L. GASSER.

Car-Coupling.

No. 204,313. Patented May 28, 1878.

Fig. 1.

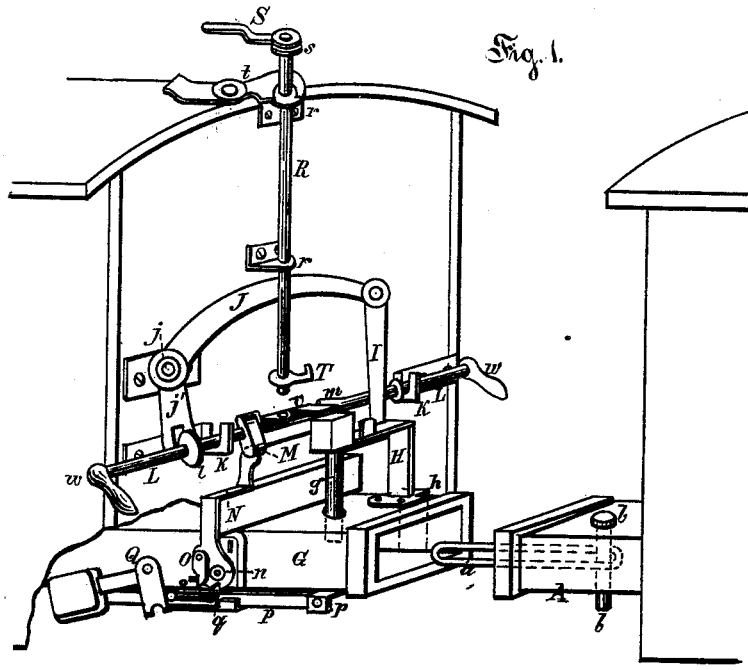


Fig. 3.

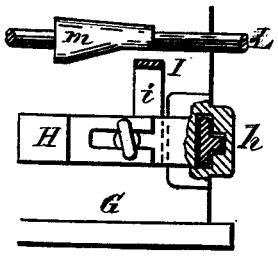


Fig. 2.

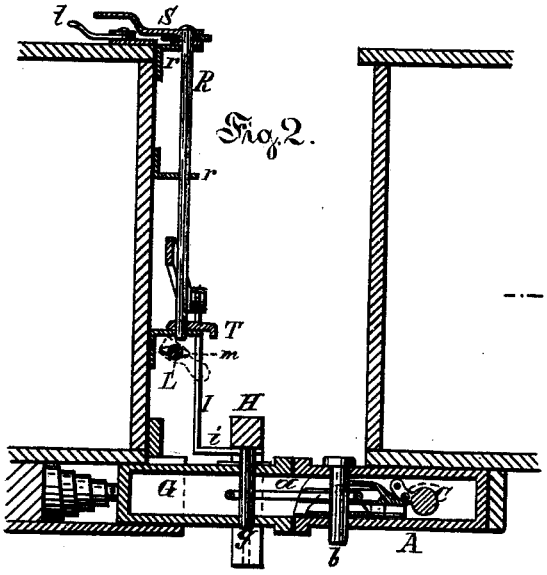
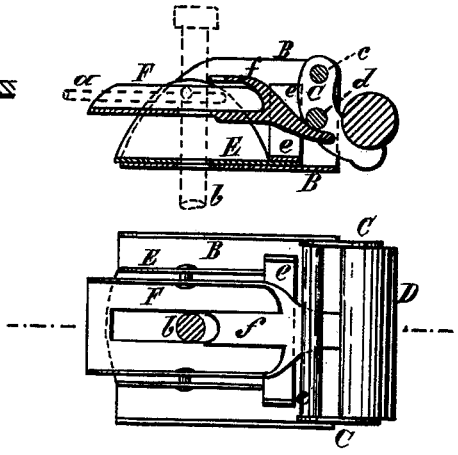


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

LOUIS GASSER, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF HIS RIGHT TO PHILIPP BORGER, OF SAME PLACE.

IMPROVEMENT IN CAR-COUPLINGS.

Specification forming part of Letters Patent No. **204,313**, dated May 28, 1878; application filed April 30, 1878.

To all whom it may concern:

Be it known that I, LOUIS GASSER, of Chicago, in the county of Cook and State of Illinois, have invented a new and Improved Car-Coupling, which improvement is fully set forth in the following specification and accompanying drawing.

The nature of my invention relates to draw-bars for railroad-cars which will automatically couple, and which can be uncoupled from either side or from the top of the car; and it consists, first, of an arrangement inside of one of the draw-bar heads for holding the coupling-link in a horizontal and straight position for coupling with the draw-head of the next car, and yet permit its yielding to an angular pull; second, in securing the coupling-pin to a vertically-guided head-piece, resting upon a hook-ended bar pendent from an angular lever, which is pivoted to the end of the car, and operated from and locked by a tumbler-rod resting upon brackets on the car end, and having handles at its ends; third, in a vertical rod pivoted against the end of the car-body, by which to retract the coupling-pin or to release the coupling mechanism from the top of the car; and, fourth, in the attachment of a weighted lever and latch device, by which and by the concussion of the draw-heads the elevated coupling-pin is set free to drop and engage with the coupling-link.

In the drawing, Figure 1 represents a perspective view of the ends of two cars, showing the draw-heads in position for self-coupling. Fig. 2 represents a vertical longitudinal section through the center of the draw-heads and self-coupling mechanism; Fig. 3, a plan of the self-coupling draw-head, and of its appending parts; and Fig. 4, a longitudinal section, and a plan of the link-guiding device inserted into one of the draw-heads.

A is the draw-bar head, holding and guiding the link. *a* is the coupling-link, and *b* the coupling-pin, all of which is made in the usual manner. Into the cavity of the head A is inserted a scoop-shaped frame, B, the upper rear edges of which are connected by a lateral brace-rod, *c*, which forms the pivot for the upper ends of two curved arms, C, connected in about their middle by a rod, *d*, and holding between their bottom ends a weight, D. A hole in the bottom of this frame B, through which the coupling-pin end is to pass, corresponds in size with the hole in the draw-head. Into this frame B is loosely placed a plate, E, of considerable less width than the space in the said frame B, having a hole for the coupling-pin and an expanded rear end with vertically-projecting ends *e*, which lean against the rod *d*, so that a horizontal vibration of said plate in either direction will cause the weight D to be raised, which, by its gravity will compel said plate to assume its parallel position again as soon as it is released from side pressure. This plate E has vertical side brackets, rising from about its middle, between which is pivoted another scoop-shaped piece, F, so as to have a rocking motion therein. It has an oblong hole for the coupling-pin to pass through, and is to receive and support one end of the coupling-link, held therein by a hook-shaped projection, *f*, which is affixed to the top rearward end, while its extreme rearward end is slanting downward, and is, in its upward movement, resisted by the rod *d* and the appending weight D, so as to hold the coupling-link *a* in a horizontal position and yet yield to a deflection of the same.

As will be noticed, by this device, the use of a spring, on which for such purposes but little dependence can be placed, is obviated, while one single weight will horizontally and vertically adjust the direction of the link; and, besides, it is so constructed that it can be applied to an old-fashioned draw-head with but little expense.

G is the draw-head of the next car, arranged to automatically couple with the link *a*, the head of the coupling-pin *g* of which is secured to the end of an angular piece, H, its vertical arm moving in a guide, *h*, arranged in or attached to one side of the said draw-head G.

I is a bar, having a rectangularly-projecting foot, *i*, which carries the pin guide-piece H,

and permits of a longitudinal sliding motion thereon. The top end of this bar I is pivoted to the end of a curved arm, J, moving on a fulcrum, *j*, fixed to the end of the car-body, and having a bifurcated pendent extension, *j'*.

L is the tumbler-rod, placed transversely against the end of the car-body in suitable bracket-bearings K, so as to permit of a lateral and of a rotary movement of the same. This rod L has a collar, *l*, engaging with the bifurcated end of the lever-extension *j'*, so that a lateral motion of the same will impart a vertical motion to the pendent bar I and to the coupling-pin *g*; and at *m* said rod L has two opposite nose-projections, which will engage and shoulder with a stop-plate, *v*, fixed against the end of the car, and by means of which the tumbler-rod will hold the coupling-pin *g* suspended.

M is a weighted lever or arm, which is so attached to the rod L that by locking the nose *m* to stop *v* it will assume a vertical position; but if turned its gravity will impart rotating motion of one-quarter of a revolution, whereby the shouldering-nose *m* will disengage from the stop *v*, and the coupling-pin and attachments will drop by their own gravity, imparting thereby a lateral movement to the rod L. Handles *w* are mounted upon the ends of rod L, by which to operate said rod from either side of the car by either pushing or pulling it until the coupling-pin *g* has been elevated, and then to lock it by giving it a quarter-turn in either direction.

N is a vertical arm, pivoted at *u* to a fixed plate under the car-body. This arm is offset on its upper end, so that its extremity is in line with the lever M, while at its fulcrum it is provided with a rearward-extending heel, carrying a pendent latch, O, pivoted thereto and leaning against a shoulder, *o*, which only permits of a forwardly-yielding movement of said latch.

P is a bar parallel with and connected to the draw-head G by a bracket, *p*, which bar is supported and guided in a channeled bracket underneath the car-body, and which has a toe, *q*, affixed to come in contact with the latch O by the longitudinal movement of the draw-head G toward the center of the car, whereby it will lift the heel of arm N and cause it to vibrate, while on its return movement the latch will offer no resistance to the toe *q*.

By turning the rod L so that the weighted lever M will hang downward, said lever will rest against the end of the arm N, the vibrating motion of which, caused by the concussion of the draw-bar heads, will impart to said lever M a movement of one-quarter of a revolution, thereby disengaging the nose *m* and releasing the coupling-pin; but if the lever M is turned upward by said rod L so as to assume a vertical position, the concussion of the draw-bar heads will have no effect upon it.

Q is a rectangular lever, pivoted underneath the car-body, the vertical arm of which presses against the end of the sliding bar P by the pressure caused from a weight attached to the end of the horizontal arm of said lever, the object of which is to bring about a longitudinal-sliding motion of the draw-bar independently of the buffer-springs. R is an upright rod, pivoted into suitable brackets *r* to the end of the car-body, so as to permit of a rotating and of a vertical sliding motion therein. It has a handle, S, secured to its upper extremity, with a grooved collar or hub, *s*, underneath it to interlock with a pivotal latch, *t*, on top of the car, by means of which to stop longitudinal motion of said rod. T is a crank, attached to the bottom end of said rod R, having a hook-shaped end. This rod R is for uncoupling the cars from the roof of the same by retracting the latch *t* and lifting said rod, whereby the crank T will catch under the curved arm J and will lift it, with the appending crank-pin, when, by the action of the weighted lever M, the tumbler-rod L and the nose thereon will lock the link in its suspended position, as heretofore described; and for causing the pin *g* to drop, the latch *t* is turned into the groove of collar *s*, when, by a rotating motion of rod R, the crank T will engage with and impart a quarter-turn revolution to the weighted lever M and to the tumbler-rod L, thereby disengaging the nose *m* from the stop *v* and releasing the coupling-pin *g*, which now will drop by its own gravity.

The above-described self-coupling device can be attached to an old-fashioned car-coupling, and will save its cost within a very short time in the economizing of coupling pins and links, so frequently lost and broken heretofore, and in doing away with the necessity of a man going between the cars for coupling and uncoupling the same, which, with my arrangement, is accomplished from either side or from the top of the car. It will prevent accidents to human life, so frequently occurring heretofore.

What I claim as my invention is—

1. The draw-head A, coupling-link *a*, and pin *b*, in combination with the link-holding device, consisting of frame B, arms C, with rod *d* and weight D, the plate E, and piece F, all constructed, arranged, and operating substantially in the manner set forth.

2. The draw-head G, having pin *g* attached to guiding-piece H, in combination with the car-body having bar I, arm J *j'*, and tumbler-rod L, arranged with collar *l*, nose-projections *m*, weighted lever M, and handles *w*, and stop *v*, all of which to be constructed and to operate substantially in the manner set forth.

3. In a car-coupling, the combination, with the tumbler-rod L for locking the coupling-pin in an elevated position, the bar P, having toe *q*, and the arm N having latch O, all of which to be constructed, arranged, and

operating substantially as shown and described.

4. In a car-coupling, the combination, with the tumbler-rod L, the arm N having latch O, the bar P having toe *q*, and the weighted lever Q, all substantially as and for the purpose set forth.

5. The draw-head G, having pin *g* attached to the guiding-piece H, the bar I, arm J *j'*, the tumbler-rod L, having collar *l*, nose-projections *m*, and weighted lever M, and stop *v*, in combination with the rod R, pivoted in brackets *r*, and having handle S, grooved collar *s*, crank T, and latch *t*, all constructed, arranged, and operating substantially in the manner shown and described.

LOUIS GASSER.

Witnesses:
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