

(No Model.)

H. DEITZ.
CAR COUPLING.

No. 561,542.

Patented June 2, 1896.

Fig. 1.

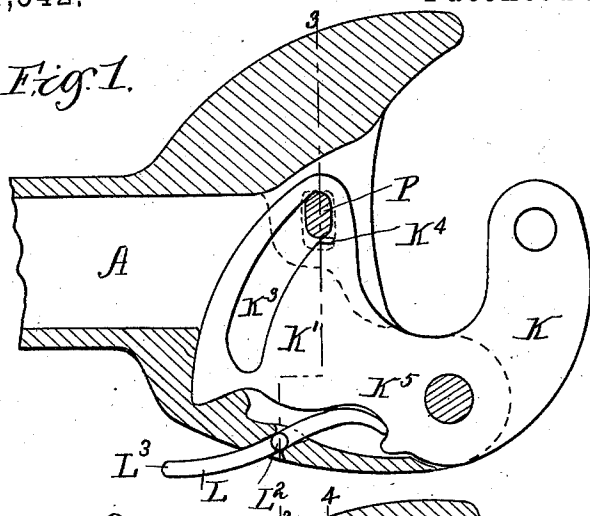


Fig. 2.

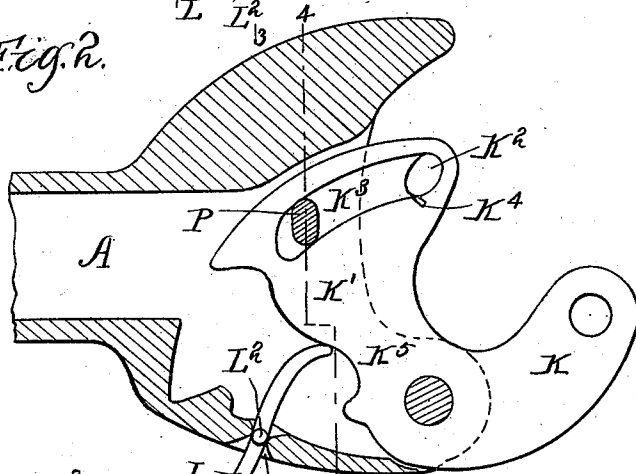


Fig. 3.

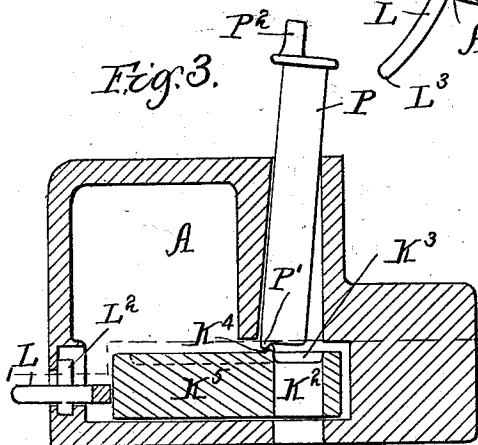
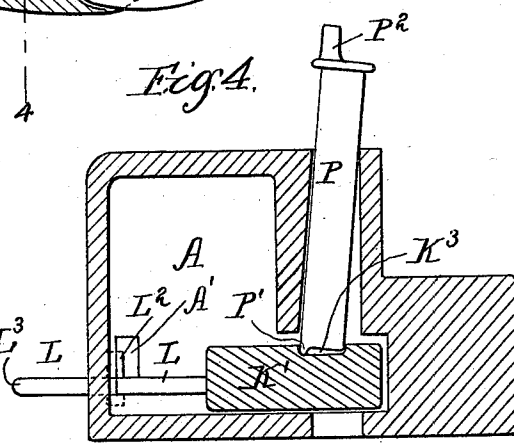


Fig. 4.



Witnesses
Wm. M. Rheem.
Wm. J. Hanning

Inventor:
Henry Deitz.
by W. E. Williams
Atty.

UNITED STATES PATENT OFFICE.

HENRY DEITZ, OF CHICAGO, ILLINOIS, ASSIGNOR TO J. ELLSWORTH GROSS, LUELJA ZEARING GROSS, JAMES H. ZEARING, AND LUCINDA HELMER ZEARING, OF COOK COUNTY, ILLINOIS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 561,542, dated June 2, 1896.

Application filed November 5, 1895. Serial No. 568,021. (No model.)

To all whom it may concern:

Be it known that I, HENRY DEITZ, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have
5 invented a new and useful Improvement in Car-Couplers, of which the following is a specification.

My invention relates to vertical-hook couplers of the Master Car-Builders' type; and its objects are to provide a coupler that needs
10 no attention beyond setting a certain pin in a given position when uncoupling is desired, the subsequent steps in uncoupling and in the next subsequent coupling being wholly
15 automatic; that may have its coupling-knuckle forced to open or to close by actuating a simple hand-lever; that may, when desired, be set to avoid automatic coupling, and that shall have unusually few and simple parts,
20 and shall be comparatively inexpensive to manufacture.

In the drawings, Figure 1 shows a section on the line 1 1, Fig. 3, the knuckle being in locked position. Fig. 2 is a like view showing the devices in their uncoupled positions.
25 Fig. 3 is a section on the line 3 3 of Fig. 1, the locking-pin being lifted. Fig. 4 is a section on the line 4 4, Fig. 2.

In the figures, A represents a draw-head, K a knuckle pivotally mounted thereon in the usual manner, and P a locking-pin adapted to work in a suitable vertical passage through the draw-head and a corresponding knuckle-perforation K², which registers with said passage when the knuckle is in coupled position.
35 Above the plane of the knuckle the passage is enlarged in such manner that the pin, when raised above said plane, may be inclined so that its end rests upon the knuckle at one side of the perforation K² when the knuckle
40 is in coupled position, as in Fig. 3. That the pin so placed may not accidentally slide back into vertical position and again drop into the perforation its lower end is adapted
45 to engage with the upper side of the knuckle, as shown, the engagement being by means of lugs P' K⁴ upon the pin and knuckle, respectively. Now it is evident that if the pin be so set while the knuckle is in its coupled position,
50 Fig. 1, the knuckle is free to swing open or to its uncoupled position, Fig. 2, and that as it thus swings it will slide beneath the

pin P. After the perforation K² has advanced slightly by such swinging it is immaterial whether or not the pin maintains its inclination, for it can then by no possibility enter
55 the perforation until a reverse movement of the knuckle occurs. The pin's possible inclination is limited by the walls of the passage, and whatever its inclination as the
60 knuckle swings open the pin sooner or later drops into a channel K³ in the upper face of the knuckle, extending from the perforation K² across all possible paths traced by the end
65 of the pin. When this happens, the pin is thereafter guided by the channel, and if, by meeting another similar coupler or otherwise, the knuckle is swung back to its coupled position the channel gradually lessens the
70 inclination of the pin and finally guides it into the perforation K², where it drops vertically, securely locking the knuckle in coupled position.

In uncoupling, the pin is raised by any suitable device and is caused to simultaneously
75 assume the proper inclination by having the raising devices attached at P² upon one side of its axial line. If, then, the pin be simply raised and then released when uncoupling is desired, the apparatus requires no further at-
80 tention until such future time as it is to be again uncoupled, perhaps from another car, for when the pin has been raised separation of the coupled cars completes the uncoupling and leaves the parts in position to couple au-
85 tomatically with any like open coupler.

It is sometimes desirable to prevent automatic coupling—as, for example, when cars are left upon a siding in position to be coupled by the careless shunting of other cars.
90 If, after uncoupling, the knuckle be swung again to coupled position, the pin locks it, and coupling is impossible until the pin is again lifted and the knuckle swung open. To aid in thus closing or opening the coupler for any
95 purpose, a lever L is detachably pivoted in the wall of the draw-head with its outer arm projecting therefrom and its other arm, L², extending into a recess K⁵ in the back of the knuckle. The pin P being set as above de-
100 scribed, when the outer arm L² of the lever is pulled outward the arm L², pressing the wall of the recess K⁵, forces the knuckle to swing open, the pin, meantime, sliding over the

knuckle and dropping into the channel K³, and when the arm L³ is pushed inward the other arm presses the opposite wall of the recess and forces the knuckle to swing to coupled position, the pin, meanwhile, traveling
5 along the channel and at the end of the movement falling vertically in the perforation K².

It is to be observed that this coupler has few parts, none of which require fitting or
10 machine-work, that it combines the advantages of automatic and non-automatic couplers, and that its movements are positive and independent of rust and ordinary accumulations of dirt.

15 What I claim is—

1. In a coupler of the class described, the combination with a suitable draw-head, of a knuckle pivoted thereto, and a loose, normally vertical pin locking the knuckle in coupled position; said draw-head being adapted
20 to allow inclining the partially withdrawn pin and resting it upon the knuckle, and said knuckle being provided with a channel intersecting the path traced by the pin upon the
25 opening knuckle and arranged to guide the pin to locking position as the knuckle returns to its coupled position.

2. In a coupler of the class described, the combination with a draw-head, of a knuckle
30 pivoted thereto, a knuckle-locking pin adapted for the application of raising force at one side of its axial line, and a lever pivoted to the draw-head and arranged to force the swinging of the knuckle; the pin-passage in
35 the draw-head being adapted for inclining the partially withdrawn pin and resting it upon the knuckle, and the latter being provided

with a channel to receive the pin as the knuckle opens and to guide it back to locking position as the knuckle closes. 40

3. The combination with a draw-head, of a knuckle pivoted thereto and provided with a vertical perforation for the passage of a locking-pin, a locking-pin, means for raising the latter and throwing its lower end out of line
45 with the knuckle-perforation, and means for preventing its accidental return to that line until it is freed by the opening of the knuckle.

4. The combination with the draw-head, of the knuckle pivoted thereto and provided
50 with a pin-receiving perforation, with a pin-guiding groove leading to said perforation, and with a projection at one side of the latter, a locking-pin, and means for raising the pin and throwing it laterally aside into en-
55 gagement with said projection, substantially as set forth.

5. The combination with a draw-head, of a knuckle pivoted therein and provided with a recess upon its outer side, an independent
60 locking-pin arranged to release the knuckle when raised, and a lever pivoted to the draw-head and projecting into said recess in position to force the knuckle to open or close, according as said lever is swung in one or the
65 other direction.

In witness whereof I have hereunto subscribed my name, on this 1st day of November, 1895, in the presence of two witnesses.

HENRY DEITZ.

Witnesses:

E. L. PINGREY,
E. J. KENT.