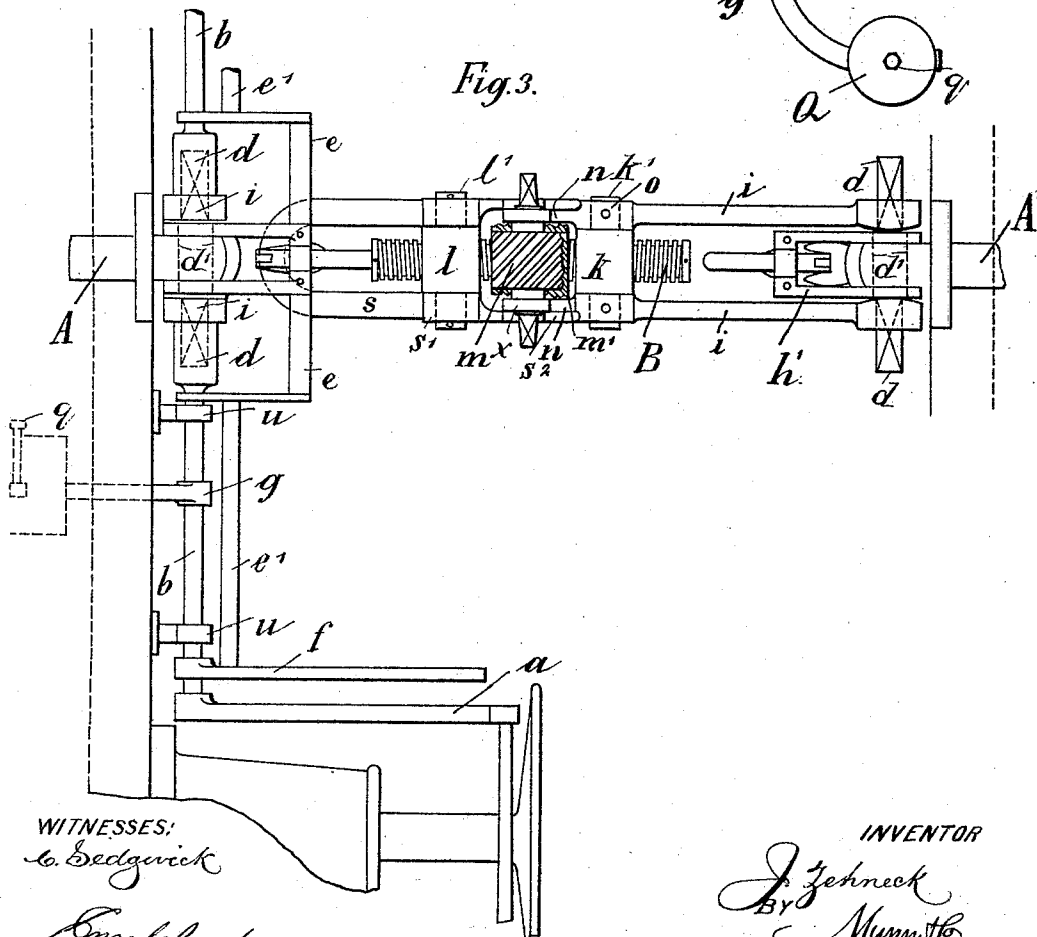
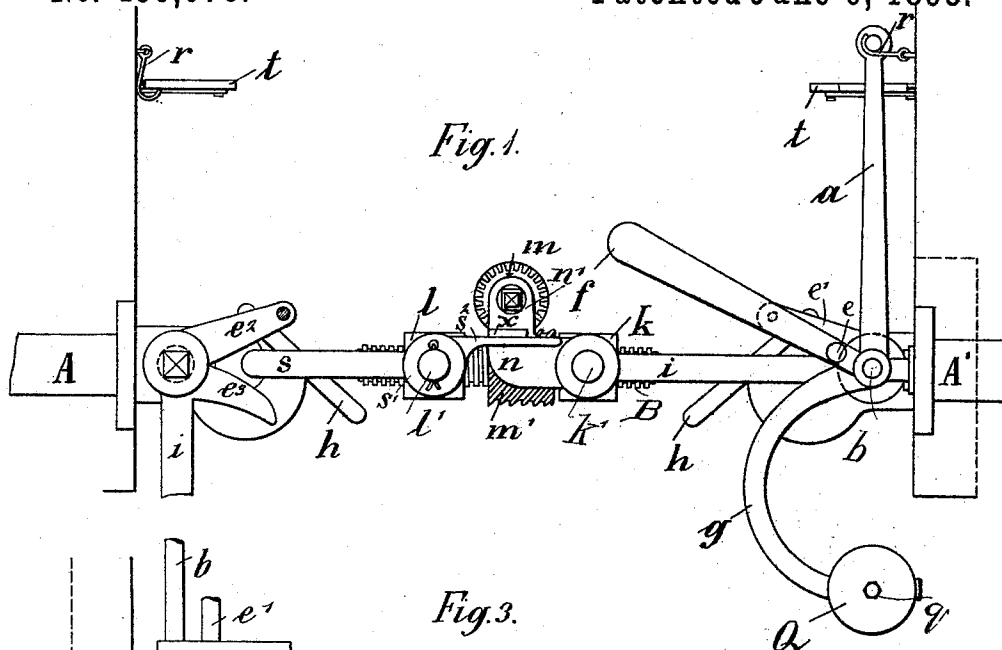


J. ZEHNECK.
CAR COUPLING.

No. 499,078.

Patented June 6, 1893.



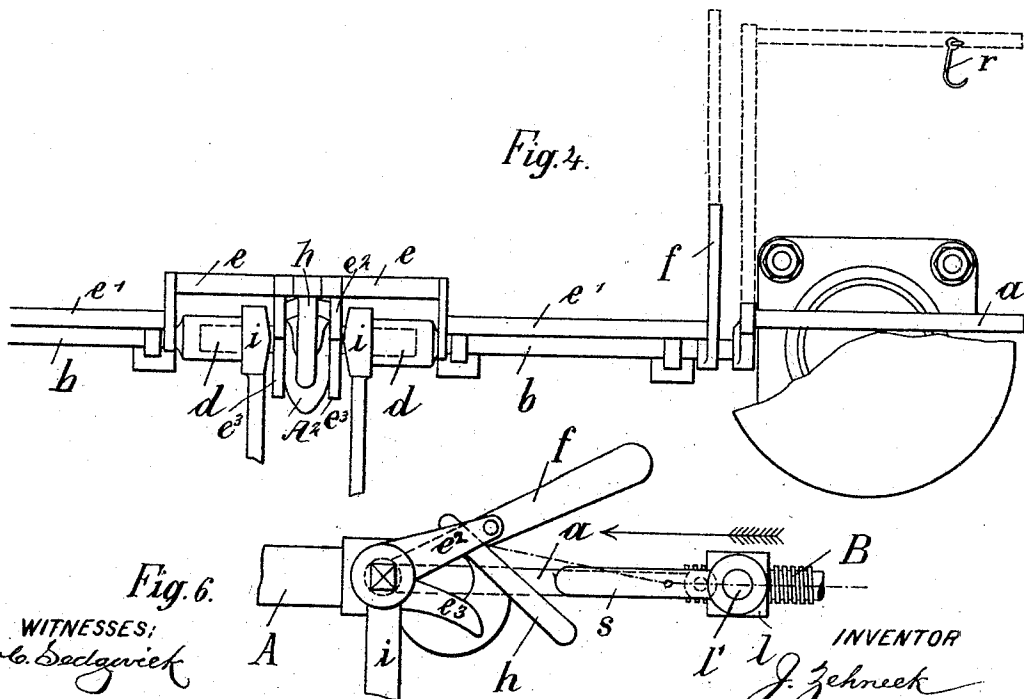
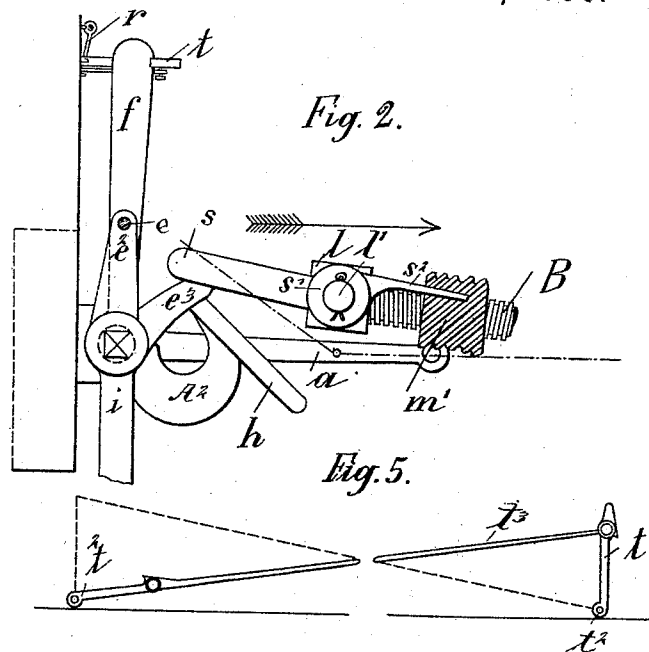
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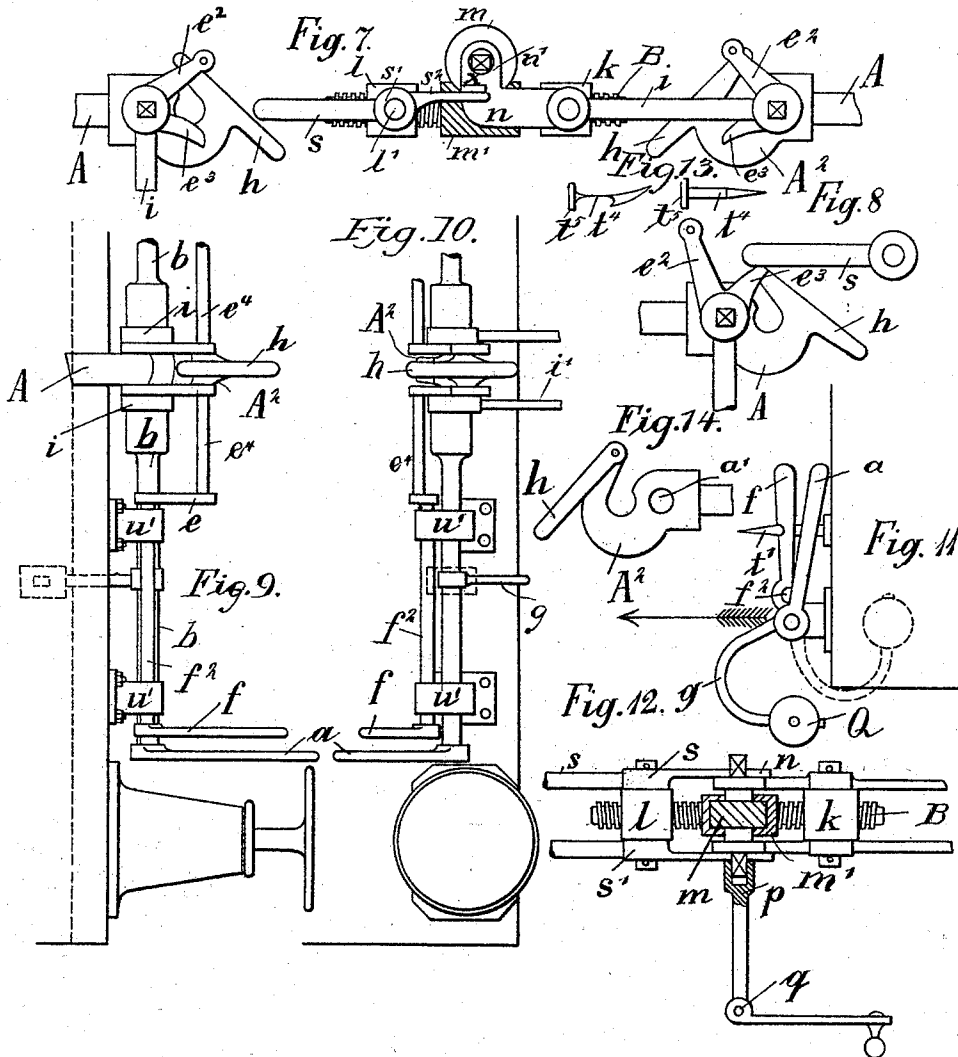
(No Model.)

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UNITED STATES PATENT OFFICE.

JOSEPH ZEHNECK, OF MAGDEBURG, GERMANY.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 499,078, dated June 6, 1893.

Application filed February 2, 1893. Serial No. 460,815. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH ZEHNECK, of Magdeburg-Buckau, Prussia, Germany, have invented new and useful Improvements in Automatic Couplings for Railway-Carriages, of which the following is a full, clear, and exact description.

The improvements are especially adapted to the form of car coupling employed on the German state railways.

The invention consists in the novel construction hereinafter described and claimed.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation showing the hooked drawheads on two coupled cars; the yoke, the coupling link, and the adjusting devices being supported from one car and engaging the hooked drawhead of the opposite car. Fig. 2 is a detail side elevation showing the position of a link of one car and the devices of an opposing car in position when about to be uncoupled. Fig. 3 is a plan view. Fig. 4 is an end view, of the attachments on one car, arranged to engage a link carried by an opposing car. Fig. 5 is a plan view of certain hooks for engaging the operating levers or arms on the shaft carrying the coupling link. Fig. 6 is a detail side view showing the link of one car, and the devices of an opposing car, when about to be coupled. Fig. 7 is a side view of the coupling, when about to couple, the operating levers being omitted. Fig. 8 is a side view of the detached link on one car on the point of engaging the drawhead of an opposing car. Fig. 9 is a plan view illustrating a slight modification. Fig. 10 is a front end view of the devices shown in Fig. 9. Fig. 11 is a side view of the operating levers, for coupling and uncoupling, and showing also a counterbalance shaft on which one of such levers is mounted, the levers being on separate shafts as in Figs. 9 and 10. Fig. 12 is a plan view of the tension or adjusting devices, for taking up slack, and showing also the detachable crank for operating the same. Fig. 13 shows in plan and in side view, a modification of the lever catch; and Fig. 14 is a side view of the front portion of the drawhead.

In constructing my improved coupling, drawheads A, A', are provided having hooked outer ends A², and inclines *h* on the front of such hooks.

Mounted on the front of each car in brackets *u*, is a rock shaft *b*, secured to the ends *d* of the central connecting shaft *d'*, mounted in the drawhead A, or A', the drawheads being apertured as at *a'*, Fig. 14, for the purpose. The central shaft *d'* carries the yoke *i* which is adapted to receive and support the coupling link or yoke *s*, which link is not continuous as in the ordinary link and pin coupling, but terminates at its inner end in arms, which are enlarged as at *s'*, and transversely apertured. The connection of the link to the yoke *i*, is as follows:—A block *k*, is swiveled by its trunnions *k'* in the side arms of the yoke *i* to rock vertically, and in a threaded bore formed in said block is screwed one end of a screw B, the other end of which has a threaded engagement with a similar block *l*, to the trunnions *l'* of which, the enlarged ends *s'* of the arms of the link *s*, are pivoted. The outer ends *n* of the side arms of the yoke *i* terminate in upward extensions *n'*, in which is journaled a worm or worm wheel *m*, in mesh with a worm wheel or worm *m'*, fixed on screw B, whereby the turning of the worm or worm wheel *m*, by a removable crank handle *p*, as in Fig. 12, will shorten or lengthen the distance between the blocks *k* and *l*, and consequently control the reach of the link *s*. The arm *p* is preferably jointed as at *q*, for convenience in carrying it. On the sides of the extensions *n*, projections *x* are formed, and such projections are engaged by the rearwardly projected ends *s²* of the link *s*.

The shaft *b* for rocking the shaft *d* and controlling the yoke *i*, is provided at one end with a crank handle *a* fixed at right angles to the yoke *i*, whereby when the said crank handle is raised to the position shown in Fig. 1, the adjacent yoke *i* will be horizontal as shown, the links *s* carried thereby being in position for coupling to a hook A² of an opposing drawhead. When the crank arm *a* is in the lowered horizontal position the yoke *i* will be lowered to the vertical position as at the left of Figs. 1, 3, and 7, and in Figs. 2, 4, 6, 9, and 10. On the shaft *b*, also, in the

form shown in Figs. 1 to 4, a lever or handle f , is mounted to turn loosely, and as best seen in Fig. 3, this lever f , is connected with a frame e , by a connecting bar e' , so that the throwing of the lever will raise or lower the frame e . The frame e comprises arms e^2 , and below the said arms, the frame carries arms or cams e^3 the position of the arms e^2, e^3 , being such that the arms e^2 lie on top of or over the links s , of an opposing car, while the arms or cams e^3 which lie below said link will serve to lift the latter out of engagement with the drawhead in uncoupling. In Figs. 1, 2, 3, 4 and 5, the hook t , is pivoted at one end t^2 (Fig. 5), and near its outer hooked end a lever t^3 is pivoted for moving the hook in engaging and disengaging the hook from the arm a . The hook t' shown in connection with Fig. 11, is separately shown in Fig. 13, and is formed with a spring shank t^4 , and is secured by its flange t^5 .

In the form shown in Figs. 9 and 10, the lever f , is secured to a separate shaft f^2 , journaled in brackets u' . In this form the shafts f^2 carry a separate frame e^4 at each side of the drawhead, the said frames being otherwise the same as the frames e , previously described. A hook r on the car holds the lever f , raised.

In coupling, when two cars approach, the link s will strike the incline h , of an opposing drawhead and rise thereon, and strike and raise the frame arms e^2 , and hook over the end of the drawhead. By throwing the lever

f upward, the cams e^3 will detach an opposing link s . After coupling, the slack between the cars is taken up by employing the crank handle f , to turn the worm m' .

On the shaft b , is a weighted arm g , Q representing the weight, the tendency of which is to throw the yoke i downward.

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

1. The combination in a car coupling, of a drawhead having a hooked outer end, and an incline on said hooked end, a rock shaft, a yoke thereon, a coupling link, a screw supported at one end in said yoke, a link threaded to the opposite end of said screw, and a worm mechanism for actuating said screw for adjusting the link, substantially as described.

2. The combination in a car coupling, of a drawhead having a hooked outer end, a rock shaft, a yoke on said rock shaft, a link pivotally connected with said yoke, means for throwing said shaft, a frame pivoted to rock vertically and having an operating lever, and arms carried by said frame and diverging from each other, and extending across the hooked end of the drawhead, at the sides thereof, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

JOSEPH ZEHNECK.

Witnesses:

ERNST KOHLE,
W. EGGELENG.