

(No Model.)

W. S. CAMPBELL.
CAR COUPLING.

No. 497,626.

Patented May 16, 1893.

Fig. 1

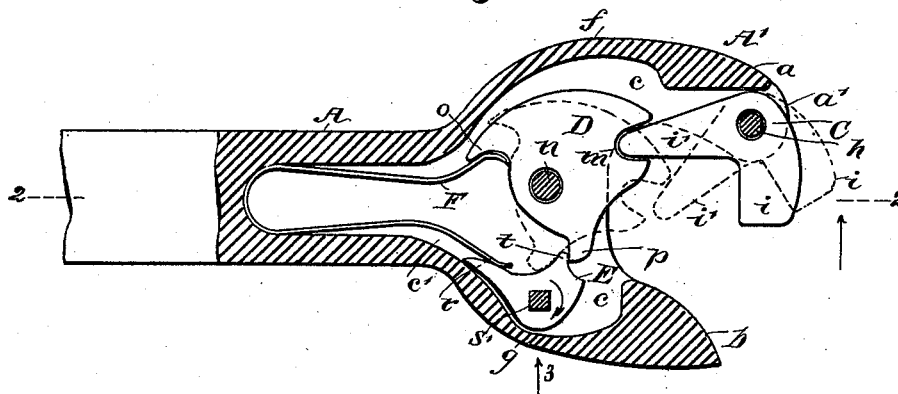


Fig. 2

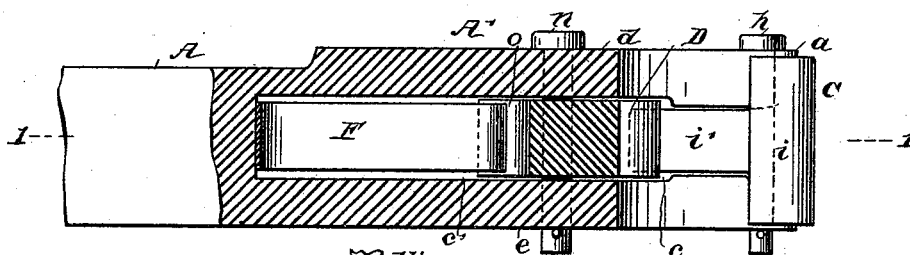
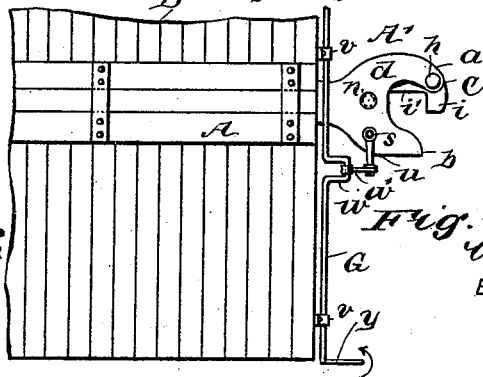
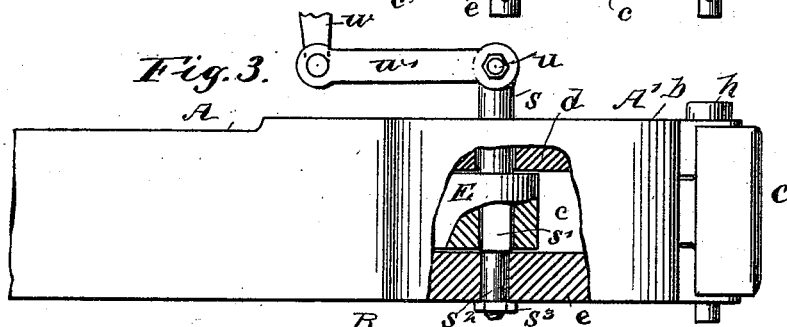


Fig. 3



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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 497,626, dated May 16, 1893.

Application filed March 6, 1893. Serial No. 464,741. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. CAMPBELL, of Hamer, in the county of Marion and State of South Carolina, have invented a new and useful Car-Coupling, of which the following is a full, clear, and exact description.

My invention relates to improvements in car couplings of the side latching type, known as the "Janney" coupling, and has for its objects to provide a novel coupling of the class indicated, which will be of simple and substantial construction, will couple automatically with another of its class, be adapted for release from coupled condition by manipulation of attachments from either side of a car, and that will uncouple automatically if the coupling drawhead becomes loosened in its connections to the car whereon it is placed.

To these ends, my invention consists in the construction and combination of parts, as is 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 plan view partly in section on the line 1—1 in Fig. 2, of the front portion of the improved car coupling. Fig. 2 is a side view, partly in section on the line 2—2 in Fig. 1. Fig. 3 is a side view of the improvement, having its side wall partly broken away, and viewed opposite the arrow 3 in Fig. 1; and Fig. 4 is a partial reverse plan view of the front portion of a car and the improvement in position thereon.

The drawhead A, A', is preferably cast into form from iron or other suitable metal, and at its rear the body part A, is rectangular in cross section, and provided with any preferred means for its secured attachment upon the car body B, which is so effected that the front part A', of the drawhead will be properly projected beyond the end wall of the car body as usual, to adapt the coupling for an engagement with another device of its class.

The portion A', of the drawhead body, which as above stated is extended in advance of the car B when the improvement is secured thereto, is widened sufficiently to suit its service, and curved outwardly and forwardly on the sides, as represented in Figs. 1 and 4, the top and bottom surfaces being parallel.

At the front of the part A', the drawhead is cut away rearwardly, so as to produce an entering throat for the latch block of another similar coupling, the shape of the margin left by the cut producing two horns a, b on the sides of the drawhead, and from these horns a cavity c, extends within the part A', having a shape on each side that nearly conforms with the exterior surfaces of the sides of said part, the relative dimensions of the cavity which is further defined by parallel top and bottom surfaces, being such as to produce a top wall d, and bottom wall e and also the curved side walls f, g, as shown in Fig. 1. From the cavity c, a spring box c', is rearwardly extended into the rectangular elongation A of the drawhead and conforming substantially in form therewith, as represented in Figs. 1 and 2.

A base flange a', is formed on the inner side of the horn a, that is in effect a forward extension of the bottom wall of the cavity c, this flange being of a suitable breadth and contour on its free edge to render it available as a seat and substantial support for the latch block C, that is pivoted thereon by the stout fulcrum bolt h.

The block C, is furnished with a lateral jaw i, and a rearwardly extended limb i', that is preferably tapered rearwardly toward its inner end, so as to permit it to engage with another part, as will be presently explained, the free rear end of the limb being rounded to facilitate said engagement of parts.

The lower wall of the front portion A', of the drawhead is scalloped on the forward edge, to afford a clear space of proper width, between the inner edge of the flange a' and the inner wall of the horn b, the latter being curved inwardly a proper degree and tapered toward its point, so as to afford required strength, and clearance for the latch block such as C, that is a part of another car coupling.

Within the cavity c, of the drawhead a tumbler block D is pivoted near its center of width, said block having its top and bottom surfaces parallel, and of such a relative thickness, as will permit it to loosely swing within the portion A' of the drawhead.

The tumbler block D, has its side wall that is nearest the side f of the drawhead, curved outwardly, and is of such dimensions as will

permit a curve-bottomed slot *m*, to be formed in its forwardly projected portion, of a depth and shape which will adapt it to receive and loosely embrace the free end of the limb *i'* of the latch block C, so as to produce a toggle joint connection between the latch block and tumbler block.

The pivot bolt *n*, of the tumbler block D, is inserted in a perforation which extends vertically through, the top and bottom walls of the front portion of the drawhead at a suitable distance from the incurved front edges of said walls, and near the transverse center of said part A', and loosely engages the vertical perforations in the tumbler block made to receive said bolt.

On the rear wall of the tumbler block D, a lip *o*, is formed, such lip being produced along the curved side of the block, and from the side surface of said block that is nearest to the side wall *g* of the portion A' of the drawhead, a toe *p*, is projected the uses of which will be hereinafter explained. A sufficient space is afforded between the side wall *g* and the toe *p*, for the accommodation of a locking dog E, which is located between the top and bottom walls of the drawhead, and occupies this space.

The dog E, is of an equal thickness to that of the tumbler block D, and has an ovate curved side located nearest the concave inner surface of the side wall *g* of the drawhead, the rear end of the locking dog being prolonged to provide a lip *r* thereon.

A square hole is formed vertically through the dog E, near the center of its heavier forward part, for the reception of the squared portion *s'*, of the tripping bolt *s*, that is cylindrical above and below said squared portion. The part of said bolt *s*, that passes through and neatly fits a hole in the top wall *d* of the drawhead, is equal in diameter to the square part *s'*, across its corners and the lower portion *s''*, of the tripping bolt which has a reduced diameter, is inserted loosely through an aligning hole in the wall *e*, of the drawhead, and projects below said wall to receive a nut *s''*, on its lower threaded end, whereby the bolt is retained from accidental displacement.

There is a toe *t*, formed on the inner side of the locking dog E, at a proper distance in advance of the bolt *s*, which toe is caused to interlock with the toe *p*, of the latch block C, when the latter is in locked adjustment, as shown by full lines in Fig. 1, the toe *p* sliding past the toe *t*, on its inner surface when the parts are in uncoupled condition.

A looped plate-spring F, is located in the elongated chamber or box *c'*, the ends of which spring are bent to adapt them to have a sliding engagement with the lips *o* and *r*, causing the normally compressed members of the spring to press these lips apart and throw the tumbler block D, and locking dog E, into the positions indicated by full lines in Fig. 1.

The upper portion of the tripping bolt *s*, is

sufficiently extended above the top wall *d* of the drawhead, to adapt it for coaction with other parts provided to move said bolt, when the car coupling is to be detached from another of its class.

On the upper terminal of the bolt *s*, an arm *u*, is affixed by one end, so as to project toward the side of the car, said arm being relatively secured so that it will lie in a horizontal plane, parallel with the end wall of the car body, when the latch block C, is in a coupled and locked condition.

There is a rock shaft G, provided for the manipulation of the tripping bolt *s*, which shaft is horizontally and rotatably sustained on the end wall of the car body B, by the clip boxes *v*. The rock shaft G, has a double crank *w*, formed on it at a point opposite the outer end of the arm *u*, and a link *w'*, is loosely jointed at one end to the double crank, its other end having a rocking connection with the outer end of the arm *u*, as indicated in Fig. 4.

On the ends of the rock shaft G, that extend to the sides of the car body B, levers such as *y*, are formed or secured, so as to project at a right angle therefrom and incline downwardly, whereby their weight will assist to retain the arm *u*, parallel with the end wall of the car and hold the parts of the coupling in the locked condition shown by full lines in Fig. 1.

In operation, it will be seen that the lip *r*, of the locking dog E, will be driven into contact with the side wall *g* of the drawhead, when the parts of the improved coupling are in a coupled condition, the engagement of the lips *t* and *p*, serving to prevent a swinging movement of the latch block C, toward the side wall *f* of the drawhead, which is necessary to release the interlocked connection of the jaw *i*, from another latch block of a like form; the rotatable movement of the dog in the direction of the curved arrow in Fig. 1, permitting the outer curved side of the toe *p*, to slide on the incurved surface of the locking dog E, thereby throwing the limb *i'*, toward the horn *b*, and swinging the latch block, as shown in dotted lines in Fig. 1.

When two cars having the improved couplings are in a coupled condition, and it is desired to release the cars from each other, the lever *y*, on either side of one of the coupled cars is raised upwardly or in the direction of the curved arrow in Fig. 4, which will draw the arm *u*, toward the end wall of the car and rotatably move the tripping bolt in the direction indicated by the curved arrow in Fig. 1, so as to swing the toe *t* on the dog E, away from the toe *p*, on the tumbler block D, thereby releasing the latter, which by the expansion of the spring F, will be thrown into the position indicated by dotted lines in Fig. 1, swinging the limb *i'* and jaw *i* of the latch block C, into the position shown also by dotted lines in said figure, which will allow the similar latch block that had been in locked con-

nection therewith to be drawn away from the coupling, in an obvious manner.

It is claimed for this improved coupling, that its parts are always in position for a
5 coupled engagement with another coupling of the same construction, that it will couple automatically, and in case the attachment of the drawhead A, A', to the car frame, should become accidentally released, the outward
10 draft of the coupled drawhead will swing the arm *u*, and cause the latch block C, to be released, and thereby prevent the coupling from being dragged on the track and possibly fall thereon, to the injury of the other cars of the
15 train.

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

1. The combination, with a car and a draw-
20 head secured thereto and laterally enlarged at its front, and interiorly chambered, of a latch block pivoted in the front enlargement of the drawhead, and having a lateral jaw and a rearwardly extending limb, a tumbler block
25 pivoted in the chamber of the drawhead and loosely engaging the rearwardly extending limb of the latch block, a locking dog pivoted in said chamber and having a lip interlocking with a lip on the tumbler block, a looped
30 plate spring in the drawhead, bearing on the tumbler block and locking dog, and means for turning said dog, substantially as described.

2. The combination, with a car, and a draw-
head secured thereto, and laterally enlarged at its front, and formed with an interior cham- 35
ber extending rearwardly from said enlargement, horns projecting forwardly at the front of the drawhead, and a latch block pivoted on a flange extending inwardly from one of
40 said horns, and having a lateral jaw and a rearwardly extending limb, of a tumbler block pivoted in the chamber of the drawhead, having a notch at its front, loosely engaged by the end of the rearwardly extending limb of
45 the latch block, a laterally extending toe on said tumbler block, a tripping bolt pivoted in the drawhead at one side of the tumbler block, and having the central portion of its body squared, a locking dog secured on said
50 bolt, a toe on said dog engaging the toe on the tumbler block, a looped plate-spring bearing on the rear of the tumbler block and locking dog, an arm projecting laterally from the upper end of the tripping bolt, and a trans-
55 verse shaft pivoted on the end of the car, and having end handles and central cranks, and a link connecting the cranks on said shaft with the arm on the tripping bolt, substantially as described.

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Witnesses:

W. W. NORMAN,
J. A. MCEACHERN.