(No Model.)

2 Sheets—Sheet 1.

L. DAVIS, Jr

CAR COUPLING.

No. 492,275. Patented Feb. 21, 1893.

Fig. 1.

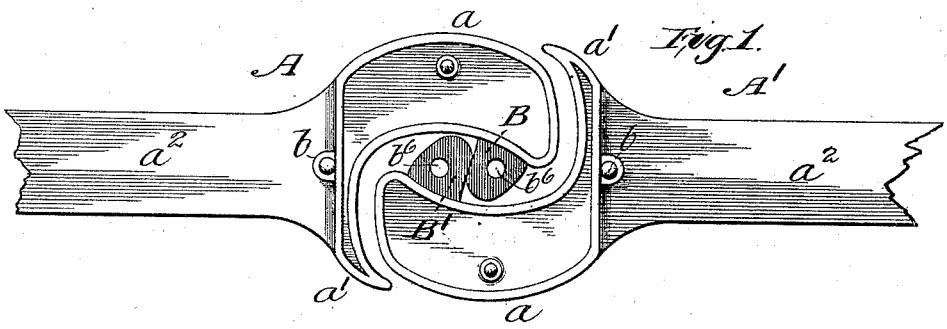


Fig. 2.

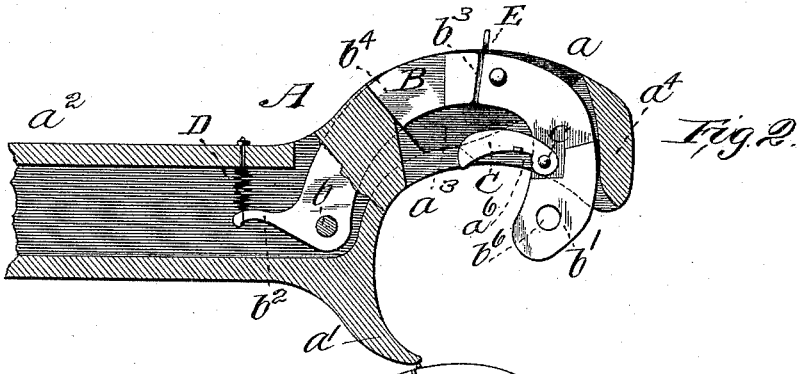


Fig. 3.

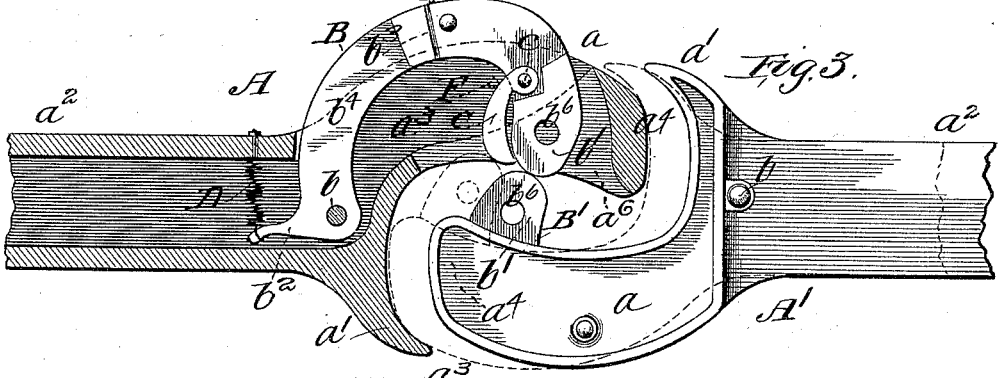
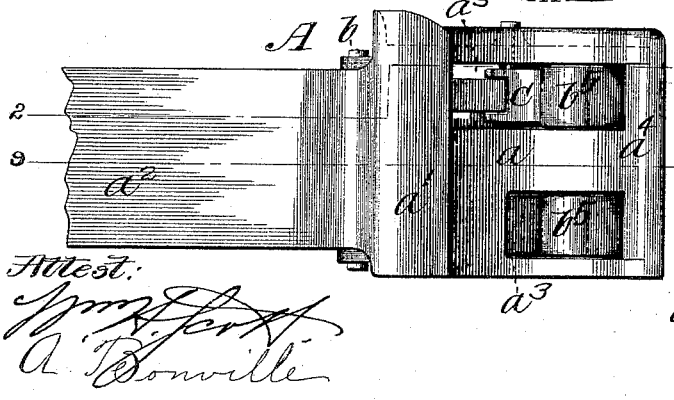


Fig. 4.



Witnesses:

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Inventor:

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by C. N. Mandy

his Atty

(No Model.) 2 Sheets—Sheet 2.

L. DAVIS, Jr.

CAR COUPLING.

No. 492,275. Patented Feb. 21, 1893.

Fig. 5.

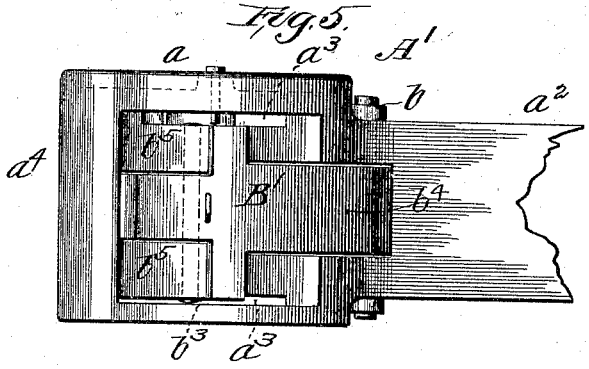


Fig. 6.

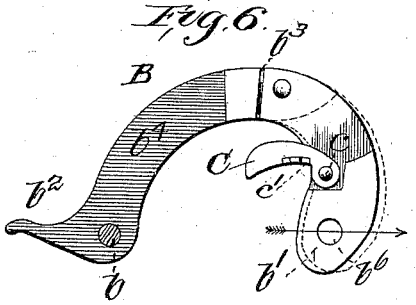


Fig. 7.

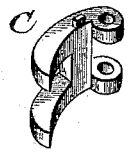


Fig. 8.

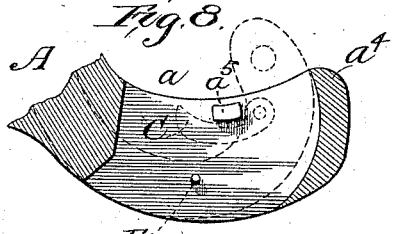
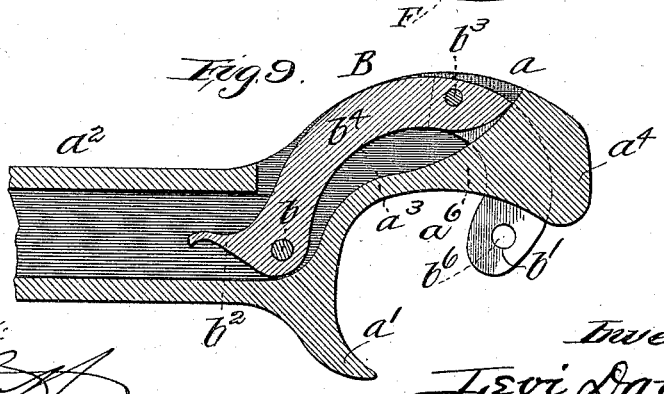


Fig. 9.



Witnesses:
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UNITED STATES PATENT OFFICE.

LEVI DAVIS, JR., OF ALTON, ILLINOIS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 492,275, dated February 21, 1893.

Application filed April 21, 1892. Serial No. 430,137. (No model.)

To all whom it may concern:

Be it known that I, LEVI DAVIS, JR., of Alton, Illinois, have made a new and useful Improvement in Car-Couplings, of which the following is a full, clear, and exact description.

The coupling under consideration belongs to the vertical plane class.

A leading object is to provide for favorably supporting the coupling hook against a pulling strain, and for guarding it against a buffing strain, and to these ends, as well as others of a less prominent character, the improvement consists mainly in the construction and operation of the coupling hook and the coacting portion of the draw head, all substantially as is hereinafter set forth and claimed, aided by the annexed drawings, making part of this specification and exhibiting a desirable mode of carrying out the improvement, and in which—

Figure 1 is a plan of the improved coupling: Fig. 2 a horizontal section of one of the draw heads of the coupling, the section being taken on the line 2—2 of Fig. 4: Fig. 3 a view of the coupling, one of the draw heads being in plan, and the other in horizontal section, and the parts being relatively arranged as for uncoupling: Fig. 4 a side elevation, from the inner side thereof, of one of the draw heads: Fig. 5 an elevation, from the outer side thereof, of the draw head: Fig. 6 a plan of the draw head hook: Fig. 7 a view in perspective of the stop with which the draw head hook is provided: Fig. 8 a horizontal section of the draw head, inverted, the section being on the line 2—2 of Fig. 4, and the position of the hook and its stop being indicated in broken lines: and Fig. 9 a horizontal section of one of the draw heads, on the line 9—9 of Fig. 4.

The same letters of reference denote the same parts.

A represents one, and A′, the other, of the draw heads of the coupling. The coupling hooks, with which the draw heads are respectively provided, are shown at B and B′. Each hook is provided with a part which may be termed a stop C. It is pivoted to the hook at *c*, and adapted to turn thereon as is indicated by its different positions. The draw heads are similar, as are also the hooks, and the stops, but relatively arranged to enable them to couple substantially as shown.

The leading features of the draw-head are the parts *a* and *a′*. The part *a* is the principal portion of the draw head, and it projects from the draw bar, a^2, at one side thereof, and in a direction which is substantially parallel with the projected longitudinal axis of the draw bar, substantially as shown. The part *a′*, projects from the opposite side of the draw bar but slightly, and substantially as shown. Viewed from above the draw head may be said to be L-shaped. The part *a* is chambered at a^3 to receive and provide for the operation of the hook and its stop. The hook is pivoted to the draw head or draw bar, and preferably at *b*, substantially as shown, and its movement is fairly indicated by the two positions of the hook shown respectively in Figs. 2 and 3. In its position of Fig. 2 the point, *b′*, of the hook projects from the part *a*, to engage with the hook of the opposing coupling as illustrated in Fig. 1, and in its position of Fig. 3 the hook, in the draw head A, is withdrawn sufficiently to enable the hook of the opposing draw head to pass it. The preferable form of the hook is the one shown. It preferably sufficiently conforms to the shape of the part *a* of the draw head to be, with the exception of its point *b′*, contained therein when in position for coupling. The preferable means for inclining it to assume this position is the spring, D, which at one end is secured to the draw bar, and at the other end to an extension b^2, of the hook, substantially as shown. When the hook is forced or moved from its position of Fig. 2 into that of Fig. 3 the spring is stretched, and when the hook is released the spring acts to effect the return of the hook into its position of Fig. 2. Any other suitable means, however, may be substituted for those described for effecting the movement of the hook into its position of Fig. 2. The leading features however of the hook and the coacting portion of the draw head are mainly these: The hook in its outer part is wholly within the fixed part of the draw head, and thus the draw head is of material value as a protection to the hook; in many forms of vertical plane car-couplings the hook or knuckle is hinged immediately

at the outer end of the draw head, and in consequence is liable to breakage from buffing strains at that point; this is avoided not only by means of the protection referred to, but also by reason of the shape of, and the mode of pivoting, the hook, namely, at or in the vicinity of the junction of the draw head with the draw bar.

The preferred form of the hook is substantially semi-circular, as shown, and owing to this and to the remoteness of the pivoted point from that at which any buffing strain is received upon the hook the difficulty referred to is largely obviated. But another and more important feature of the hook is a joint, b^3, introduced into the hook between its point and its pivot; it serves a double purpose; to materially cushion a buffing strain received upon the hook, and secondly, and more especially, to enable a pulling strain upon the hook to be largely sustained by the outer and fixed portion of the draw head. For the portion a^4 of the draw head is sufficiently near the hook-point, and the hook-joint is of such a nature as to enable the hook-point, when pulled outward, to turn upon the inner portion, b^4, of the hook and bear against the draw head portion a^4. The movement of the hook-point when thus drawn is indicated in Fig. 6. The hook point, at such times, comes to a bearing against the draw head portion, a^4, and tends to rock thereon sufficiently to prevent the hook at and in the vicinity of its joint from moving laterally outward, but rather to draw inward and brace against the inner portion, b^4, of the hook. As the hooks of the opposing draw heads meet each other in coupling they are crowded backward into the parts a, a, of their respective draw heads sufficiently to pass each other, after which the springs D, D, act to cause the hooks to interlock, and, to uncouple the draw heads, the hook or hooks by any suitable method—for instance by means of any tie, not shown, attached to the eye E upon the hook—are drawn outward sufficiently to release the hooks from each other.

The stops, C, are utilized as follows: It is often desirable to adjust the mechanism so that the draw heads may be set for uncoupling. In coupling, the hooks retreat, as stated, sufficiently to enable them to pass each other and become interlocked. The hooks, however, can be drawn outward still farther, and this is done when it is desired to leave the hooks in such a relative position as shall enable the draw heads to be uncoupled. As either hook is thus turned farther outward its stop encounters any suitable shoulder, such for instance as the pin F, in or upon the draw head, and the stop is thereby turned around on its pivot and brought into the position substantially indicated by the broken lines in Fig. 3; in this position the point of the stop comes opposite the point of the opposing hook and serves as a shoulder to prevent its own hook from moving inward, and the two hooks for the time being are thus hindered from lapping behind each other, and when the draw heads are moved apart from each other their hooks assume the relative position shown in the full lines in Fig. 3 and the desired uncoupling is thus effected. Any suitable shoulders, such as shown at c', and a^5, upon the stop and draw head respectively may be used to limit the inward or closing movement of the hook.

So far as having the coupling hook or any part thereof, movable to enable its outer portion to be drawn, when coupled against, an outlying portion of the draw head, is concerned, I desire not to be limited to any particular shape of hook, or mode of pivoting it, or of rendering it, or its outer portion, movable.

The draw head is materially strengthened by means of the rib, a^6, which extends, between the top and bottom of the draw head part a, from the inner end of the draw head outward to connect with the portion a^4 of the draw head. Said portion a^4, is thereby more strongly braced and tied against buffing and pulling strains. The preferable form of said rib is exhibited. The coupling hook point, b', is suitably forked, substantially as shown at b^5, b^5, to enable it to pass the rib, a^6, in its movement. The coupling hooks are perforated vertically at b^6 to provide for coupling them with an ordinary draw head.

While I prefer the method shown for connecting the coupling hook at its inner end with the draw head I desire not to be restricted thereto, or to any particular form of connection, so long as the coupling hook, when drawn by the opposing coupling, is caused to bear against an outlying portion of the draw head.

I claim—

1. In a car coupling of the vertical-plane type, the combination of the draw head and the coupling hook, said hook being jointed between its point and its pivot, for the purpose described.

2. In a car coupling of the vertical plane type the combination of the draw head and the coupling hook said hook being jointed, and its point-portion adapted to bear against an outlying portion of the draw head, for the purpose described.

3. In a car coupling of the vertical plane type, the combination of the draw head and the coupling hook, said draw head having the part, a, chambered and extended as described and said hook being of the semi circular shape, and pivoted and jointed as described.

4. The combination of the draw head, the hook, and the stop, said draw head being chambered, said hook being pivoted to said draw head, and said stop being pivoted to

said hook, and said draw head having a shoulder to effect the adjustment of said stop, substantially as described.

5. In a car coupling of the vertical plane type, a coupling hook having an adjustable stop, substantially as and for the purpose described.

6. The combination of the draw head and the coupling hook, said draw head being chambered as described and having the rib, a^6, extending between the top and bottom of the draw head to support the outer portion of the draw head, substantially as described.

Witness my hand this 15th day of April, 1892.

LEVI DAVIS, JR.

Witnesses:
C. D. MOODY,
E. M. DAVIS.