

(No Model.)

J. N. MARTIN & W. H. HARRIS.
CAR COUPLING.

No. 428,118.

Patented May 20, 1890.

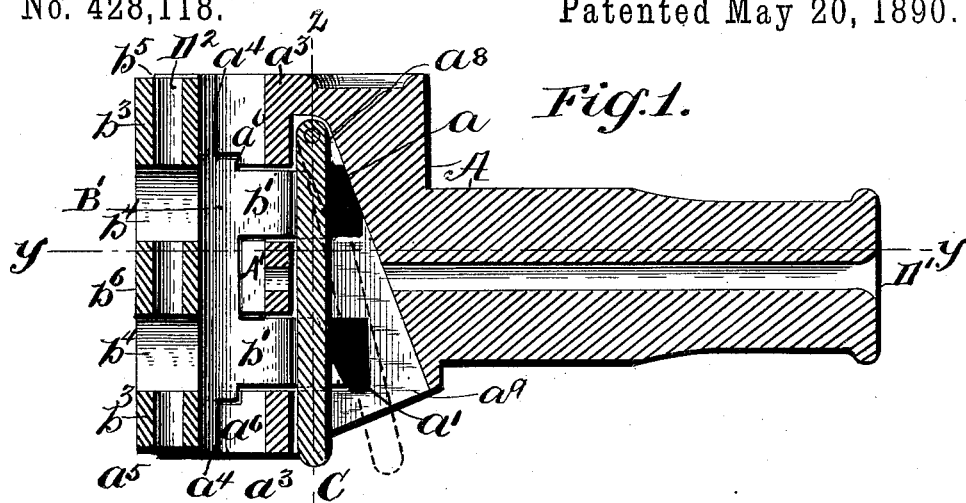


Fig. 1.

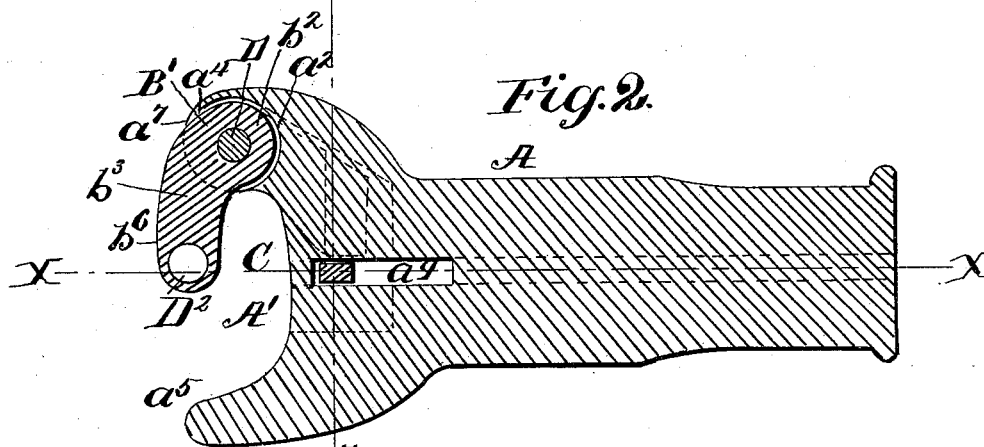
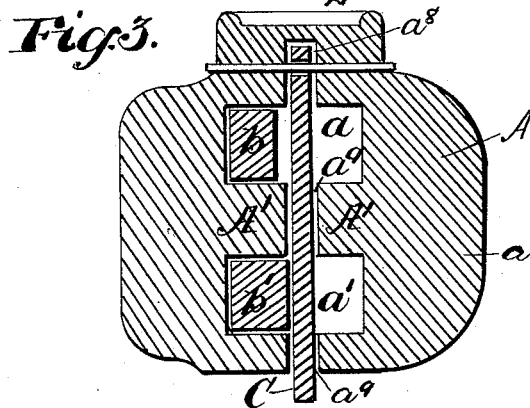


Fig. 2.



UNITED STATES PATENT OFFICE.

JAMES N. MARTIN AND WILLIAM HAMILTON HARRIS, OF NEWBERRY, SOUTH CAROLINA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 428,118, dated May 20, 1890.

Application filed December 16, 1889. Serial No. 333,965. (No model.)

To all whom it may concern:

Be it known that we, JAMES N. MARTIN and WILLIAM HAMILTON HARRIS, citizens of the United States, residing at Newberry, in the county of Newberry and State of South Carolina, have invented certain new and useful Improvements in Car-Couplers; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to certain new and useful improvements in car-couplings of the class known as "twin jaw-couplers," to which class Letters Patent Nos. 372,037 and 398,523, granted to us October 25, 1887, and February 26, 1888, belong; and our present invention consists more particularly in certain improvements therein, whereby they are adapted to couple on curves, are given a larger bearing-surface, and are strengthened, as will be hereinafter more fully described and claimed.

Referring to the accompanying drawings, in which corresponding parts are designated by similar letters, Figure 1 is a central section of a coupler constructed according to our invention, taken on the vertical plane of the longitudinal axis thereof or of the line $x x$ of Fig. 2. Fig. 2 is a horizontal section on line $y y$ of Fig. 1. Fig. 3 is a transverse vertical section on line $z z$ of Figs. 1 and 2. Fig. 4 is a perspective view of the hook.

The draw-bar A has across the forward portion of the interior thereof a horizontal web A', which divides the interior thereof into a lower and an upper recess $a' a$, respectively, the web A' having a portion of one side of its forward face concaved, as at a^2 , to afford a central bearing for the hook-barrel B' in buffing, while the remaining portion of the said forward face is in line with the top and bottom a^3 of the draw-head, thus forming an additional and central point, on which the buffing-face b^6 of the hook of a corresponding coupler may bear. Ears a^4 are formed on the top and bottom a^3 of the draw-head, on the same side thereof as is the concavity a^2 of the web, while a guard-arm a^5 extends from the

top to the bottom of the draw-head upon the opposite side. The ears a^4 have arc-shaped shoulders a^6 on the inner sides, the concavity of these shoulders corresponding to the concavity of the web at a^2 , and serve to support the ends of the barrel B' of the hook in buffing. The barrel B' of the hook B is pivoted between the ears a^4 by the pivot-pin D, and has a bifurcated shank formed on that side thereof which is to the rear when the hook is locked in the draw-head, the forks b and b' of which the said shank is composed normally resting within the recesses a' , respectively, while the central portion b^2 of the barrel B' rests against the concavity a^2 of the web A', the upper and lower ends of the barrel resting against the shoulder a^6 , as has been hereinbefore stated, thus strengthening the hook against buffing strains.

The forward arm b^3 of the hook, which is formed upon the barrel at or about right angles to the bifurcated shank, has a plurality of slots b^4 formed therein and opposite the forks b b' , and is of greater breadth than the barrel B', thus forming shoulders b^5 b^5 at the top and bottom, which extend upward and downward to or about the level of the upper surface of the top a^3 and lower surface of the bottom a^3 of the draw-bar, respectively, the said shoulders having a concaved face struck with a slightly greater radius from the pivot-pin D than are the convexed forward surfaces a^7 of the ears a^4 , around which they revolve. We by preference construct the forward arm b^3 of greater breadth than is the general practice in couplers of the same class at the present time, thus affording a greater buffing surface b^6 upon the forward face of the forward arm of the hook and permitting us to couple cars provided with our couplers when the couplers thereof are upon horizontal planes which are at a greater distance apart than is now possible, and it also permits us to form the hereinbefore-described plurality of slots b^4 therein, whereby cars equipped with couplers of the so-called "link-and-pin" type may be more readily attached to cars having our invention applied thereto, and it is not necessary to move the link

through as great a vertical distance as has been previously the case.

We are enabled to use a hook of greater breadth than is usually employed, from the fact that the bifurcated shank thereof may be made of a correspondingly greater breadth without giving it an undue weight, while any strain which may be transmitted through the links inserted in the slots b^4 will be transmitted directly to the fork b or b' opposite thereto. The draw-head is also greatly strengthened by the use of the web A' .

The forward faces of the rear ends of the forks b b' have faces b^8 , which, when the forks are fully within the recesses a a' , are parallel with the longitudinal axis xx of the draw-bar, the face b^8 of the lower fork b' being slightly in advance of the vertical plane of the corresponding face of the upper fork b , whereby the face of the latter will in coupling pass the longitudinal axis xx before the former. The rear ends of both forks have beveled faces b^9 , the total length of the lower fork being slightly greater than that of the upper one.

A latch C , consisting of a bar, is pivoted in the longitudinal slot a^8 in the top of the draw-head, and extends through the longitudinal slots a^9 in the web A' and bottom a^3 thereof to below the latter, where it may be connected to any approved device for withdrawing it from a vertical position, in which it is normally held by gravity, backward in the said slots a^9 , which are in line with the longitudinal axis xx of the draw-bar, the pivotal point of the latch being forward of the rear end of the forks b b' and above the faces b^8 formed thereon. A longitudinal perforation D' extends through the draw-bar in order to render it lighter, while a vertical hole D^2 is formed in the forward arm b^3 of the hook, through which a pin may be inserted in coupling with cars having couplers of the link-and-pin type, both of which are well known.

In our invention, as in all couplers of the hereinbefore-mentioned type to which it belongs, the hook swings upon its pivot-pin in uncoupling to a position in which the hook, of the corresponding coupler may be freely withdrawn, and in coupling the hook is forced back into its original position, the forks b b' entering the recesses a a' in the draw-bar until their motion is stopped by the rear walls of the said recesses or by any other stops which may be provided. In thus entering the draw-head in coupling the beveled faces b^9 of the forks strike the latch and force it backward out of a vertical line; but when the face b^8 of the upper fork passes the longitudinal axis of the coupler, which will be before the motion of the hook is completed, the latch will drop in front thereof, taking the position shown in dotted lines in Fig. 1 and preventing the withdrawal of the said fork. This will frequently happen in coupling on curves, as in such cases the hook is not fully

forced within the draw-head. If the rotation of the hook is now continued, the face b^8 of the lower fork b' will also pass behind the longitudinal axis xx , when the latch will again, under the influence of gravity, assume a vertical position, as is shown in Fig. 1, in front of the faces b^8 of both of the forks b and b' , locking them fully within the draw-head. If the latch be now withdrawn from its vertical position, the hook will be again free to swing outward and uncouple.

In Fig. 3, for the better illustration of our invention, we have shown the faces b^8 of the two forks of the shank out of the same vertical plane, but in an exaggerated degree, and it will be understood that in practice the difference in the planes of the said faces may be slight.

Having now described our invention, what we desire to secure by Letters Patent of the United States is—

1. In a car-coupler, the combination of a draw-bar having a web across the interior thereof, a hook having a bifurcated shank pivotally attached to the said draw-bar, and means for locking the hook against rotation, as and for the purposes described.

2. In a car-coupler, the combination of a draw-bar having a web across the interior thereof, a hook having a bifurcated shank pivotally attached to the said draw-bar, the forks of the said shank resting upon either side of the said web, and means for locking both of the said forks against rotation, as and for the purposes described.

3. In a car-coupler, the combination of a draw-bar having a web across the interior thereof, the said web being provided at its forward end with a concave bearing, a hook having a bifurcated shank pivotally attached to the draw-bar, the forks thereof resting upon either side of the said web and the central part of the said shank resting against the concavity therein, and means for locking the hook against rotation, as and for the purposes described.

4. In a car-coupler, the combination of a draw-bar, a hook having a bifurcated shank and a forward arm provided with a plurality of slots therein, the said slots being opposite the forks of the shank, and a lock adapted to lock both of the said forks against rotation, as and for the purposes described.

5. In a car-coupler, the combination of a draw-bar, a hook having a bifurcated shank pivotally attached thereto, the forward faces of the rear ends of the forks of the said shank being in different vertical planes, and a lock adapted to fall in front of the faces thereof consecutively in coupling, as and for the purposes described.

6. In a car-coupler, the combination of a draw-bar having a web across the interior thereof, a hook having a bifurcated shank pivotally attached to the said draw-bar, the forks thereof resting upon either side of the said web, the

forward faces of the rear ends of the forks
being upon different vertical planes, a for-
ward arm attached to the said hook and form-
ing a part thereof, provided with a plurality
5 of slots, the said slots being opposite the forks
of the shank, a concave bearing-surface upon
the forward part of the web against which
the central portion of the hook rests, and a
lock adapted to fall in front of the faces of

the said forks consecutively in coupling, as to
and for the purposes described.

In testimony whereof we affix our signatures
in presence of two witnesses.

JAMES N. MARTIN.

WILLIAM HAMILTON HARRIS.

Witnesses:

JNO. M. KENARD,

E. P. MCCLINTOCK.