

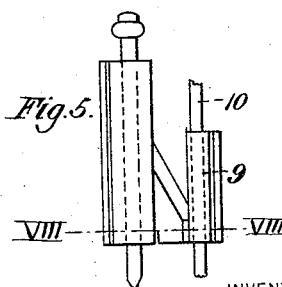
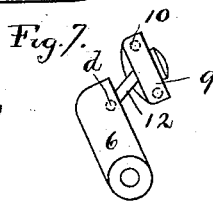
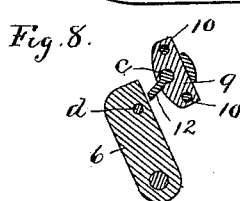
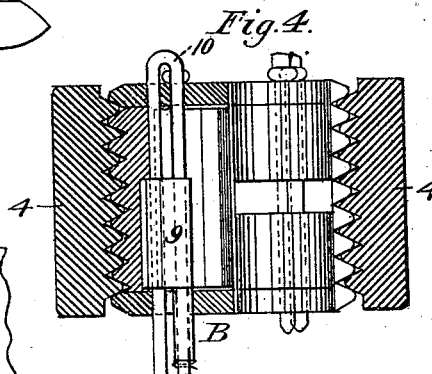
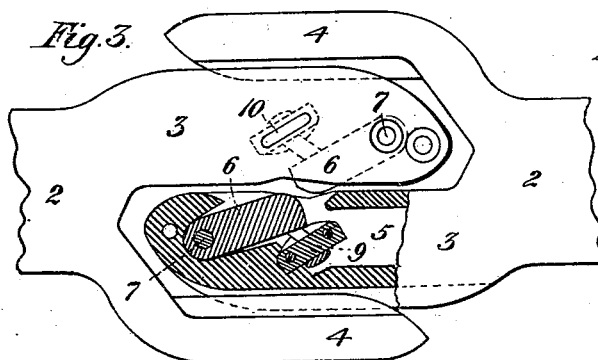
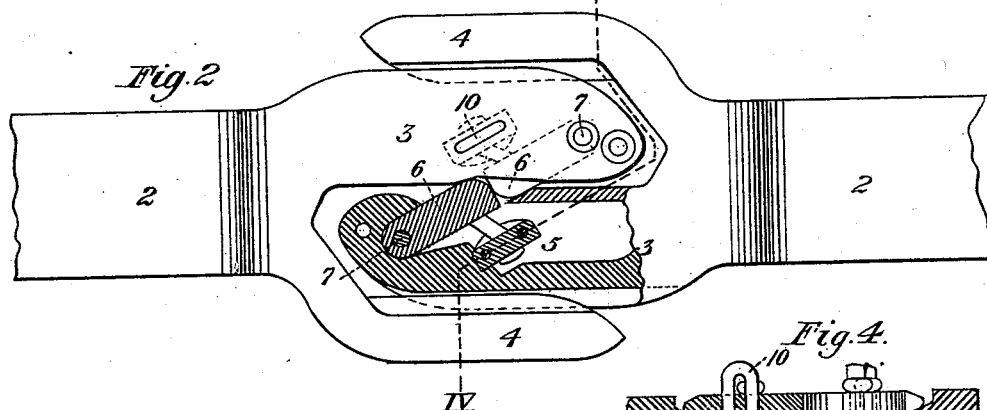
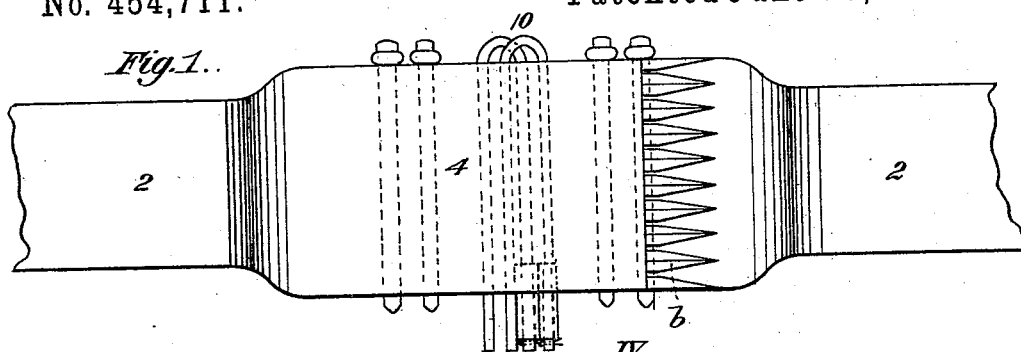
(No Model.)

C. M. CARNAHAN.

CAR COUPLING.

No. 454,711.

Patented June 23, 1891.



WITNESSES.

J. W. Randall

M. B. Conner

INVENTOR.

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# UNITED STATES PATENT OFFICE,

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ALPHRETTA CARNAHAN, OF SAME PLACE, JOSEPH S. YOUNG, OF  
ALLEGHENY, AND M. A. WOODWARD, OF PITTSBURG, PENNSYLVANIA,  
AND JOSEPH C. YOUNG.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 454,711, dated June 23, 1891.

Application filed August 11, 1890. Serial No. 361,710. (No model.)

*To all whom it may concern:*

Be it known that I, CYRUS M. CARNAHAN, of Coraopolis, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Car-Couplings, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 shows in side elevation two of my improved couplers coupled together. Fig. 2 is a plan view thereof, part of one of the couplers being shown in horizontal section. Fig. 3 is a view similar to Fig. 2, showing the couplers unlocked from each other. Fig. 4 is a vertical cross-section on the line IV IV of Fig. 2. Figs. 5 and 6 are detail views showing the pivoted tongue and the means for automatically moving the same. Figs. 7 and 8 are respectively a top plan view of Fig. 5 and a horizontal section on the line VIII VIII thereof.

Like symbols of reference indicate like parts in each.

In the several figures of the drawings there are illustrated two of my improved couplers A and B, each of which is supposed to be on a separate car. It will be understood, however, that my coupler is adapted to be used with couplers of other forms by means of a usual link-and-pin connection, as hereinafter explained.

I shall now proceed to describe the construction of one of the couplers, and then to describe the manner in which they are coupled and uncoupled. Each coupler has a shank or draw-bar 2 and a forked head comprising two separated and substantially parallel jaws 3 and 4, the jaw 3 being preferably somewhat longer than the jaw 4, and the base of the fork between these jaws being shaped to receive the abutting end of the longer jaw of the other coupler. 5 is a vertical recess formed on the inner side of the jaw 3, and 6 is a tongue, which is pivotally mounted at the front end of said recess and extends rearwardly therein. The recess is so shaped that the tongue is capable of radial motion on its

pivot only to the extent indicated in Fig. 2, and the pivot-pin 7, to which it is keyed, is so situated that the rear end of the tongue shall bear against the end of the recess, thus preventing the stress exerted on the tongue from being taken entirely by the pin and causing it to be exerted on the coupling-head. The tongue is provided with suitable weighting or spring mechanism, hereinafter described, which tends to project it laterally from its recess. The outer side of the jaw 3 and the inner side of the jaw 4 of each coupling-head are provided with longitudinal parallel grooves *b*. In the use of the coupling, when two cars provided therewith are brought together the jaw 3 of each coupling enters the space between the jaws of the other, and when the end of the tongue of one coupling has passed the tongues of the other the ends of the tongue are brought into engagement, so as to interlock the couplers in the manner shown in Fig. 2. When the coupling-heads are thus fitted together, the grooves *b* hold them from vertical motion, and as there is a series of such grooves this effect will be produced and the car may be coupled, even though the coupling on one car be higher than the coupling on the other. When the cars are coupled, the primary pressure coming on the ends of the tongues tends to move the heads somewhat laterally in opposite directions, so as to press the outer side of the jaw 3 of each coupling against the inner side of the jaw 4 of the other, thus transmitting a considerable amount of the force of traction directly to the coupling-head and relieving the tongues proportionally. This is a material feature of advantage of my invention.

In order to make it possible to couple a car provided with one of my improved couplers with another car using a link-and-pin coupling, I provide the end of the jaw 3 with a recess adapted to receive such link and with a pin-hole extending vertically through the coupling-head and through the recess. At the inner side of the tongue 6 of each coupling is a projecting wedge wing or plate 12, hinged to the tongue on a vertical pivot *d* and hav-

ing an inclined edge formed with a marginal bead *c*. 9 is a drop plate or block set back of the tongue and having a groove which fits around the bead of the wing. This drop plate or block is provided with an upright lifting-bar or yoke 10, which is set in the coupling-head, so as to be capable of being lifted in a right line. When it is lifted, the bar or yoke acts as a guide, and the passage of the grooved block along the bead of the wedge-wing will draw back the tongue, and when it is dropped it will in reverse manner project the tongue. The drop-block is made of sufficient gravity to effect this outward motion of the tongue without difficulty. The purpose of pivoting the wedge-wing is to prevent the parts from binding. The action of the parts is so easy that when the coupling-heads are brought together the lateral pressure on the tongues will automatically raise the drop-blocks to permit the tongues to be moved back.

In uncoupling the car all that is necessary is to raise the bar 10, thus moving the parts in the opposite direction from that by which they are movable by gravity and retracting the tongue into the position which it occupies in the coupling-head B, Fig. 3. The parts may be thus uncoupled by operating the mechanism of either of the couplers.

The advantages of my invention will be appreciated by those skilled in the art. The coupling is simple in construction, is very

strong and durable, and its ease and safety of operation render it desirable as a substitute for the dangerous link-and-pin coupling now in general use.

I claim—

1. In a car-coupling, the combination of a forked coupling-head and a tongue, the inner side of one jaw and the outer side of the other jaw being grooved, substantially as and for the purposes described.

2. In a car-coupling, the combination of a coupling-head, a pivoted laterally-movable tongue, and a drop-block back of the tongue and having a wedge action thereon, substantially as and for the purposes described.

3. In a car-coupling, the combination of a coupling-head, a pivoted laterally-movable tongue, a laterally-projecting inclined wing on the tongue, and a drop-block set on the wing, substantially as and for the purposes described.

4. In a car-coupling, the combination of a coupling-head, a pivoted laterally-movable tongue, a laterally-projecting inclined wing pivoted to the tongue, and a drop-block on the wing, substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand this 6th day of August, A. D. 1890.

CYRUS M. CARNAHAN.

Witnesses:

W. B. CORWIN,  
H. M. CORWIN.