

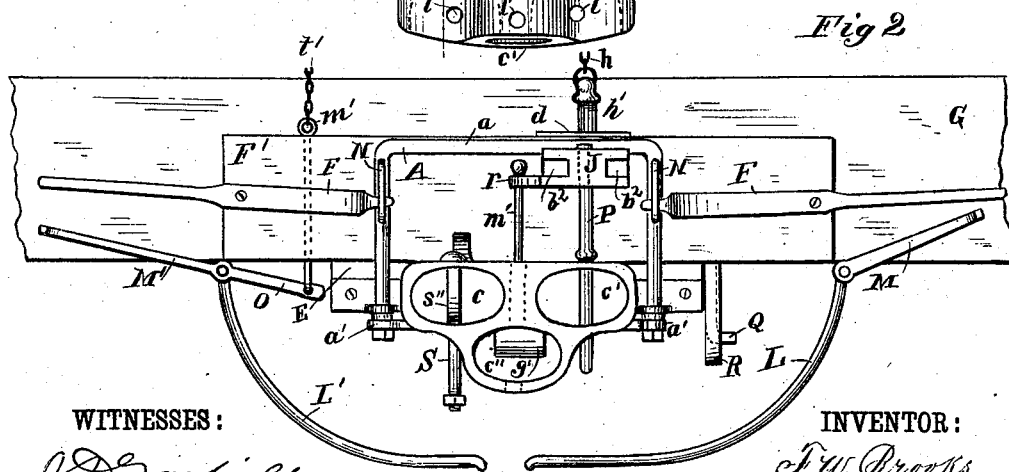
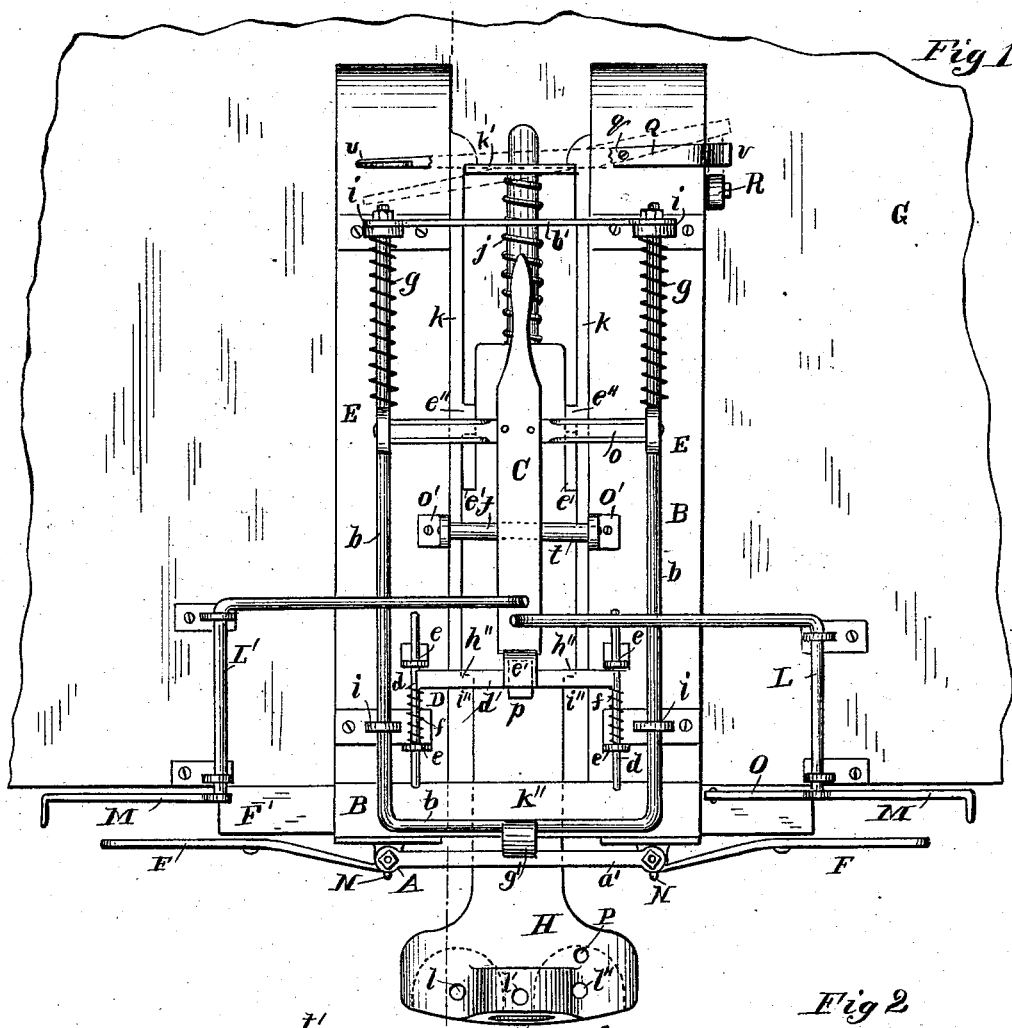
(Model.)

2 Sheets—Sheet 1.

F. W. BROOKS.
CAR COUPLING.

No. 261,301.

Patented July 18, 1882.



WITNESSES:

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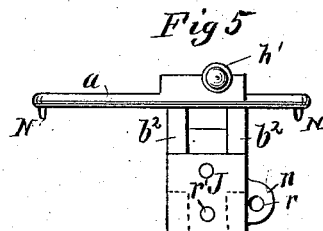
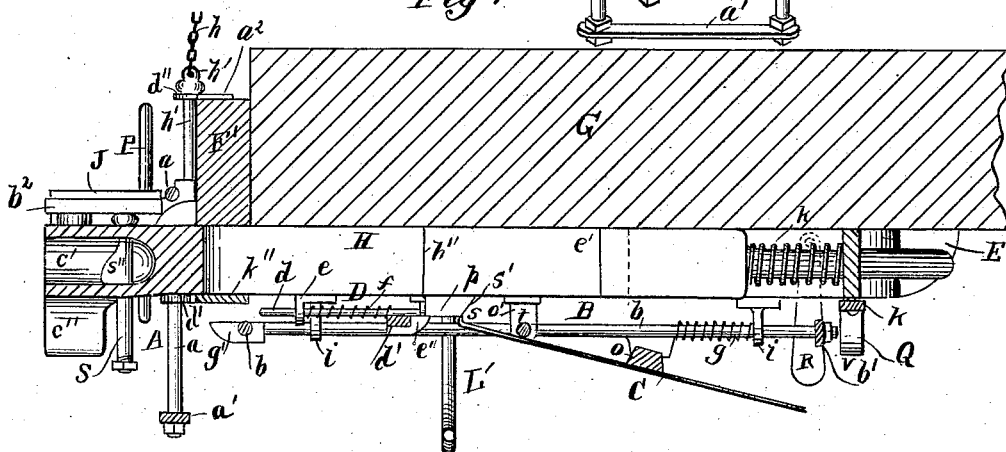
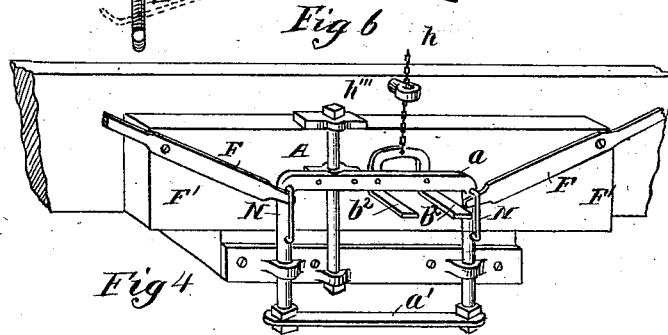
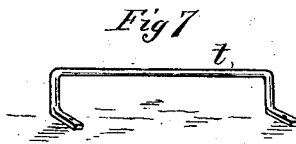
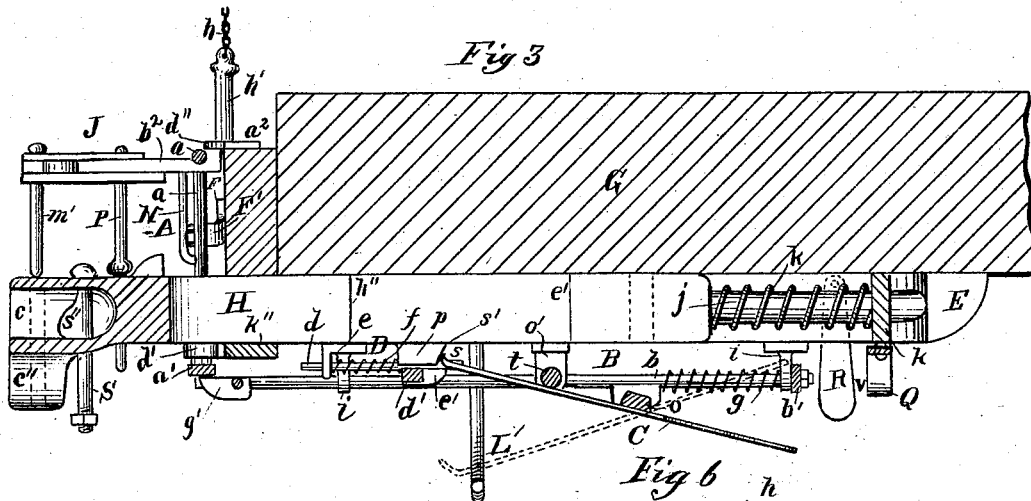
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2 Sheets—Sheet 2.

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WITNESSES:

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UNITED STATES PATENT OFFICE.

FREDERICK W. BROOKS, OF OAK GROVE, WISCONSIN.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 261,301, dated July 18, 1882.

Application filed May 8, 1882. (Model.)

To all whom it may concern:

Be it known that I, FREDERICK W. BROOKS, of Oak Grove, in the county of Dodge and State of Wisconsin, have invented a new and Improved Car-Coupling, of which the following is a full, clear, and exact description.

In my new and improved car-coupling the coupling-pin is adapted to be held in an elevated position, ready for coupling the cars, by means of a vertically-sliding frame, which is released by the backward movement of the draw-head when the cars are backed together, thus causing the coupling pin and frame to drop and the pin to pass through the draw-head and connecting-link, thus automatically connecting the cars.

The means I employ for holding the vertically-sliding frame in elevated position consists of a horizontally-sliding frame held forward by suitable springs, and the means I employ for moving this horizontal frame backward against the pressure of the said springs for releasing the vertical frame consists of a counterbalanced lever pivoted in the horizontal frame, which is adapted to be "set" by means of suitable bell-crank levers, and held in set position, so that a lug formed upon the lower side of the draw-head will come against the forward end of the lever, and thus force back the frame. Another horizontally-sliding frame is provided for holding the counterbalanced lever in its set position. This counterbalanced lever may be set from either side of the car, or from the top of the car, by the said bell-crank levers, and the vertically-sliding frame holding the coupling-pin may be raised to its elevated position from the top of the car by means of a small chain, rope, rod, or similar attachment leading from the frame to the top of the car, or from either side of the car, by means of suitable levers, so that the brakeman is not required at any time to go between the cars for coupling or uncoupling.

My invention consists of these vertically-sliding and horizontally-sliding frames, counterbalanced lever, and the means for operating the same, and also of the construction, arrangement, and combination of parts, all as hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification,

in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is an inverted plan view of the bottom or platform of a car having my improved car-coupling applied thereto. Fig. 2 is a front elevation of the same. Fig. 3 is a sectional elevation taken on the line *xx* of Fig. 1, showing the parts in position ready for coupling. Fig. 4 is a similar section, showing the parts as they appear just after the vertically-sliding frame has been released; and Fig. 5 is a detailed plan view of the vertically-sliding frame, showing the plate in which the coupling-pin is held. Figs. 6 and 7 show modifications of certain parts of my improved car-coupling.

A represents the vertically-sliding frame, composed of the U-shaped rod *a* and lower cross-piece, *a'*.

B represents the main horizontally-sliding frame, composed of the U-shaped rod *b* and rear cross-piece, *b'*.

C represents the counterbalanced lever, pivoted in the frame B, and D represents the small horizontally-sliding frame, composed of the side bars, *d d*, which move in the four eyes *e e*, secured to the beams E E, and the cross-piece *d'*, which latter is formed with the upwardly-beveled lip or projection *e'* for engaging the forward end of the counterbalanced lever C, as shown in Fig. 3, for holding it in set position, the frame being normally held forward by the springs *f f*, placed upon the rods *d d*, and adapted to be forced back to permit the end of said lever C to pass above it by the action of the said end of the lever upon the upwardly-beveled surface of the said projection or lip *e'*.

The main frame B moves in the four eyes *i i*, secured to the under side of the beams E E, and is held forward by the springs *g g*, and is formed or provided at its forward end with the upwardly-beveled lip or projection *g'* for engaging with the lower cross-piece, *a'*, of the vertically-sliding frame A for holding the said frame in elevated position, as shown in Figs. 1, 2, and 3, the frame B being forced back against the springs *g g* to permit the frame A to pass above the lip *g'* by the said cross-piece *a'* coming against the beveled surface of the said lip, the frame A being forced up either by one of the levers F F, or drawn up by the

small chain *h*, attached to the bolt *h'* of the frame, and leading to the top or platform of the car.

G represents the bottom or platform of the car, and the said beams *E E* are secured to it in the ordinary manner, and the draw-head *H* is held between these beams (which are faced with the hooked plates *k k*) by the end plate, *k'*, and the bottom plate, *k''*, and is provided with the rear buffer-spring, *j*, which permits the draw-head to have a rearward movement in the ordinary manner when the cars are brought together, the forward movement of the draw-head when the cars are connected and moved forward being limited by the shoulders *h'' h''* coming against the projections *i'' i''* of the said face-plates *k k*, the rearward movement being limited by the shoulders *e' e'* of the draw-head coming against the projections *e'' e''* of the said face-plates.

The draw-head *H* is formed with the parallel link-chambers *c c'* and with the lower link-chamber, *c''*, and the holes *l l' l''* are formed through the draw-head, as shown in Fig. 1, for the passage of the connecting-pin *m'* through either of the link-chambers, as shown in Figs. 1, 2, and 3.

The vertically-sliding frame *A* surrounds the draw-head, as shown clearly in Fig. 2, and is held at its lower side in the eyes *d' d'*, secured to the forward ends of the beams *E E*, and at its upper side in the eye *d''*, formed in the plate *a''*, secured to the upper side of the block *F'*, secured to the edge of the bottom or platform *G* of the car, above the draw-head, through which eye the bolt *h'* passes, as shown clearly in Figs. 2 and 3.

To the upper side of the frame *A* are secured the parallel arms *b² b²*, which form a way in which the guttered plate *J* is held. This plate holds the connecting-pin, and is connected to the draw-head by means of the vertically-held pin or rod *P*, upon which passes loosely the plate *J*. This plate is thus caused to move backward and forward in the way between the arms *b² b²* with the backward and forward movement of the draw-head, thus always holding the connecting-pin in proper position over one or the other of the holes through the draw-head (when the frame *A* is raised) for properly dropping through the hole and connecting-link when the cars are brought together for coupling.

N N are loops formed upon or secured to the U-shaped bar *a* of the vertically-sliding frame *A*, through which the forward ends of the levers *F F* pass for raising the said frame and the coupling-pin for uncoupling the cars and setting the frame for coupling again, the plate *J* being carried upward by the arms *b² b²* of the frame, the same sliding upon the pin or bolt *P*, as will be clearly understood from Figs. 2 and 3. When the frame *A* is raised to this elevated position by the operation of one of the levers *F* for uncoupling the cars, or for putting the coupler in position for coupling,

the lower cross-piece, *a'*, of the said frame will come against the beveled surface of the projection *g'*, and will force the horizontal frame *B* backward against the pressure of the springs *g g* and pass above the projection. The frame *B* will then be forced forward, as the cross-piece passes the said projection, by the springs *g g*, so that the lip or projection *g'* will pass under the lower cross-piece, *a'*, and thus hold the said vertically-sliding frame *A* and the coupling-pin *m'* in their elevated position, as above mentioned and as shown in Figs. 2 and 3, ready for coupling again, and in this position they will remain until the counterbalanced lever *C* shall have been set and the draw-head *H* forced backward. Before the lever *C* is set the draw-head is free to move backward and forward without in any manner affecting the vertically-sliding frame *A* or coupling-pin, so that, with the frame *A* and coupling-pin in elevated position, (the counterbalanced lever *C* not set,) in order to put the coupler in position for automatically coupling the cars when they are backed together, the lever *C* must first be set—that is, raised to the position shown in Fig. 3, with its forward end above the lip or catch *e'* of the sliding frame *D*—which setting is done by operating one of the bell-crank levers *L L'*, the lower ends of which normally stand under the said lever *C*, as clearly shown in Fig. 2 and by dotted lever *C* in Fig. 3. With the lever *C* in this set position the upper end of it stands in line with the lug *p*, formed upon the under side of the draw-head *H*, so that when the draw-head is moved backward this lug will come against the forward end of the lever, and the lever being pivoted in the horizontal frame *B*, by means of the round or cross piece *o*, the said horizontal frame *B* will be moved back by the draw-head from under the vertically-sliding frame *A* to the position shown in Fig. 4 just in time to permit the said frame and the coupling-pin to drop through the hole in the draw-head and secure the connecting-link and automatically accomplish the coupling. When the draw-head moves forward the lever *C* will no longer engage with the lug *p* on the draw-head, but will drop to the position shown in dotted lines in Fig. 3, by reason of the preponderance of weight being in front of the pivots of the lever.

To facilitate the movement of the lever *C* past the lip or projection *e'* of the small horizontal sliding frame *D*, and also to facilitate the disengagement of the lever from the lug *p* of the draw-head, I prefer to round or slightly roll the forward end of the lever, as shown at *s*, and to still further facilitate and to make sure of the disengagement of the said lever *C* from the said lug *p* at the proper time, I prefer to bevel the rear face of the said lug, as shown at *s' s'* in Figs. 3 and 4. This disengagement is, however, made positive in case the draw-head is forced entirely back, or quite a distance back, by the roller *t*, pivoted above the lever in the hangers *o' o'*, secured to the

beams E E, (shown in Figs. 1, 3, and 4,) which roller acts as a shifting-stop and forces the lever downward and disengages it from the lug, as will be clearly understood from Fig. 4.

5 The bell-crank levers L L' are provided with the levers or cranks M M', for setting the lever C from the ground from either side of the car, and the inner end of the crank M' is extended, as shown at O, which extension has the eye rod or bolt *m* attached to it, to which
10 bolt is attached a small chain or rod, or similar attachment, *t'*, which leads to the platform or top of the car, so that the lever C may be set from the top or platform, if desired.

15 In order that any bumping of the cars will not cause the horizontal frame B to disengage the vertically-sliding frame A when the same is raised and permit the same to accidentally drop, I pivot to the under side of one of
20 the beams E the lever Q, one end of which is flattened, as shown at U, Fig. 1, and adapted to rest against or near to the rear end of the horizontal frame B, as shown in Fig. 1, the other end, *v*, of the said lever being extended
25 past the pivot *q* of the lever and downwardly and outwardly bent, so as to stand just in rear of the weight R, pivoted to the outside of the beam E in such position that any movement backward of the weight, which may be
30 caused by any bumping at the rear of the car, will swing the end *u* of the lever forward against the rear end of the horizontal frame B, and thus hold it from any backward movement.

35 The plate J is formed with the side loop or eye, *r*, for holding the coupling-pin in position for entering the central hole, *l'*, in the draw-head, so that it will pass through the link, entering the lower link-chamber, *c''*, and
40 it is formed also with the central hole, *r'*, for holding the pin in position for passing through the side hole, *l''*, in the draw-head for passing through the link entering the link-chamber *c'*.

45 In the link-chamber *c* is placed the heavy bolt S, which is formed with the forward projection or lip, *s''*, which is adapted to rest upon the rear end of the connecting-link when the same is placed in the link-chamber for
50 holding the link in horizontal position for properly entering the link-chamber of the opposing car.

When the draw-heads of the cars to be coupled are on the same level, and both are
55 provided with my couplings, the connecting-link having been placed in the link-chamber *c*, as just described, and the coupling-pin placed in the hole *l* in the draw-head and through the link in the ordinary manner, the
60 vertically-sliding frame A of the opposing car, with the coupling-pin placed in the central hole, *r'*, is to be raised and the lever C set. The coupler is now ready for coupling, and all that is necessary is to back the cars together, which
65 will force the draw-heads back and cause the pin to drop through the connecting link, as above described.

In case the draw-heads are not on the same level, a bent connecting-link will be used; and in case both cars are not provided with my
70 couplers a bent link will be used and it will be placed in the ordinary draw-head and will enter the lower link-chamber, *c''*, and the frame A and connecting-pin of my coupler having been raised and the lever C set, the con-
75 nection will be automatically made, as above described.

Instead of forming and using a roller, *t*, as above described, and attaching the same by the hangers *o'*, a rod may be formed all in one
80 piece, as shown in Fig. 7.

The parallel arms *b² b²* may be made of one piece and riveted to the frame A, as shown in Fig. 6, which is a cheaper construction. In
85 this case the chain *h* will be attached as shown in this figure, the movable bolt *h'* being dispensed with, the fixed bolt *h'''* being substituted for it, which holds the frame A and guides its vertical movement.

Having thus fully described my invention, 90 what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the vertically-sliding frame A and horizontally-sliding frame B, of the lever C, pivoted in the frame B and
95 adapted to be set for moving back the frame B by the backward movement of the draw-head, substantially as described.

2. The combination, with the vertically-sliding frame A, horizontally-sliding frame B, 100 and lever C, of the horizontally-sliding frame D, substantially as described.

3. The combination, with the horizontally-sliding frame B, of the lever Q and weight R, substantially as and for the purposes set
105 forth.

4. The lever C, in combination with the cranks L L' for setting the same, substantially as described.

5. The frame A, formed with the arms *b² b²* 110 *b²*, in combination with the plate J, which holds the coupling-pin, substantially as and for the purposes set forth.

6. The draw-head provided with the rod P, in combination with the plate J and the 115 frame A, substantially as described.

7. The draw-head H, formed with the link-chambers *c c'* and the lower link-chamber, *c''*, as and for the purposes set forth.

8. In combination with the draw-head, the 120 bolt S, formed with the forward projection or lip, *s''*, as and for the purposes set forth.

9. In a car-coupling, the combination, with the movable draw-head H, of the vertically-sliding frame A, horizontally-sliding frame B, 125 lever C, and frame D, the frame A being adapted to support the coupling-pin above the draw-head, substantially as specified.

10. In combination with the bell-crank lever L', the crank M', formed with the exten- 130 sion and provided with means for setting the lever C from the top or platform of the car, substantially as set forth.

11. The combination, with the lever C, of

the frame D, formed with the beveled lip or projection *e'*, as and for the purposes set forth.

12. The horizontal sliding frame B, formed with the beveled lip or projection *g'*, substantially as and for the purposes set forth.

13. The movable draw-head H, formed with the lug *p*, in combination with the horizontally-sliding frame B and lever C, substantially as described.

14. The movable draw-head H, vertically-

sliding frame A, adapted to hold the coupling-pin, in combination with the horizontally-sliding frames B and D, lever C, and the lever Q and weight R, substantially as and for the purposes described.

FREDERICK WILLIAM BROOKS.

Witnesses:

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JOHN KELLERMANN.