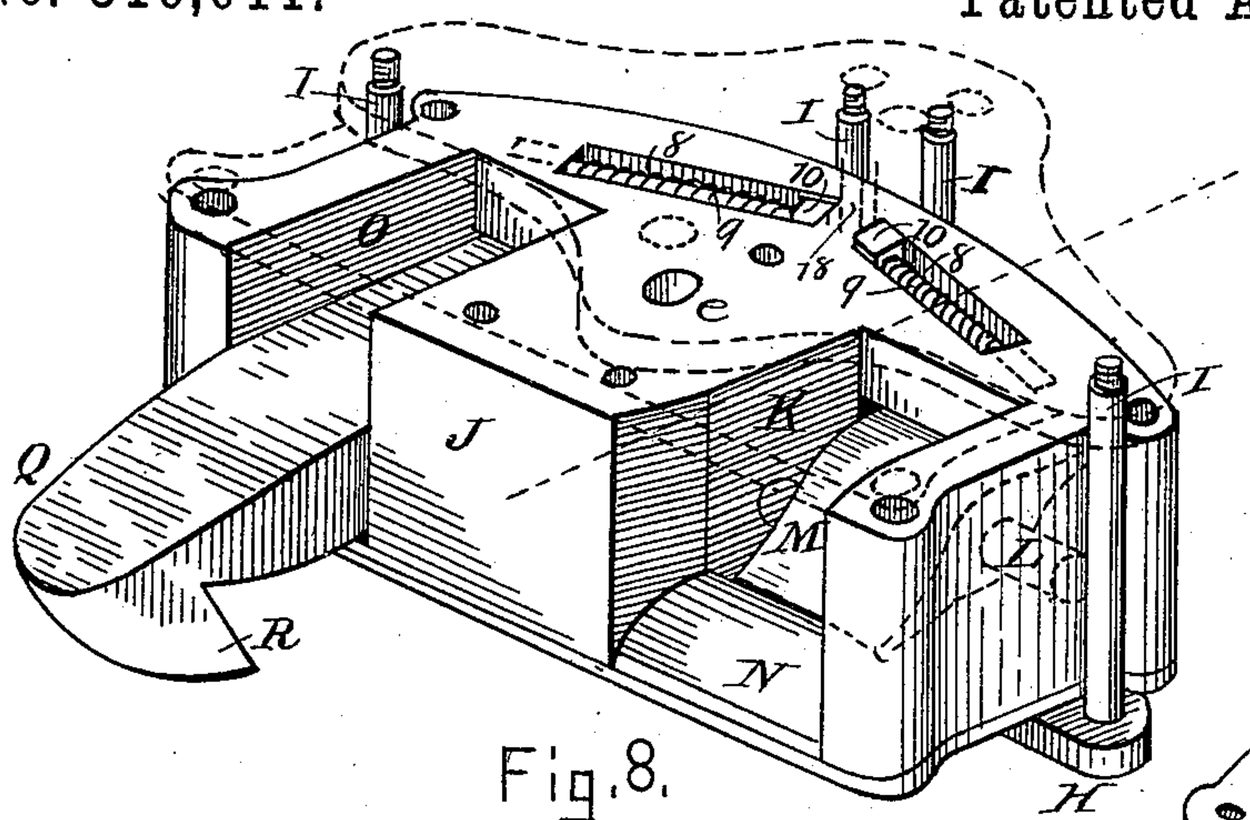

Fig. 8.

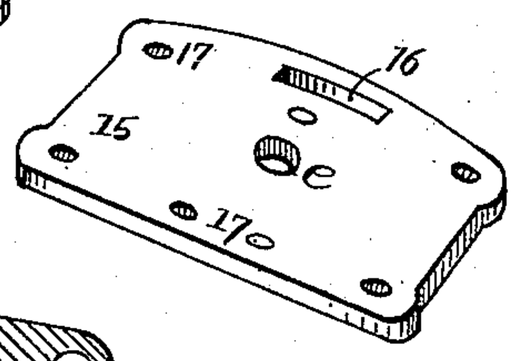

Fig. 12.

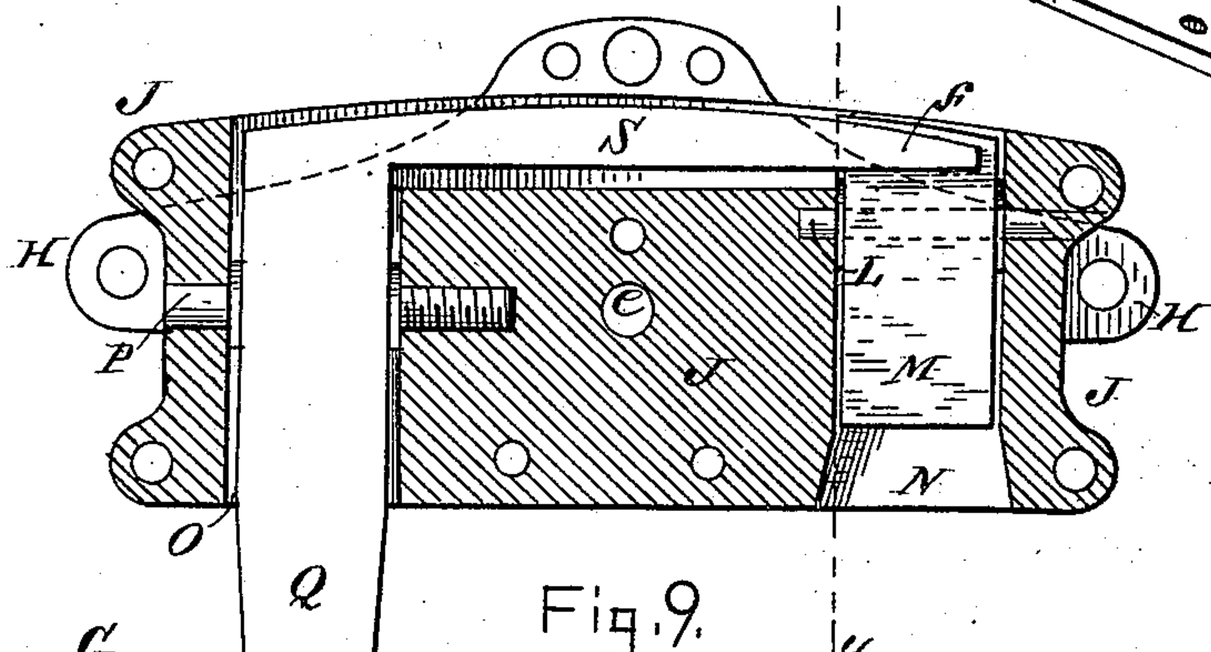

Fig. 9.

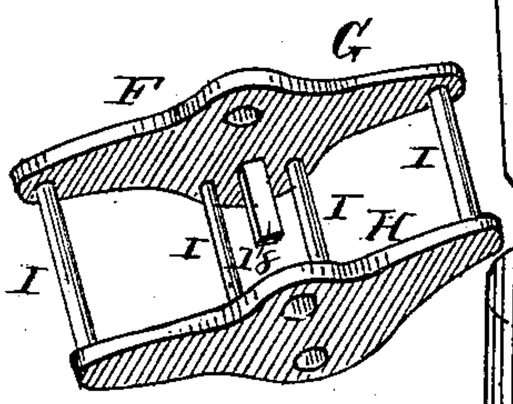

Fig. 11.

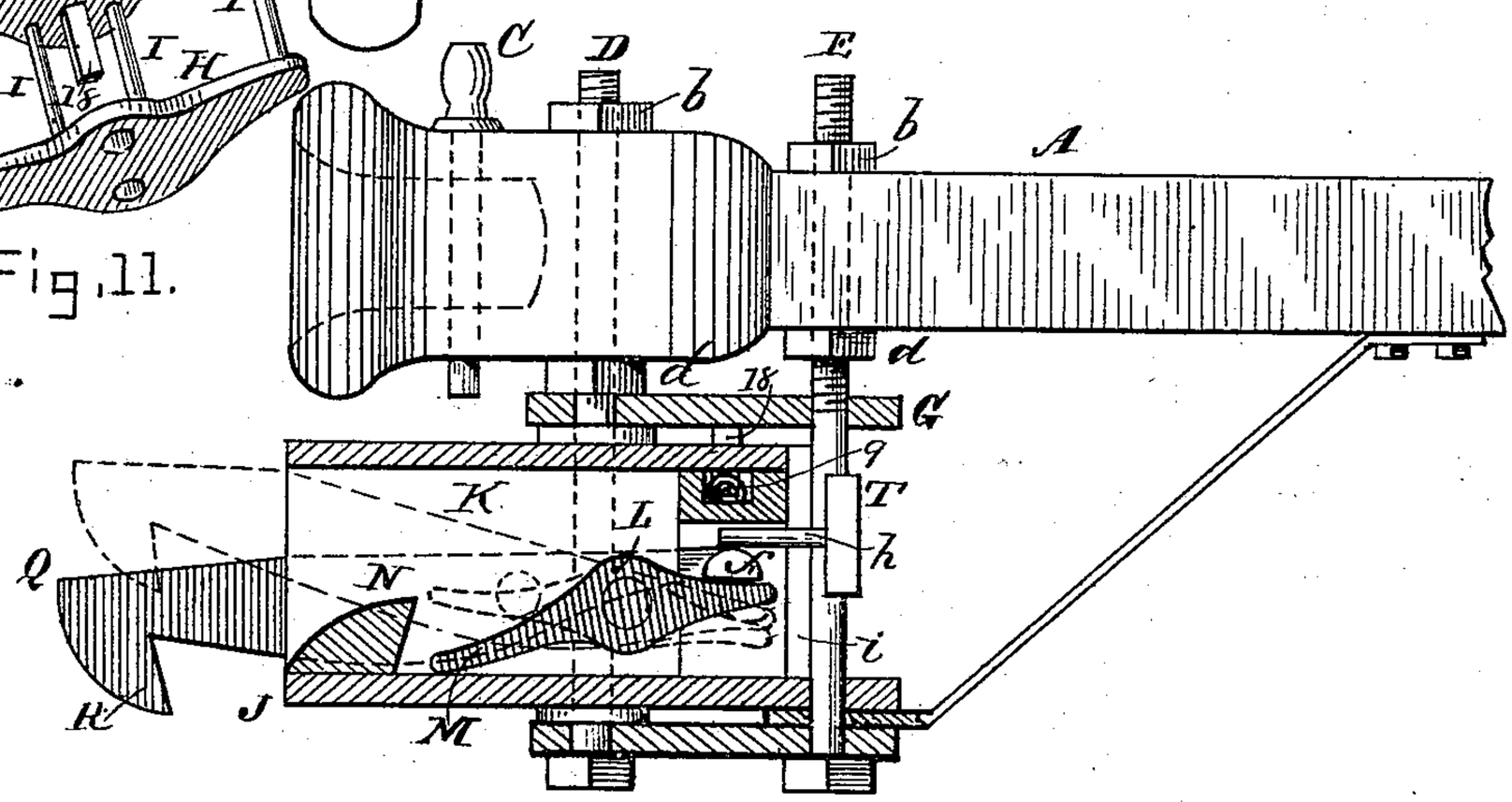

Fig. 10

Witnesses

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UNITED STATES PATENT OFFICE.

PHILIP F. CORBETT, OF BOSTON, MASSACHUSETTS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 316,011, dated April 21, 1885.

Application filed August 11, 1884. (No model.)

To all whom it may concern:

Be it known that I, PHILIP F. CORBETT, of Boston, in the county of Suffolk, State of Massachusetts, have invented a certain new and useful Improvement in Car-Couplers, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is an end elevation of a portion of a car provided with my improved coupler; Fig. 2, a side elevation of the same; Fig. 3, a side elevation of the draw-bar heads and coupler detached, the coupler being shown in vertical longitudinal section; Fig. 4, a top plan view showing the coupler as used on a curve; Fig. 5, an isometrical perspective view showing the uncoupling-levers; Fig. 6, a bottom plan view of a portion of a car provided with one of the coupler-heads; Fig. 7, a detached view of the uncoupling-levers; Fig. 8, an isometrical perspective view of one of the coupler-heads detached and having its top plate removed; Fig. 9, a horizontal section of the same; Fig. 10, a side elevation of one of the draw-bar heads detached, and a vertical longitudinal section of one of the coupler-heads; Fig. 11, a reduced perspective view of the frame or case detached, and Fig. 12 a like view of the cap-plate detached.

Like letters and figures of reference indicate corresponding parts in the different figures of the drawings.

My invention relates to that class of car-couplers which act automatically or are self-coupling; and it consists in a novel construction and arrangement of the parts, as hereinafter more fully set forth and claimed, by which a more effective device of this character is produced than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation:

In the drawings, A B represent the ordinary draw-bar heads, which are provided with pins C, and adapted to receive a link and couple the cars in the usual manner when required.

Attached to the under side of the draw-bar A by the bolts D E there is a frame-work or case, F, consisting of the plates G H, which are rigidly connected by the vertical standards I. The bolts D E are provided with heads *a* at their lower ends, on which the plate H rests, and with nuts *b* and check-nuts *d*, for properly securing the case to the draw-bar.

Pivoted on the bolt D, to swing laterally in the case F, there is a coupler-head, J, said bolt passing vertically and loosely through the hole *e* in said head. A cavity, K, having the hook N near its mouth, is formed in one side of the head J, and centrally pivoted therein on the rod L there is a horizontally-arranged lever, M.

At the opposite side of the head J from the cavity K there is a cavity, O. This cavity extends from the front nearly to the rear of the head, and then turns at a right angle, and, passing along the rear portion of the head, opens into the rear portion of the cavity K.

Pivoted in the cavity O on the rod P there is a gravitating lever, Q, provided with the downwardly-projecting hook R at its outer end. This lever is provided at its inner end with an arm, S, which projects at a right angle to its body over the inner end of the lever M, as seen at *f* in Figs. 9 and 10. A bent lever, T, is pivoted at *g* in a bracket, U, attached to the end of the car V, this lever being provided at its inner end with a horizontally-arranged pin or stud, *h*, which passes through a vertical slot, *i*, in the rear of the head J, and rests on the end *f* of the arm S, as best seen in Fig. 10. A bar, W, is fitted to slide vertically on the end of the car V by means of the headed bolts and slots *j*, the lower end of said bar being pivoted at *k* to the outer end of the lever T, and its upper end at *l* to a horizontally-arranged lever, X, which is pivoted at *m* in a bracket, Y, also attached to the end of said car. A standard, Z, is secured to the top of the car V, near the upper end of the bar W, said standard being provided with the lateral elongated mortise *n*, which extends entirely through the same, as seen in Fig. 7.

Pivoted at *p* in the upper end of the mortise *n* there is a swinging lever or locking-bar, *q*, provided with the shoulder or notch *r*, adapted to engage the outer end of the lever X, which projects into said mortise. A horizontally-

arranged lever, *t*, is pivoted in a bracket, *u*, attached to the car V, the inner end of this lever being curved upwardly and extending into the mortise *n* of the standard *Z*, beneath the swinging lever or locking-bar *q*, as seen in Fig. 7, so that when the outer end of the lever *t* is depressed, the inner end of said lever will engage the bar *q* and throw it outwardly or disengage it from the lever X, thereby permitting the sliding bar W to be raised and lowered by means of said last-named lever. A cap or cover, *w*, is arranged over the upper end of the standard *Z* to prevent the bar *q* from being swung outwardly or becoming deranged accidentally. This cover is detachably connected to the standard by the stud *x*, which projects through it and holds it in position, and is sufficiently wide to permit the bar *q* to be moved by the lever *t* and unlock the lever X; but, when it is desired to lock the lever X permanently, the cover *w* is removed and the smaller one *y* employed in its stead, thereby preventing the bar *q* from being swung laterally.

The covers *w y* may be connected to the top of the car by chains 2, to prevent them from becoming misplaced or lost. The lever *t* is provided with a vertically-arranged pull-rod, 3, extending vertically to near the bottom of the car, and the locking-bar *q* with a horizontally-arranged pull-rod, 4, the last-named rod being connected to the upper end of said bar above its pivot *p*, so that when the rod is pulled the lower end of the bar will be thrown out and the notch *r* disengaged. A lever, 5, is pivoted at 6 in a bracket, 7, attached to the lower portion of the car V, the inner end of said lever passing under the outer end of the lever T, and being adapted to engage the same, so that when the outer end of the lever 5 is depressed the outer end of the lever T will be correspondingly elevated. The coupling-head J is provided on its upper side with two diagonally-arranged grooves, 8, and disposed in either of these grooves there is a coiled spring, 9, pressing against a lock or head-piece, 10, which is fitted to slide in the groove. The coupler-head J is covered by means of a cap-plate, 15, provided with an elongated slot, 16, and hole *e*, for the bolt D, the plate being secured to the head by screw-bolts passing through the holes 17 into corresponding holes in the head.

Projecting downwardly from the rear portion of plate G, as seen in Fig. 11, there is a stud, 18, which passes through the slot 16 and downwardly between the blocks 10, as indicated by dotted lines in Fig. 8, so that when the coupler-head J is swung laterally in either direction one of the springs 9 will be forced against said stud, and, as the springs act expansively, will operate to bring the head into a central position when it is released and in a manner which will be readily obvious without a more explicit description.

In the foregoing a description has been given of but one of the coupler-heads, or that attached to the draw-bar A; but it will be understood that a corresponding coupler-head is attached to the draw-bar B, as shown in Figs. 3 and 4, but having the position of its lever Q and cavity K reversed, so that when the two heads are brought together to form a complete coupler the lever Q of the head J will enter a corresponding cavity in the opposite head, and vice versa.

In the use of my improvement to couple the cars they are backed together until the hooked levers Q respectively enter their apertures K and engage the hooks N.

To uncouple the cars from the ground, the lever 5 is depressed, causing the stud *h* to press on the arm S of the lever Q and detach its hook R from the hook N, at the same time causing the arm S to press on the inner end of the lever M, tilting said lever and disengaging the companion lever Q from the hook N.

To uncouple the cars from the top of the car the lever X is depressed.

It will be understood that before uncoupling the cars by means of the lever 5 the rod 3 must be pulled, and before uncoupling with the lever X the rod 4 must be pulled to swing the bar *q* outwardly and unlock the levers.

I do not confine myself to attaching the coupler-heads to the ordinary draw-bar heads, as they may be otherwise secured to the car; or the ordinary draw-bar may be provided with the coupler-head instead of the ordinary head, if desired.

Having thus explained my invention, what I claim is—

1. In a car-coupling, the combination, substantially as set forth, of two draw-heads, each provided with a rabbet or lug, tilting gravitating coupling-levers pivoted, respectively, in said draw-heads sidewise of said lugs, and each provided with a hook at its forward end and with a right-angle arm at its rear end, devices for depressing said right-angle arms, and intermediate levers pivoted in said draw-heads, the forward ends of said intermediate levers being adapted to release the hooked ends of said coupling-levers, while their rear ends are adapted to be actuated by the depression of said right-angle arms, whereby the depression of one of said arms will release both of said coupling-levers.

2. In a car-coupling, the combination, substantially as set forth, of a coupler-head provided with a rabbet or lug, a tilting gravitating coupling-lever pivoted in said coupler-head sidewise of said lug, and provided with a hook at its forward end and a right-angle arm at its rear end, and a releasing-lever pivoted in said coupler-head in rear of said lug, one end of said releasing-lever projecting beneath said right-angle arm, while the opposite end is adapted to disengage the hook of the connecting coupler-head from said lug when said lever is actuated by said arm.

3. In a car-coupling, the combination, substantially as set forth, of a draw-bar, a supplementary coupler-head attached thereto and

provided with a rabbet or lug, a tilting gravitating coupling-lever pivoted in said coupler-head sidewise of said lug, and provided with a hook at its forward end and a right-angle arm at its rear end, and a releasing-lever pivoted in said coupler-head in rear of said lug, one end of said releasing-lever projecting beneath said right-angle arm while the opposite end is adapted to disengage the hook of the connecting coupler-head from said lug when said lever is actuated by said arm.

4. In a car-coupler, the springs 9, in combination with the coupler-head J and stud 18, substantially as described.

5. In a car-coupler, the plate 15, provided with the slot 16, in combination with the coupler-head J and stud 18, substantially as set forth.

6. In a car-coupler, the lever T, provided with the stud *h*, in combination with the arm S, hooked lever Q, and means for actuating said lever T, substantially as described.

7. In a car-coupler, the pivoted lever 5, in combination with the pivoted lever T, having the stud *h*, and with the lever Q, having the arm S, substantially as set forth.

8. In a car-coupler, the sliding bar W, in combination with the pivoted lever X, pivoted lever T, having the stud *h*, and lever Q, having the arm S and hook R, substantially as described.

9. In a car-coupler, the pivoted lever *t*, in combination with the locking-lever *q*, pivoted lever X, and bar W, substantially as set forth.

10. In a car-coupler, the rod 4, in combination with the locking-lever *q*, arm X, and bar W, substantially as described.

11. In a car-coupler, the rod 3, in combination with the lever *t*, locking-lever *q*, lever X, and bar W, substantially as set forth.

12. In a car-coupler, the cap *w*, in combination with the locking-lever *q* and levers *t x*, substantially as set forth.

13. In a car-coupler, the cap *y*, in combination with the locking-lever *q* and levers *t x*, substantially as described.

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