

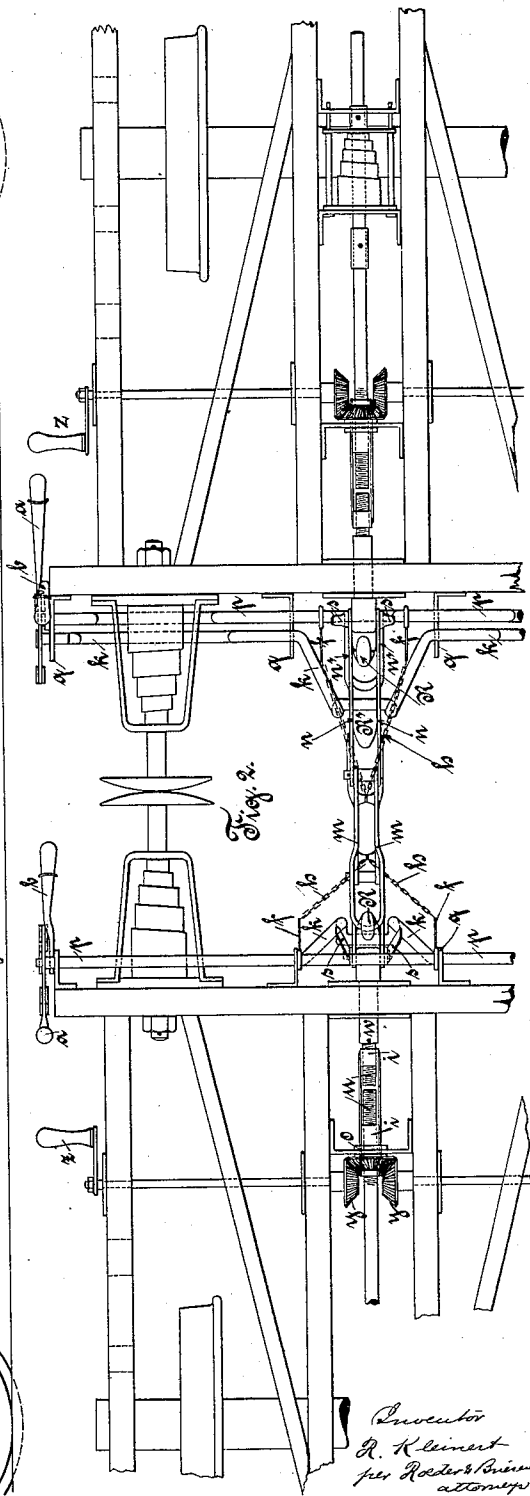
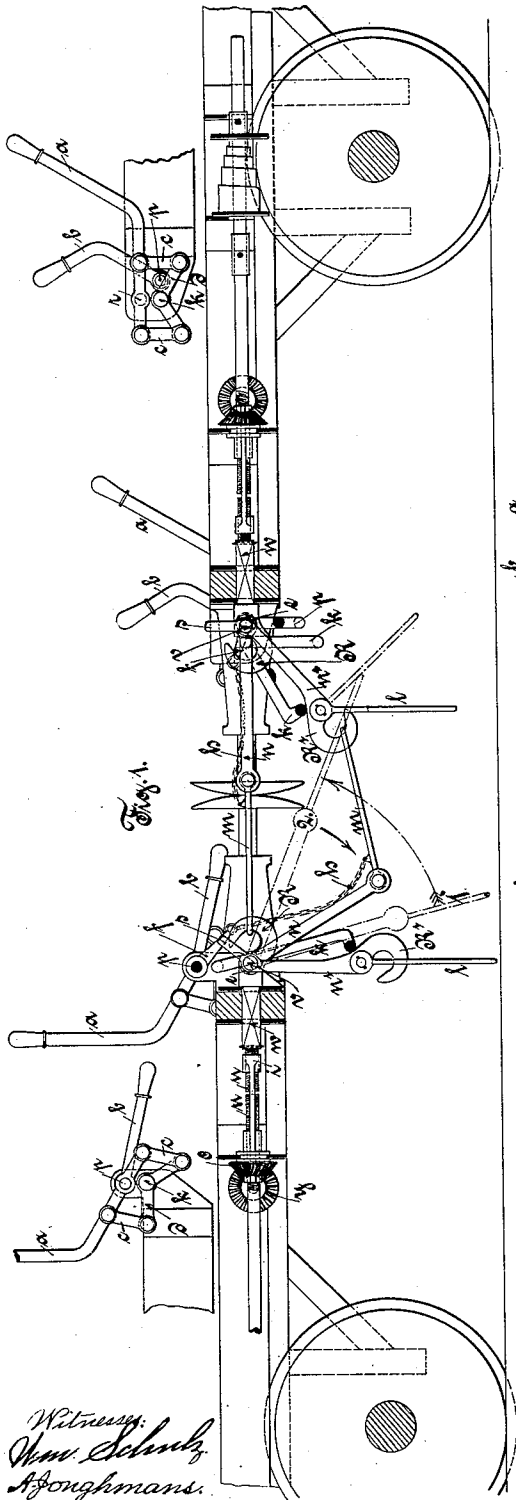
(No Model.)

2 Sheets—Sheet 1.

R. KLEINERT.  
CAR COUPLING.

No. 482,904.

Patented Sept. 20, 1892.



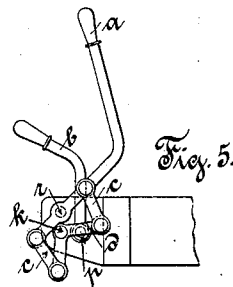
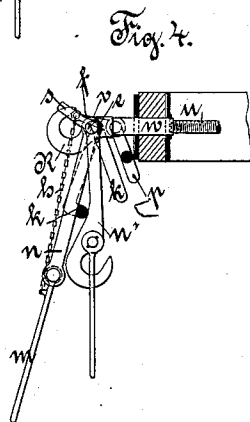
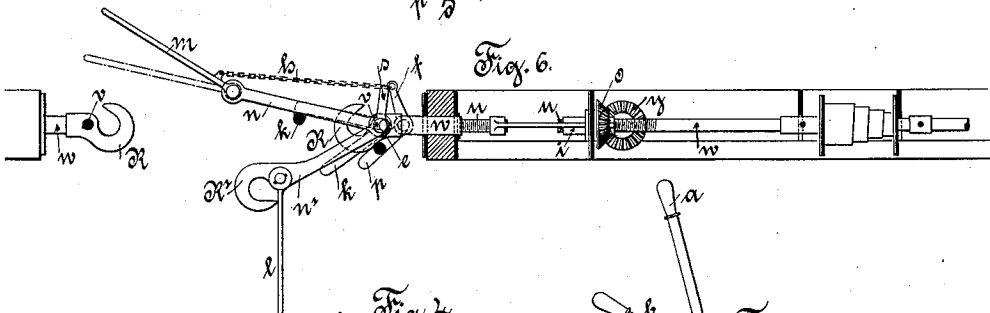
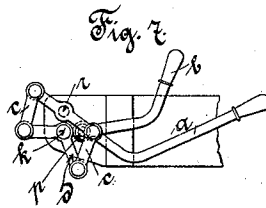
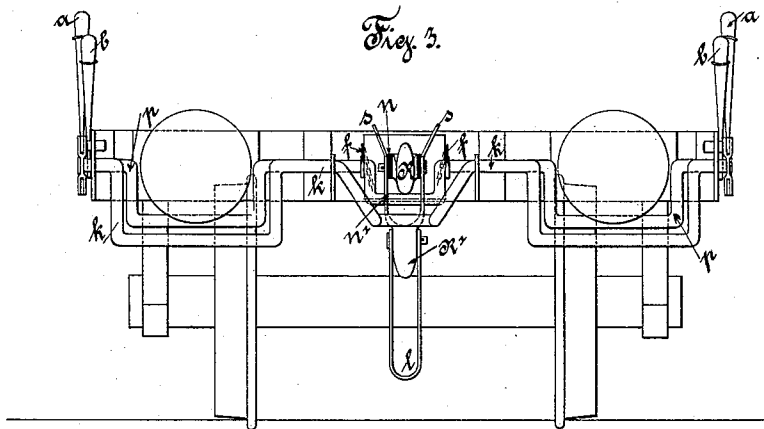
(No Model.)

2 Sheets—Sheet 2.

R. KLEINERT.  
CAR COUPLING.

No. 482,904.

Patented Sept. 20, 1892.



Witnesses:  
*Wm. Schuly*  
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# UNITED STATES PATENT OFFICE.

ROBERT KLEINERT, OF Breslau, GERMANY, ASSIGNOR TO KÖRNER & SCHULTE, OF SAME PLACE.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 482,904, dated September 20, 1892.

Application filed April 8, 1892. Serial No. 428,306. (No model.) Patented in Germany May 13, 1891, No. 62,010.

*To all whom it may concern:*

Be it known that I, ROBERT KLEINERT, a citizen of the Kingdom of Prussia, residing at Breslau, in Silesia, Empire of Germany, have invented a new and Improved Car-Coupling, (for which I have obtained a patent in Germany, dated May 13, 1891, No. 62,010,) of which the following is a specification.

My invention relates to improvements in railway-couplings in which the coupling mechanism is actuated by cranked cross-shafts rotated by levers or handles; and its object is to provide a coupling device which allows a reliable coupling or uncoupling from the side of the cars or vehicles, so that the brakeman does not stand in need of working between the platforms of the railway-cars. I attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal elevation showing two railway-cars coupled together by the new railway-coupling. Fig. 2 is a plan of Fig. 1. Fig. 3 is a front view of the coupling mechanism, the parts being in the position shown in Fig. 1. Fig. 4 shows the position of the railway-coupling when not in use. Fig. 5 illustrates the original position of the actuating-levers. Fig. 6 represents the railway-coupling in the raised position necessary for coupling, and Fig. 7 illustrates the disposition of the actuating-levers for this raised position.

The new railway-coupling consists of links *n*, pivoted to the draw-bar *w* by means of a bolt *v*, and of a loop *m*, pivoted to the other end of the links *n* and held normally in a nearly-straight position by suitable stops. To the bolt *v*, moreover, is pivoted a bifurcated link or rod *n'*, terminating in a hook *R'*, the opening of which is inversed to that of the draw-hook *R*. The upper ends of the link *n'* are fitted with guide-flanges *s*, which prevent that the loop *m* can pass to the side of the draw-hook *R*. The links *n* are provided with tappets *e*, the purpose of which will be explained farther on.

In the bearings *q*, fixed on the front beams of the cars, there are arranged the cross-shafts *k* and *p*, actuated independently of each other by the hand-levers *a* and *b*. These cross-shafts serve for raising and engaging the

jointed link-loops *n m* with the draw-hooks *R* or the hooks *R'*. For this purpose the cross-shaft *k* is cranked in the middle, so that when the cross-shaft *k* is rotated by the hand-lever *a* the cranked part of the cross-shaft raises the link-loop *n m*, as shown in Fig. 6. The cross-shaft *p* is provided at each side of the draw-hook *R* with arms *f*, the ends of which are connected with the loop *m* by chains *h*. By rotating the cross-shaft *p* the arms *f* will turn upward the loop *m* independently of the links *n*, so that the parts *m* and *n* of the coupling may form a more or less obtuse angle with each other. (See Fig. 6.)

In order to facilitate the raising of the link-loop *n m*, I prefer to arrange the bearings *q* of the cross-shaft *k* so that the central line of this cross-shaft and that of the pivot-bolt *v* lie in one straight line. (See coupling mechanism of the vehicle at the right hand of Figs. 1 and 3.) By this disposition I obviate the sliding and frictional motion between the cranked part of the cross-shaft *k* and the links *n* which takes place when the cross-shaft *k* is placed above or below the pivot-bolt *v*. (See left-hand coupling, Figs. 1 and 2.) To provide sufficient space for the buffers, the cross-shaft must be cranked conveniently on each side. For obtaining a more favorable transmission of movement I also arrange the cross-shaft *p* not above the cross-shaft *k*, but behind and in equal height with the latter, Figs. 1, 4, and 7. In this case the cross-shaft *p* is to be cranked three times, Figs. 2 and 3. The double-armed levers *a*, actuating the cross-shaft *k*, are pivoted to the shaft *p*, or in case the latter is arranged behind the cross-shaft *k* they may be pivoted to particular axle-arms or pivot-bolts *r*, Figs. 1, 5, and 7. The motion of the hand-lever *a* is now transmitted to the cross-shaft *k* by means of connecting-rods *c* and a bent lever *d*, firmly attached to the cross-shaft *k*. The rotation of the cross-shaft *p* is effected by hand-levers *b*, fixed upon the cross-shafts *p*.

The distension of the coupling is effected by means of the following contrivance: The ends *u u* of the draw-bar *w*, interrupted for this purpose near the front of the platform, are provided with right and left hand screw-threads adapted to engage a stretching screw-

nut *i*, sliding by means of groove-and-tongue connections in the nave of a conical wheel *o*. By turning this wheel in one or the other direction the screw-threaded ends *u u* of the draw-bar *w* will be caused to approach or recede from each other, thus loosening or stretching the coupling.

The rotating of the conical wheel *o* is effected by means of bevel-wheels *y*, actuated by handles *z*. Supposing two vehicles in state of rest and in contact with their buffers are to be coupled, first one of the draw-hooks *R*, (*i. e.*, the draw-hook of the left-hand car, Figs. 1 and 5,) with the coupling mechanism suspended thereon, must be pushed a little forward by rotating the handle *z*, so that the opposite loop *m* can reach the said draw-hook *R*. Then I raise, by pressing down the hand-lever *a* by means of the cross-shaft *k*, the link-loop *n m* and turn up the loop *m* a little by drawing back the lever *b*. By this operation the total length of the link-loop *n m* may be shortened so far that the coupling can pass upward in front of the left draw-hook *R*. The coupling mechanism is thus brought from its original position, Fig. 4, into the raised position necessary for coupling, Fig. 6. After the loop *m* has passed the draw-hook *R* I release the hand-lever *b*, when the loop *m* will return by its own weight into the straight position shown by dotted lines, Fig. 6, in which it is held by suitable stops. The link-loop *n m* is now free to fall onto the left draw-hook *R*. By next releasing the hand-lever *a* the loop *m*, guided by the flaps *s*, falls onto the hook *R* and slips past it. To stretch the coupling thus produced and to prevent accidental uncoupling, the handle *z* must be rotated a few times in the respective directions, Fig. 1.

When two vehicles come together—*i. e.*, when one vehicle is at rest and the other in motion—and the coupling of these vehicles is to be effected, the link-loop *n m* of the vehicle at rest must previously be brought into the raised and straight position, Fig. 6. If necessary, also, the coupling mechanism—*viz.*, the draw-hook—is to be pushed forward by actuating the bevel-gear *y o* by means of the handle *z*. At the moment the buffer-heads of the cars touch each other the hand-lever *a* is released. The link-loop *n m*, no longer supported by the cross-shaft *k*, falls down immediately and the loop *m* enters the hook *R*,

thus coupling the vehicles. The stretching is effected in the same manner as stated above. As the link-loop *n m* is raised for entering the opposite draw-hook the tappets or pins *e*, projecting from the upper ends of the links *n*, strike against the under side of the bifurcated link *n'* and raise this link, carrying the inversed hook *R'* on its pivot into the position shown in Fig. 6. After the loop *m* has entered the draw-hook the link *n'* and hook *R'* therefore do not hang vertically, but they are held by the pins *e* in the raised position shown at the right side of Fig. 1. It is on account of this peculiar position of the hook *R'* that the opposite loop *m* can engage the said hook *R'* to produce an auxiliary coupling.

For engaging the left-hand loop *m* with the right-hand hook *R'* the left link-loop *n m* is raised by means of the cross-shaft *k* from the position 1 (shown in dotted lines, Fig. 1) into the position 2, (shown also in dotted lines,) whereby the outer edge of the loop *m* will push back the hoop *l*. By now drawing back the loop *m* and lowering the links *n* the loop *m* slips into the hook *R'*, where it is secured by the hoop *l*, Fig. 1.

Uncoupling of the auxiliary coupling is effected by raising the link-loop *n m* by means of the cross-shaft *k* into the position 2, Fig. 1, so that when the cross-shaft *k* is released the said link-loop *n m* may fall back into the position 1, Fig. 1. The uncoupling of the main coupling is effected by executing the operations necessary for coupling and previously described in an inversed order.

What I claim is—

1. In a railway-coupling, the combination of a pivoted link *n* with actuating cranked cross-shaft *k*, a pivoted loop *m*, actuating cross-shaft *p*, arms *f*, and chains *h*, substantially as specified.

2. In a railway-coupling, the combination of a pivoted link *n*, having studs *e*, with actuating cross-shaft *k*, a pivoted loop *m*, actuating cross-shaft *p*, arms *f*, chains *h*, and with a pivoted hook *R'*, having guide-flaps *s*, substantially as specified.

Signed at Breslau, in Silesia, Kingdom of Prussia, Empire of Germany, this 25th day of March, 1892.

ROBERT KLEINERT.

Witnesses:

MAXIMILIAN BAUM,  
HELENE CZERWENKA.