

(No Model.)

2 Sheets—Sheet 1.

J. H. LANGSCHMIDT.
CAR COUPLING.

No. 472,505.

Patented Apr. 5, 1892.

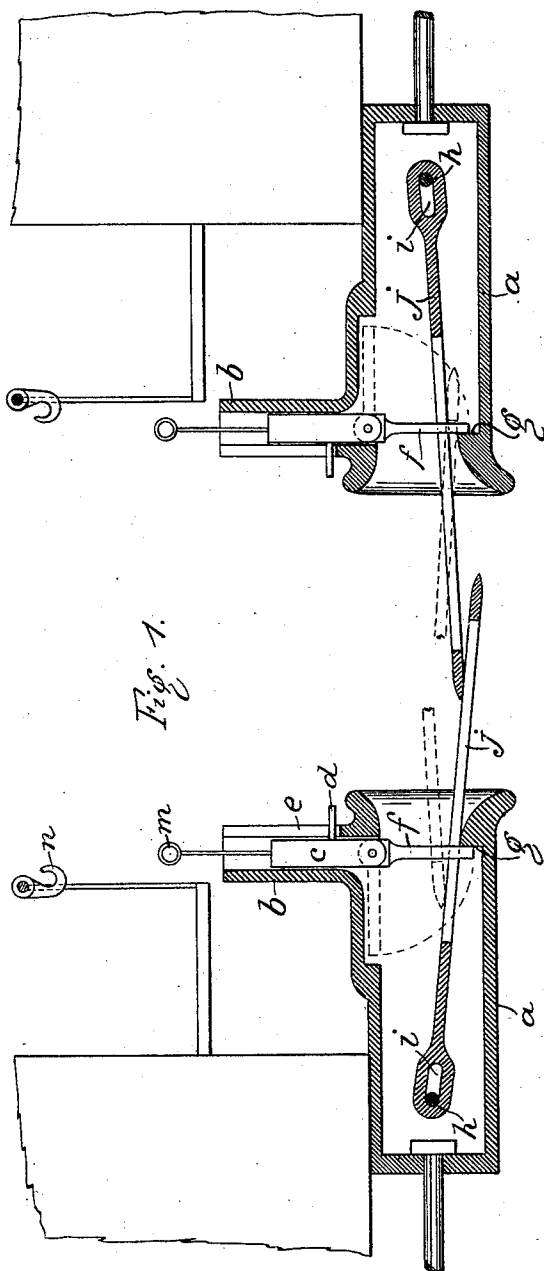


Fig. 1.

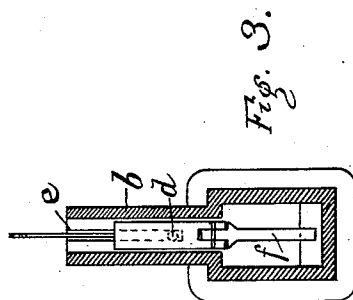


Fig. 3.

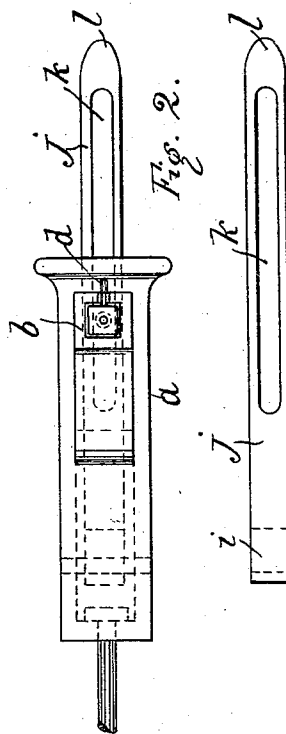


Fig. 2.

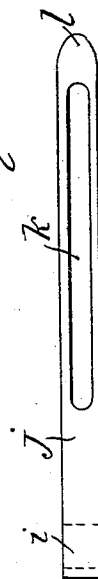


Fig. 4.

Witnesses
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2 Sheets—Sheet 2.

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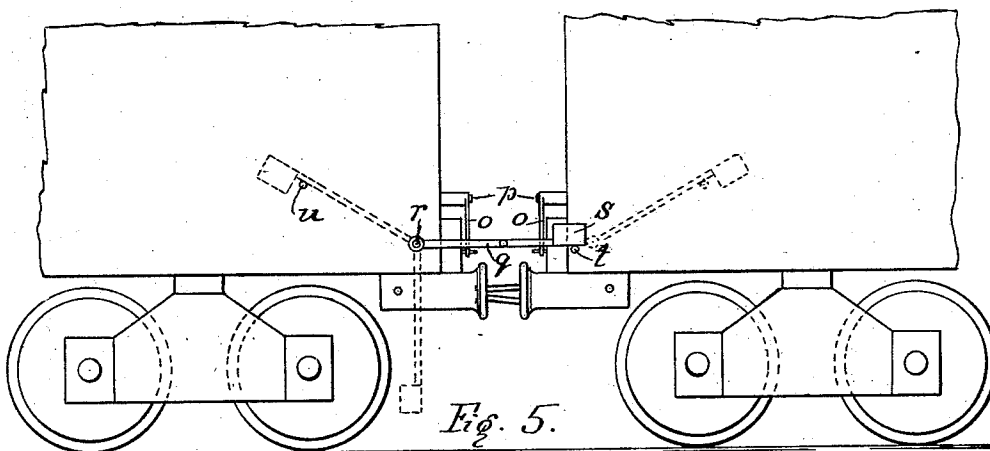


Fig. 5.

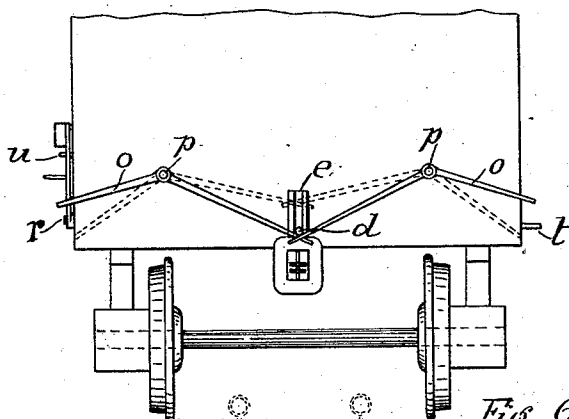


Fig. 6.

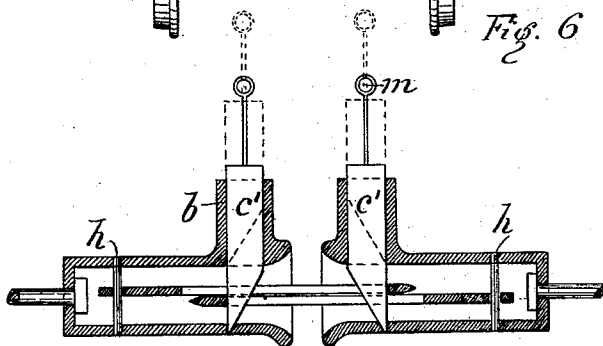


Fig. 7.

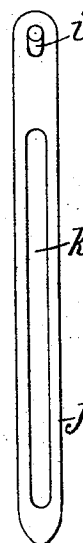


Fig. 8.

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UNITED STATES PATENT OFFICE.

JOHN HENRY LANGSCHMIDT, OF CHICAGO, ILLINOIS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 472,505, dated April 5, 1892.

Application filed January 11, 1892. Serial No. 417,669. (No model.)

To all whom it may concern:

Be it known that I, JOHN HENRY LANGSCHMIDT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Car-Couplers, which are fully set forth in the following specification, reference being had to the accompanying drawings, forming a part hereof, and in which—

Figure 1 shows a vertical longitudinal section of a pair of my car-couplers with fragments of passenger-cars to each in the act of coupling. Fig. 2 shows a single member or draw-head in plan view in which the interior parts are shown in broken lines. Fig. 3 shows a transverse vertical section of a draw-head, taken on a plane in front of the locking bolt or pin. Fig. 4 shows a single link in plan view. Fig. 5 shows two connected freight-cars with the coupling mechanism in the open condition. Fig. 6 shows a freight-car with my device in a closed condition as seen in end view. Fig. 7 shows a modified form of my device in vertical longitudinal section. Fig. 8 shows a modification of the construction of my link.

Like letters refer to like parts.

The object of my invention is to construct a car-coupler which with slight modification of some of its parts may be applied to freight as well as passenger cars and which shall in either case become an automatic coupler, and in order to attain said desirable ends I construct my said device in substantially the following manner, namely:

I provide the usual hollow draw-heads *a* with the usual flaring opening. On the upper side of said draw-heads, near their front ends and axial vertical plane, I erect a tubular projection *b*, in which plays freely a close-fitting bar *c*, in which is a pin *d*, which projects beyond said part *b* and plays in a slot *e*, extending from near the base to the top of said tube *b*. Said bar *c* in its lowest position extends beyond the upper surface of the interior of the draw-head, and to its lower end is attached a pin *f*, which swings freely on a hinge-joint, as indicated, but is arrested in its forward motion by a stop *g* within on the bottom of the draw-head. Near the rear end

of each draw-head is a pin *h*, which passes transversely through the draw-head either vertically or horizontally, as shown; but for obvious reasons the latter position is preferred. Said pin holds a link *j*, in which there is a slot *i* large enough to allow full lateral motion to said link and also free vertical motion. Each link has a large slot *k*, and is both rounded and sharp in front, as shown at *l*. Each draw-head is provided with such a link, which is held permanently by said pin *h*, and each link and pin is placed in the same relative position in each draw-head.

When my couplers are used on passenger-cars, the bars *c* are provided with a chain or rope at their upper end to the upper end of which is secured a ring *m*, and on some suitable part of the platform is secured a hook *n*, into which the ring is hung when the coupling-bolt *c f* is to be withdrawn or the parts uncoupled, and from said place said coupling-bolt *c f* is released and dropped whenever the links *j* have passed over each other, as shown in Fig. 7. To make the links thus pass over each other they are made both sharp and round, as shown at *l*, so that they may always pass over each other without jar and so as to cause the upper link to seek the slot *k* in its motion over the lower link, the width of the links being proportioned to the opening of the draw-head, so that the links cannot pass to the outside of each other.

To apply my couplers to freight-cars I attach over each draw-head a lever *o*, turning on a fulcrum *p*, one on each side of the draw-head, of which their inner ends cross under the pin *d* and of which their outer ends project a short distance beyond the sides of the car-body. To the side of one of the opposed cars is attached a lever or arm *q*, hung on a pivot *r* on which it may turn or revolve, and the free end of said arm is, if necessary, provided with a weight *s*. On the opposite arm *q* is a pin *t* on which said arm rests, and on the car which carries the arm *q* is a fixed pin *u*. When cars are to be coupled, said arm (shown in broken lines) rests on the pin *u*. As the links now approach and slide over each other into place, the lower link sliding on the round or sloping end of the draw-head, they

push back the pendent and hinged part *f* of the coupling-pin until the links have entered the draw-heads far enough to permit said parts *f* to fall into the slots *k*. The cars are then securely coupled together. To uncouple the cars, throw the arm *q* into the position shown in Fig. 5 in full lines. This moves the levers *o* into the position indicated in broken lines and the bolt *c f* is raised beyond the reach of the links, and thus the parts are uncoupled. Said arm *q* may also be allowed to hang down, as indicated in broken outlines in Fig. 5. In the modified construction shown in Fig. 7 there is but a single bolt *c'*, which is made wide in the direction of the draw-head length with a beveled end, as shown, which when struck by the moving link will rise and allow it to enter fully, after which it will, as in the other case, fall into place and complete the coupling. When the pin *h* passes through the draw-head vertically, the hole in the link *j*, for it is made oblong to allow free vertical play to the link, as shown in Fig. 8. When the arm *q* holds the levers *o*, as shown in Fig. 5, the coupling-bolts have released the links *j*. If the cars are then separated, the end of the arm *q* will drop from its supporting-pin *t* and release said levers and bolts after the links *j* have passed beyond the reach of the coupling-bolts, the arm *q* being made long enough to answer said purpose.

What I claim is—

1. The combination, with draw-heads provided with tubes *b* near their front ends and upper sides and links *j*, with slots *i* for the pin *h*, said links having horizontal slots *k* and sharp and rounded edges *l*, of coupling-bolts adapted to reciprocate in said tube *b* and enter the slots *k*, substantially as specified.
2. The combination, with draw-heads provided with tubes *b*, having slots *e* and pins *h* near their rear ends, and links *j*, with slots *i* for the pins *h*, said links having horizontal slots *k* and sharp and rounded edges *l*, of coupling-

bolts adapted to reciprocate and enter said slots *k*, substantially as specified.

3. The combination, with draw-heads having interior shoulders *g* and tube *b* over the same and links *j*, provided with sharp and rounded front ends *l*, slots *k* and *i*, with pin *h* through said slot *i*, secured near the rear ends of the draw-heads, of reciprocating coupling-bolts consisting of an upper part *c* in said tube *b*, carrying a part *f*, hinged thereto at its lower end and adapted to swing freely thereon, and mechanism *m n* to suspend said coupling-bolts, substantially as specified.

4. The combination, with draw-heads provided with slotted tubes *b* on their upper side, shoulders *g* on their inner side directly under said tubes, links *j* with both sharp and rounded front ends *l*, and slots *k* and *i*, of vertically-reciprocating coupling-bolts with pin *d*, levers *o*, fulcrumed at *p*, whereof one end lifts at said pin *d* and the other projects beyond the side of the car, and arm *q* on the side of the car to act on the projecting end of said levers *o*, substantially as specified.

5. The combination, with draw-heads provided each with a permanently-attached link secured near the rear end of said draw-heads and provided at its front part with a horizontal slot *k*, and slotted tube *b* on the front and upper side of the draw-head, provided with coupling-bolt having a pin *d* projecting beyond said slot, of levers *o* on the side of the draw-head, fulcrumed at *p* and having their inner ends projecting under said pin *d* and their outer ends projecting slightly beyond the sides of the car, an arm *q*, attached to the side of the car to rotate on a pin *r*, and a pin *t* to carry the free end of said arm, substantially as specified.

JOHN HENRY LANGSCHMIDT.

Witnesses:

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FRANK D. OSBORN.