

(No Model.)

3 Sheets—Sheet 1.

J. JOSS.
CAR COUPLING.

No. 491,357.

Patented Feb. 7, 1893.

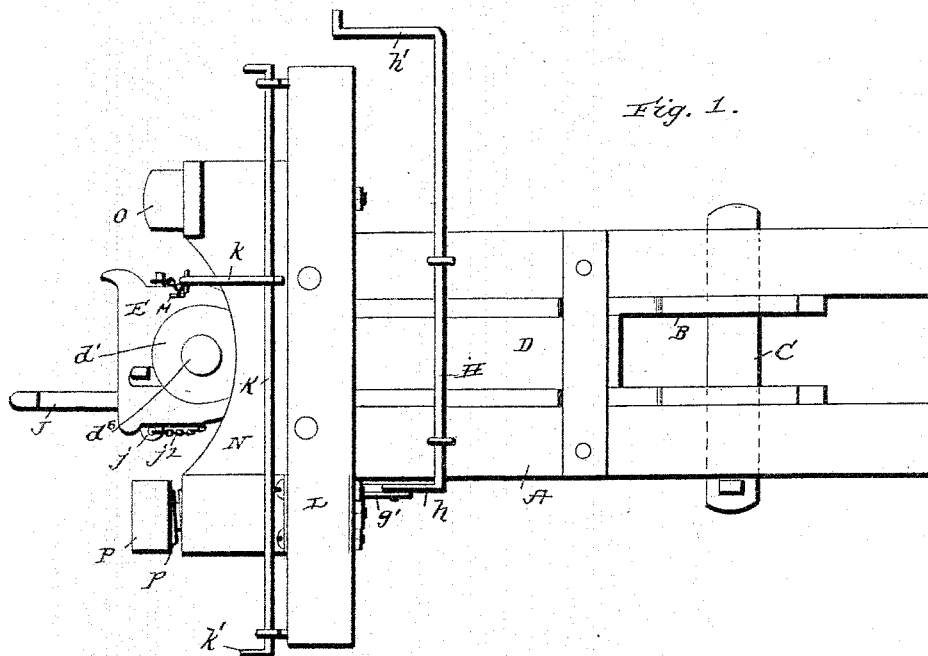


Fig. 1.

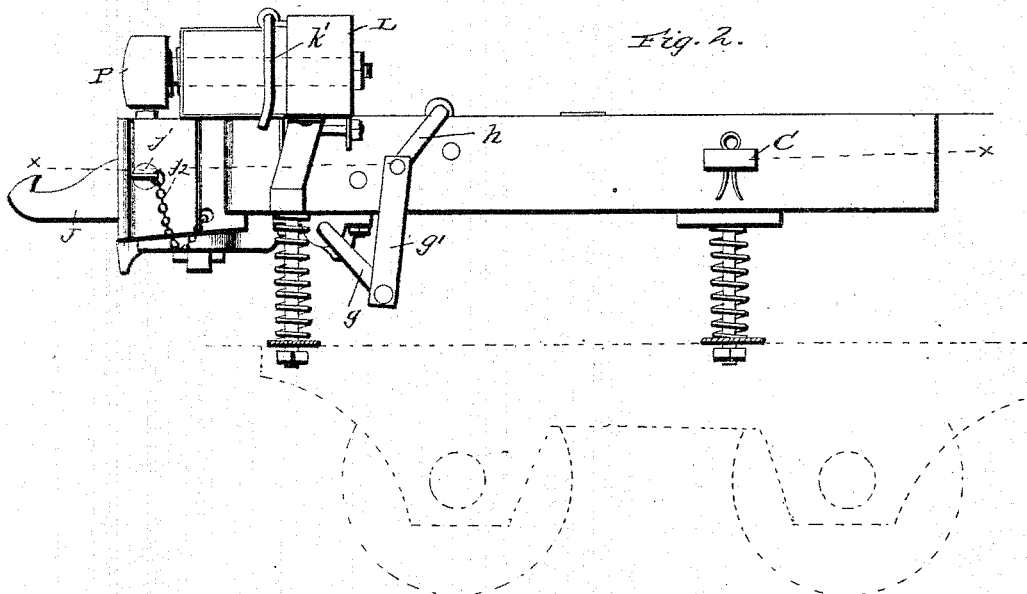


Fig. 2.

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Attorney

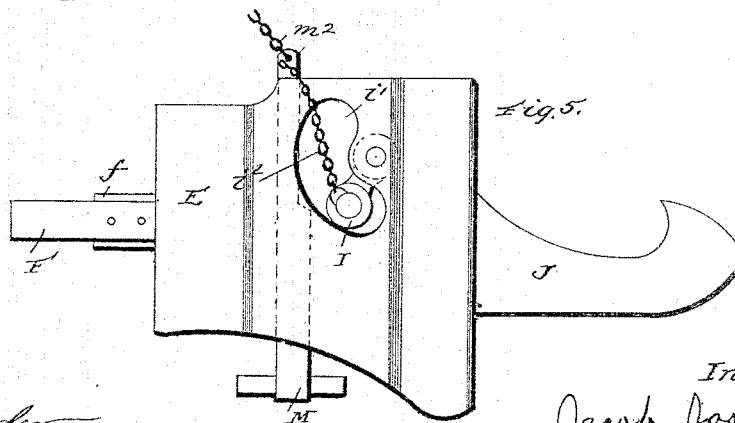
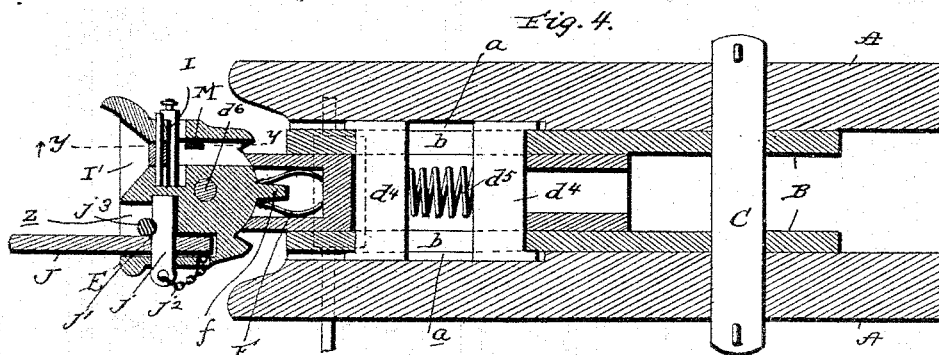
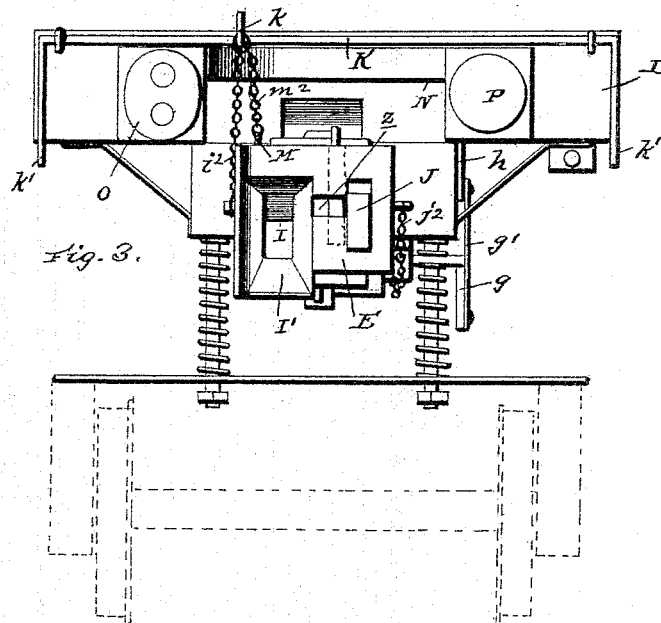
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3 Sheets—Sheet 2.

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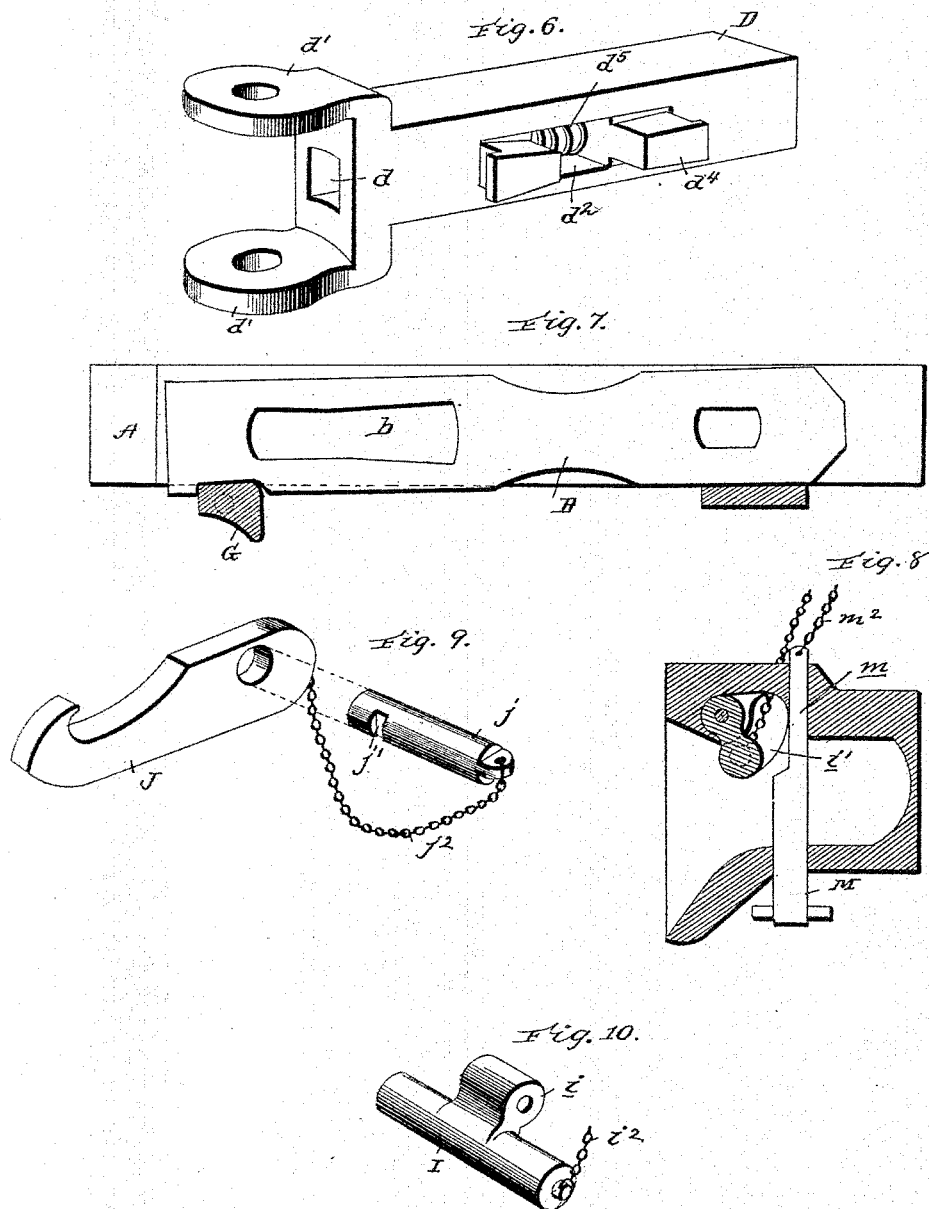
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3 Sheets—Sheet 3.

J. JOSS.
CAR COUPLING.

No. 491,357.

Patented Feb. 7, 1893.



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UNITED STATES PATENT OFFICE.

JACOB JOSS, OF ST. JOSEPH, MISSOURI.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 491,357, dated February 7, 1893.

Application filed April 27, 1892. Serial No. 430,917. (No model.)

To all whom it may concern:

Be it known that I, JACOB JOSS, a citizen of the United States, residing at St. Joseph, in the county of Buchanan and State of Missouri, have invented certain new and useful Improvements in Automatic Car-Couplings; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to car couplings of that class which is automatic in its operation, coupling when the cars are run together and which can be uncoupled from either side or the top of the car, thereby obviating the necessity of persons going between the cars for coupling or uncoupling.

The invention aims to provide a simple and efficient coupling which will prevent the accidental uncoupling of the cars when slowing up a train or when the train is going down grade, a lock bar being provided to secure the catch until properly released, and which will permit the train to make short curves in either direction, the coupling head being pivotally connected with the draw bar to turn laterally to adapt its position to the line of the draft.

A further purpose of the invention is to improve the general construction of this class of devices whereby the efficiency and usefulness of the same is increased to an eminent degree.

The invention consists in the peculiar construction, and novel features and combination of parts, which will be hereinafter more fully described and which are shown in the annexed drawings, in which:

Figure 1, is a top plan view of a car coupling embodying my invention. Fig. 2, is a side view of the invention showing the truck by dotted lines. Fig. 3, is a front view of the coupling. Fig. 4, is a horizontal section on the line *x, x*, of Fig. 2, showing the link in section. Fig. 5, is a side elevation of the coupling head detached and on a larger scale. Fig. 6, is a detail view of the draw-bar. Fig. 7, is a detail view of one of the draft bars showing its relation to the car beam, and showing the lifting bar for regulating the height of the coupling. Fig. 8, is a detail section on the line *y, y*, of Fig. 4, looking in the direction of the arrow, showing the catch and the

lock bar. Fig. 9, is a detail view of link and the pin for connecting the link to the coupling head. Fig. 10, is a detail view of the catch.

Like letters of reference denote corresponding parts in the several figures of the drawings referring to which:

The draw bar D, is yieldingly connected with the parallel draft bars B, which are located between the car beams A, and secured thereto by the pin C. The front end of the draw bar is provided with an opening *d*, and with parallel ears *d'*, the opening *d*, receiving a stem *f*, projecting from the rear end of the coupling head E, and the ears *d'*, having the coupling head pivotally connected between them by the pin *d⁶*. The top and bottom sides of the coupling head are recessed to receive the ears *d'*, so that the latter will come about flush with the said sides. A longitudinal slot *d²*, is provided in the draw bar and short cross bars *d⁴*, at each end of the said slot project beyond the sides of the draw bar far enough to engage with slots *b*, in the draft bars B, and enter grooves *a*, in the opposing sides of the car beams A. The outer ends of the cross bars *d⁴*, are flanged to overlap the draft bars at the ends of the slots *b*. The spring *d⁵*, between the cross bars *d⁴*, permits the draw bar to yield forwardly and rearwardly. The rear ends of the slots *b*, are wider than the front ends to permit the draw bar to have an independent vertical movement to adapt itself to the vertical movements of the cars.

The lifting bar G, journaled in suitable bearings beneath the car beams A, has a crank *g*, at one end which is connected by link *g'*, with the crank *h*, at the end of the shaft H, that is journaled on the upper side of the said beams A. This shaft H, is rotated in its bearings by means of the crank lever *h'*. On actuating the shaft H, the bar G, is turned on its journals to raise or lower the draft bars B, at their front ends to change the level of the coupling head to suit the level of the coupling head on the car to be coupled.

The coupling head E, is adapted to turn laterally in either direction to adapt itself to the direction of the line of draft and is held in a normal position by springs F, which are secured to the stem *f*, and which have their

rear ends constructed to bear laterally on the sides of the opening d , as most clearly shown in Fig. 4. A link I, and a catch J, are located on opposite sides of the center of the coupling head.

The link J, is hook-shape and is pivotally connected with the coupling head by pin j . A notch j' , near the inner end of the pin j , receives the vertical pin j^3 , which locks the said pin j , in place and also serves in practice to engage and hold the link of the old type of coupling when the same enters the opening z , of my improved coupling head. A chain j^2 , connects the link J, and the pin j , and is adapted to pass through an opening in the side of the coupling head. The catch I, has a projection i , by means of which it is pivotally connected with the coupling head above the link opening I'. Curved slots i' , are provided in the sides of the coupling head bordering on the link opening I', to receive the ends of the catch I. A chain i^2 , connects the end of the catch I, with an arm k , projected from the shaft K, which is journaled to the end cross beam L. Handles k' , at the ends of the shaft K, serve as means to turn the shaft and uncouple the cars.

The vertical lock bar M, located immediately in rear of the catch I, is connected by chain m^2 , with the arm k , and has its upper portions m , reduced so as not to interfere with the free movements of the catch when the said lock bar is down or occupies the position shown in Fig. 8. After the cars are coupled the lock bar is drawn up so that its lower portion will project within the path of the catch and prevent it from turning up.

The beam N, secured to the end cross beam L, is depressed on its front side between its ends so as not to interfere with the free movements of the coupling head, and has bumpers O, and P, at its opposite ends to relieve the jar when the cars are run together. The bumper P, is adapted to yield, a spring p , being interposed between it and the beam N.

In practice the coupling head is normally held in its uppermost position, and is only lowered in cases of necessity, as in the event of the coupling of the approaching car being very low or of an irregular build.

Having described my invention what I claim is:—

1. In a car coupling the combination with draft bars connected to the car beams, of a draw bar connected with the said draft bars, and a lifting bar constructed to move the draft bars vertically to change the elevation of the coupling carried by the said draw bar, substantially as described.

2. In a car coupling the combination with draft bars connected to the car beams and adapted to be moved vertically, of a draw bar yieldingly connected with the said draft bars, and having an independent vertical movement, substantially as and for the purpose described.

3. In a car coupling the combination with

draft bars connected to car beams, and a lifting bar for elevating the said draft bars, of a draw bar yieldingly connected with the said draft bars and having an independent vertical movement, substantially as and for the purpose described.

4. In a car coupling the combination with draft bars connected to the car beams, and having slots b , of a draw bar having slot d^2 , cross bars at the ends of the slot d^2 , having their ends extending into the slots b , and a spring between the said cross bars, substantially as described for the purpose specified.

5. In a car coupling the combination with the car beams, having grooves a , in their opposing sides, the draft bars connected with the said car beams and having slots b , of a draw bar having slot d^2 , cross bars at the ends of the slot d^2 , and extending through the slots b , and projecting into the grooves a , and a spring between the said cross bars, substantially as described.

6. In a car coupling the combination with draft bars connected to the car beams, and having slots b , which are wider at one end than the other, of a draw bar having slot d^2 , cross bars at the ends of slot d^2 , and extending into the slots b , and a spring between the said cross bars, substantially as specified.

7. In a car coupling the combination with a draw bar having opening d , of a coupling head pivotally connected with the draw bar, and having a rear extension to enter the said opening d , substantially as set forth.

8. In a car coupling the combination with a draw bar having opening d , of a coupling head pivotally connected with the said draw bar, and having a rear extension to enter the said opening d , and springs between the sides of the said rear extension, and the sides of the said opening, substantially as described.

9. In a car coupling the combination with a draw bar having parallel ears d' , and having an opening d , of a coupling head, pivotally supported between the said ears, and having a rear extension to enter the said opening d , and springs secured to the said rear extension and adapted to bear laterally against the sides of the opening d , substantially as set forth.

10. A coupling head having a link at one side, and having a catch and lock bar at the opposite side, substantially as set forth.

11. The combination with a coupling head, of a link, a horizontal pin pivotally connecting the link with the said head, and a vertical pin to interlock with the said horizontal pin, substantially as described.

12. The combination with a coupling head having an opening in its side, of a link, a pin pivotally connecting the link with the said head, and a chain passing through the said opening and connecting the link and pin, substantially as set forth.

13. The combination with a coupling head having curved slots i' , of a catch having its ends projected into the said slots, and having

an extension *i*, by which it is pivotally connected with the said head, substantially as described.

14. In a car coupling the combination with the coupling head, and a swinging catch, of a lock bar to hold the said catch from swinging, substantially as set forth.

15. The combination with the coupling head, and the swinging catch, of a vertical lock bar,

having a reduced portion, substantially as described for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

JACOB JOSS.

Witnesses:

ALBERT J. ALBRECHT,
OTTO SALTZMAN.