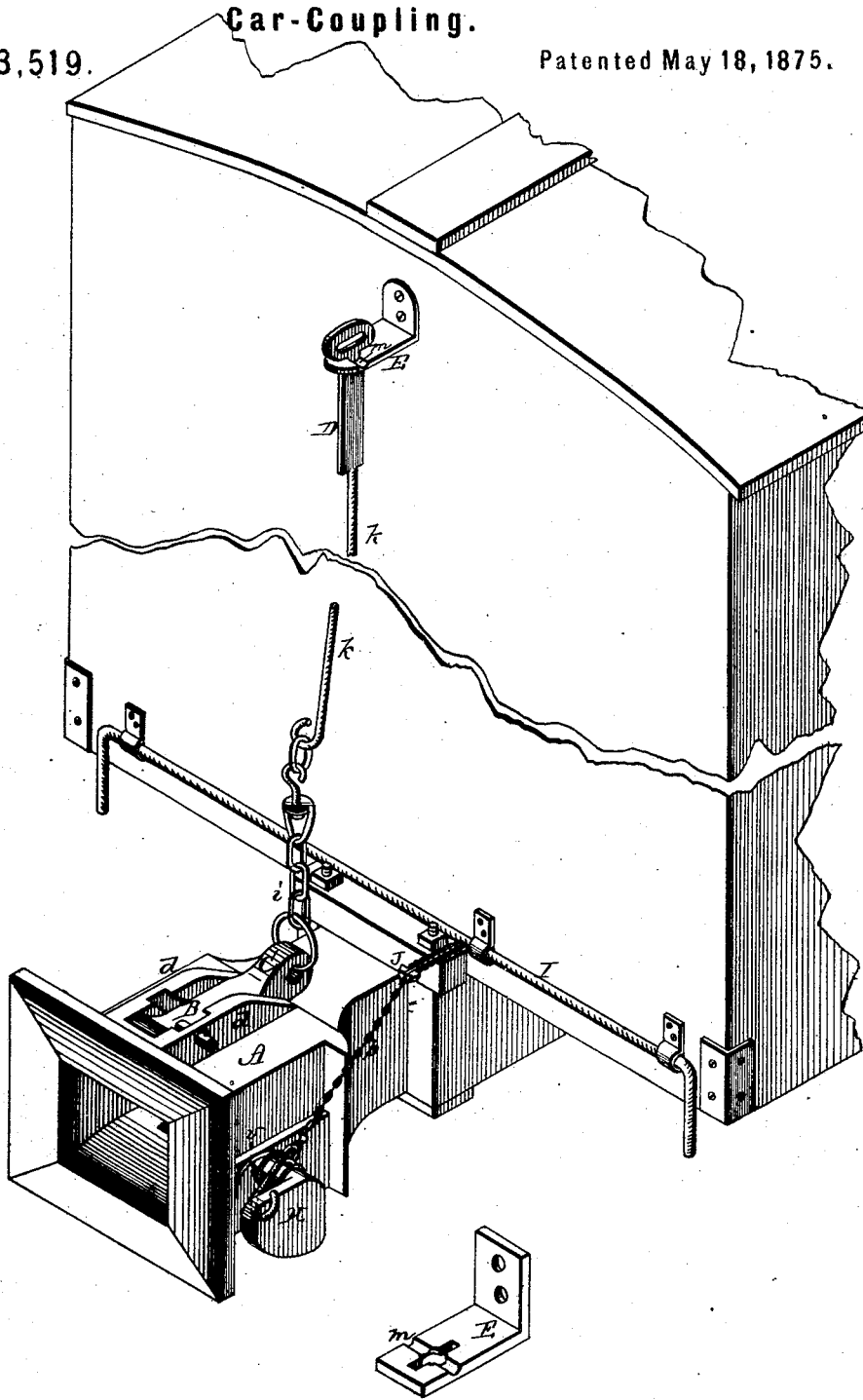


W. V. PERRY.
Car-Coupling.

No. 163,519.

Patented May 18, 1875.

Fig 1



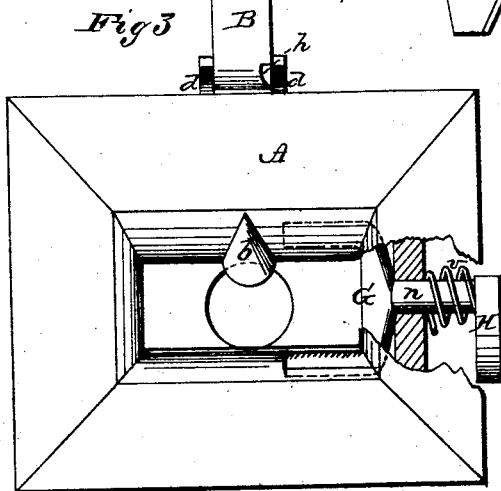
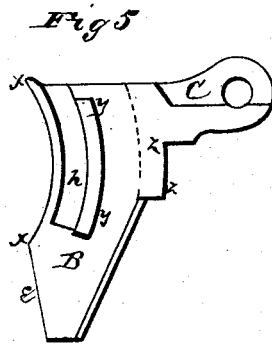
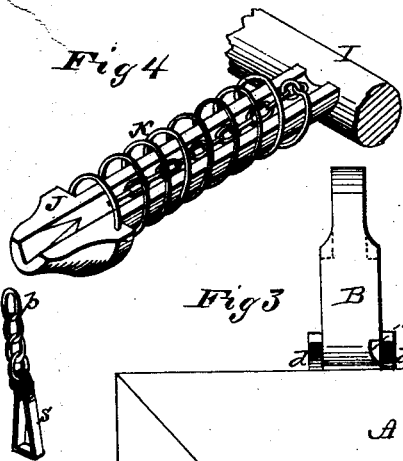
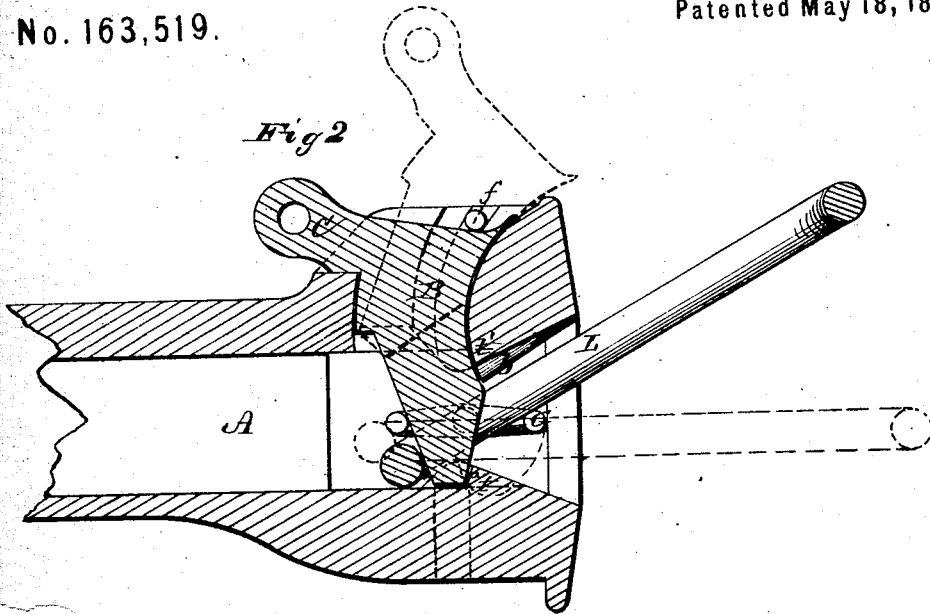
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IMPROVEMENT IN CAR-COUPPLINGS.

Specification forming part of Letters Patent No. 163,519, dated May 18, 1875; application filed
May 6, 1875.

To all whom it may concern:

Be it known that I, WILLIAM V. PERRY, of Beaver Dam, in the county of Dodge and in the State of Wisconsin, have invented certain new and useful Improvements in Car-Couplers; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of a car-coupling, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a perspective view of my car-coupling as attached to an ordinary box-car. Fig. 2 is a longitudinal section; Fig. 3, a front view of the same. Fig. 4 is a perspective view of a detailed portion of the link-raising device. Fig. 5 is a side view of the coupling-pin.

A represents the draw-head, constructed in the ordinary form, and attached to the car-frame in any of the known or usual ways. Immediately back of the mouth of the draw-head, in the center of the bottom thereof, is made a small groove or recess, forming a shoulder, *a*, for the lower end of the coupling-pin to butt against. In the center, at the top of the mouth of the draw-head, is formed a bead, *b*, tapering both in width and thickness, as shown, it being largest at the rear or inner end, and running to a point at the front end. This bead is for the purpose of guiding the coupling-link in entering the draw-head, so as to strike the proper part of the coupling-pin, and still leave room enough on each side thereof to allow any necessary movement of the link, as hereinafter described, and also reduce the strain on the pin. In the top of the draw-head is a slot for the passage of the coupling-pin B, and on each side of said slot, on the top of the draw-head, is formed a flange, *d*. The coupling-pin is constructed as shown in Fig. 5, the front edge being formed

with a curve, *x x*, extending from the top downward for a suitable distance. On each side of the coupling-pin is formed a curved shoulder, *y y*, and on the back edge is also formed a curve, *z z*. Above this latter curve the pin is formed with a projecting arm, C. Below the front and rear curves the body of the pin tapers, as shown, the lower end being formed so as to enter the groove or recess back of the shoulder *a*, and rest against said shoulder. The three curves *x*, *y*, and *z* are all made from the same center, concentric with each other, and the ends of the slot in the draw-head, through which the pin passes, are curved in a corresponding manner. The curved shoulders *y* of the coupling-pin may be formed by means of flanges cast on the pin, or simply by reducing the thickness of the rear portion thereof, as shown by dotted lines in Figs. 3 and 5. The coupling-pin B being in position in the draw-head, when the link enters it strikes the straight edge *e* thereof below the front curve *x x*, and as the three curves *x*, *y*, and *z* are concentric, the pin will move upward and forward on a circle, and allow the link to pass under its lower end; and as soon as the link has passed by the same, the pin falls down of its own weight. To prevent the coupling-pin from coming out on top, a pin, *f*, is passed through one of the flanges *d* into a curved groove, *h*, in the side of the coupling-pin. The end of the arm C is, by a chain, *i*, connected with a rod, *k*, the upper end of which forms, or is attached to, a flat bar, D, with handle at its upper end, which bar passes through a slot in a plate, E, attached to and projecting from the end of the car. In the top of the plate E, across the slot therein, is formed a groove or recess, *m*. By this device the cars may be uncoupled from the top, and when the bar D has been raised above the plate E, it may be turned so as to rest its lower end in the groove or recess *m*, and thus hold the coupling-pin in an elevated position. A lever or rod with suitable arms may be arranged on the end of the car, and connected with the chain *i*, so as to uncouple from either side of the car as well as from the top.

In one side of the draw-head A, at the inner end of the mouth, is inserted a short shaft,

n, upon the inner end of which is attached a fork, *G*, and on the outer end is attached an arm, *H*, as shown. Along the front of the car, near the lower end, in suitable bearings, is placed a shaft, *I*, having a crank or handle at each end. From this shaft projects a grooved arm, *J*, around which is placed a spiral spring, *K*. The outer end of this spring is fastened to the arm, while to its inner end is attached a chain, *p*, which passes through the spring and lies in the groove on the arm. To the end of the chain *p* is attached a spring or snap hook, *s*, which fastens in the arm *H* on the shaft *n*. When the coupling-link *L* is in the draw-head, one side thereof is between the two prongs of the fork *G*. By turning the shaft *I* so as to raise the arm *J*, the shaft *n* will be turned by the action of the chain *p* on the arm *H*, so that the front prong of the fork *G* will lift the front end of the coupling-link, while at the same time the rear prong of the fork bears down on the inner end of the link, so that said inner end will go down behind an incline, *t*, formed in the bottom of the draw-head, allowing the front or outer end of the link to be raised to any desired height for entering the opposite draw-head. When the cars are coupled the fork *G* is brought back into its original position by means of a spring, *v*, on the shaft *n*, or by weighting the arm *H*, or by both.

By connecting the chain *p* with the arm *J* by means of a spring, *K*, it allows for the outward and inward movement of the draw-head, and by the use of the spring-hook *s* the chain *p* disconnects itself from the arm *H*, in case of breakage of the draw-head, without danger of breaking or tearing loose the shaft *I*. This shaft may be provided with an arm connected with a rod extending to the top of the car, so as to operate the link from the top also.

It will be seen and understood that the interior of the draw-head *A* is the same as that ordinarily used, with the exception that the throat is contracted by means of *V*-shaped ridges *t* and *t'*, formed across the bottom and roof, as shown in Fig. 2, the front sides of said ridges being on the same incline, and forming, as it were, a continuation of the top and bottom of the mouth of the draw-head. These ridges form bearings on which the link can be turned up and down, as required, for

coupling cars of different height, and they also strengthen the draw-head at the point where most needed—namely, where the strain of the pin will be.

In the event of the pin *B* being broken, the ordinary straight pin may be inserted and used. When this coupler is used on flat cars, and there being consequently no use for the chain *i*, rod *k*, &c., there may be a bolt or slide through the rear end of one of the flanges *d*, to hold up the pin when desired.

In the connection of the chain *p* with the shaft or rod *I*, I do not confine myself to the grooved arm *J* and spring *K*, surrounding the same, as the spring and arm may be arranged in various other ways. For instance, the arm may be cylindrical, and the spring be inclosed therein. The link may be held at any desired height by simply inserting a small block under the crank of the rod *I*, or between said crank and the end of the car.

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

1. The draw-head *A*, provided with the interior transverse ridges *t t'* and the tapering bead *b*, substantially as and for the purposes set forth.

2. The coupling-pin *B*, having concave front curve *x*, straight front edge *e*, and convex back curve *z*, the curves being concentric, substantially as and for the purposes set forth.

3. In a car-coupling, the combination of the flat bar *D* and rod *k* with the slotted plate *E*, provided with the transverse groove *m*, substantially as and for the purposes set forth.

4. The combination of the draw-head *A*, having the ridges *t t'*, and the fork *G*, shaft *n*, and arm *H*, substantially as and for the purposes set forth.

5. The combination, with the link-adjusting device *G n H* and shaft or rod *I*, of the chain *p*, spring *K*, and arm *J*, projecting from said rod, substantially as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 6th day of May, 1875.

WM. VOORHEES PERRY.

Witnesses:

C. L. EVERT,
JOHN SMITH.