

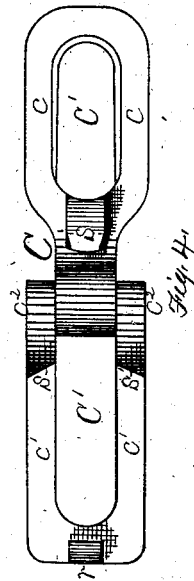
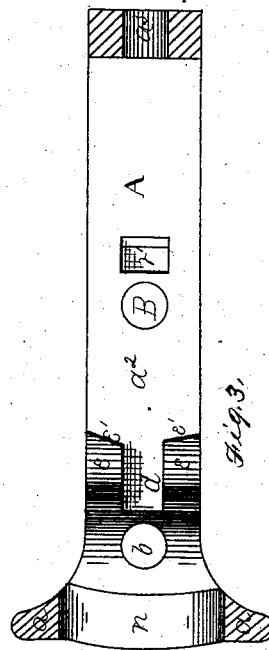
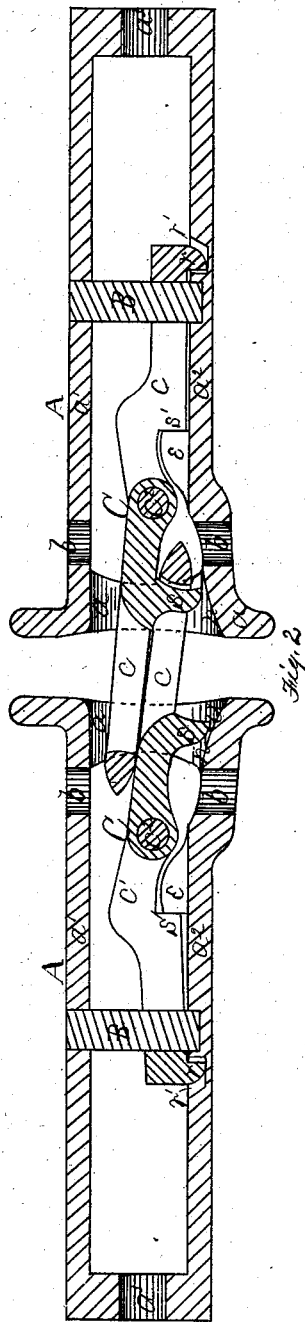
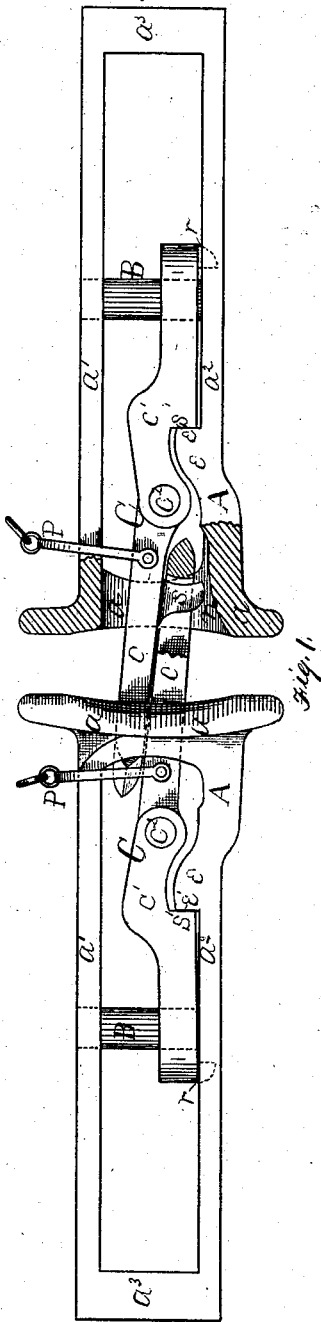
(No Model.)

J. T. WILSON & J. H. SIMPSON.

CAR COUPLING.

No. 259,960.

Patented June 20, 1882.



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# UNITED STATES PATENT OFFICE.

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## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 259,960, dated June 20, 1882.

Application filed March 27, 1882. (No model.)

*To all whom it may concern:*

Be it known that we, JOHN T. WILSON, residing at Pittsburg, and JAMES H. SIMPSON, residing at Millvale borough, both in the county of Allegheny, State of Pennsylvania, have invented or discovered a new and useful Improvement in Car-Couplings; and we do hereby declare the following to be a full, clear, concise, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—like letters indicating like parts—

Figure 1 is a view in side elevation of our improved car-coupling, one of the draw-bar heads being partially broken away. Fig. 2 shows a longitudinal vertical section of the same. Fig. 3 is a horizontal sectional view of one of the draw-bars, looking downward; and Fig. 4 is a plan view of the under side of one of our improved links used in the coupling.

Our invention relates to certain improvements in that class of car-couplings which effect an automatic coupling by the interlocking of two links, one on each draw-bar head; also, being raised on the inner face of the lower strap, they strengthen the draw at the section where draft-connection is made, instead of weakening it, as is done when holes, slots, or sockets are made in the draw-bar to secure such connection, such holes or cuts often being the starting-point of a crack or break. This in practice is an important feature of improvement; and it consists of a coupling device formed of two draw-bars and links, one link in each head, having interlocking shoulders for draft-connection between the links and bars, the links being guided in the draw-bars and adapted to interlock with each other, as hereinafter more fully described and claimed.

In the drawings, A A represent two draw-bars of similar form and construction, made by preference of wrought-iron, and consisting of bull-nose or head *a*, top and bottom straps, *a'* *a''*, and rear end, *a'''*.

On the inner face of the lower strap, *a''*, in rear of the usual pin-hole, *b*, are formed two raised shoulders, *e e*, abreast and having a passage or space, *d*, between them, through which the hook *s*, on the front part of the link, passes, as

presently described. The rear faces, *e'*, of these shoulders are made abrupt or vertical to engage with corresponding shoulder-stops, *s'*, on the links, and in order that the draft upon the link may be employed to hold it in place these stop-faces *e'* are beveled inwardly and toward the front. The stops *s'* are also given a corresponding inclination, thus securing a side bearing between these shoulders, which assists in holding the link in the central line of the draw-bar.

The links C C—one for each draw-bar—are formed by preference of front and rear portions, *c c'*, which are connected by a pin or pivot joint, as at *c''*, or in other convenient way, whereby the parts are free to move on such joint. Both parts *c c'* are of link form, inclosing openings C', (see Fig. 4,) the purposes of which will presently appear. On the under face of the forward portions, *c*, a little in front of the joint *c''*, are made dependent hooks *s*, adapted to engage with the part *c* of the link when brought together, as illustrated in Figs. 1 and 2.

The rear portions, *c'*, of the links are by preference bent over the shoulders *e*, as in Figs. 1 and 2, and the stops *s'* are formed on the lower faces of the two side bars at or near the point of bend, such shoulders or stops being adapted, as before described, to form a draft-connection with the stops *e*.

Strengthening and guiding pins B are passed vertically through the straps *a' a''* of the draw-bars and through the openings C' of the rear or inner portions, *c'*, of the links. The links are free to slide longitudinally within the draw-bars, being guided and held in place by the pins B and by the openings in the heads *a*. The extent of this movement is determined by the length of rear openings C', and its purpose is to permit the links to slide backward under a pushing force, and thus allow the heads *a* to come in contact; also, when coupling with a car having the ordinary link, the links C may be pushed back to allow a pin to be passed through the holes *b*. In such movements of the links the hooks *s* pass through the grooves or spaces *d* between shoulders *e e*, thus preventing lifting the outer ends of the links and

consequent uncoupling when cars are pushed together.

At the ends of the inner parts,  $c'$ , of the links are formed lugs  $r$ , which drop into recesses  $r'$  in the draw-bars, and thus form a check upon the backward movement of the links and hold them forward in place with sufficient resistance to effect a coupling. The rear edges of these lugs and recesses are beveled somewhat, however, as shown, so that upon the application of unusual pushing force the lugs may ride up such inclines, and thus permit the links to be pushed back.

Instead of lugs on the links, short studs or pins may be set in the face of straps  $a^2$  or formed thereon in proper position to afford a rear bearing or check, and thereby hold the links forward for coupling, as before described.

Forward of the shoulders  $e$  the bottoms  $n$  of the draw-head openings are inclined downward. The parts  $e$  of the links, resting on such inclines when uncoupled, tend to keep the links drawn out in position for coupling, and if for any reason the links should be left "pushed back" a little jarring by motion of the car will suffice to move them out again in position for coupling.

In order to uncouple the upper link is raised by any convenient means forward of the joint  $e^2$ , allowing its hook and the under link to disengage. This may be effected by a stirrup, P, Fig. 1, operated from the side or top of the car by any suitable lifting mechanism; or, instead of the stirrup, a lifting-lever may be pivoted to the under side of the draw-bar in position to lift the link, as described. Such devices are well known, and we do not deem it necessary to describe them in detail.

These couplings are simple in construction, inexpensive, and adapted for use on either freight or passenger cars. They operate automatically in effecting a coupling. They permit of free range of movement between cars. Once coupled they cannot become uncoupled except by breakage or design, and by forming the draft-connection between the links and draw-bars by means of shoulder-stops instead of by pins or pivots, as heretofore, the couplings are strengthened and danger of breakage is much reduced.

If desired, the hooks  $s$  may be made integral with the rear portion of the link and extended forward of the joint; or the hook may be made independent of and pivoted to the link, so as to occupy substantially the same relation to it as shown in the drawings. We prefer, how-

ever, the construction shown, in which the hook is formed integral with the front portion of the link, as most convenient in use.

We claim herein as our invention—

1. A draw-bar, A, having an interior link-opening therein, with shoulder-stops  $e$  raised on the inner face of its lower strap, in combination with a link, C, having shoulder-stops  $s'$  raised on the under face of its side bars and adapted to engage and form a draft-connection with the raised stops  $e$ , substantially as and for the purposes set forth.

2. The draw-bar A, having shoulder-stops  $e$  formed thereon, in combination with guide-pin B and link C, such link having openings  $C'$  in its front and rear parts, a hook,  $s$ , depending from the front part, and shoulder-stops  $s'$  on the rear part adapted to engage and form a draft-connection with the stops  $e$ , substantially as set forth.

3. The combination of draw-bar A, having two shoulder-stops,  $e e$ , formed on its lower strap, with passage  $d$  between them and link C, having depending hook  $s$  in its central line, and shoulder-stops  $s'$  on the under side of its side bars adapted to form draft-connection with stops  $e e$ , substantially as set forth.

4. The draw-bar A, having shoulder-stops  $e e$  formed thereon, in combination with link C, having stops  $s'$  on its under side adapted to form draft-connection with stops  $e e$ , and a check-stop on the draw-bar in rear of the link adapted, as described, to hold the link forward for coupling, substantially as set forth.

5. The draw-bar A, having recess  $r'$  and stops  $e e$  on the inner face of its bottom strap, such stops having rear vertical faces inclined inward and forward to a transverse line, in combination with link C, having a lug,  $r$ , and stops  $s' s'$  on its under side, the stops  $s'$  having inclined faces adapted to engage and afford side bearings on the stops  $e e$ , substantially as set forth.

6. The jointed coupling-link C, having elongated openings  $C'$  in both the front and rear portions, a depending hook,  $s$  forward of the joint, and shoulder-stops  $s' s'$  on the under side in rear of the joint, substantially as set forth.

In testimony whereof we have hereunto set our hands.

JOHN T. WILSON.  
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Witnesses:

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