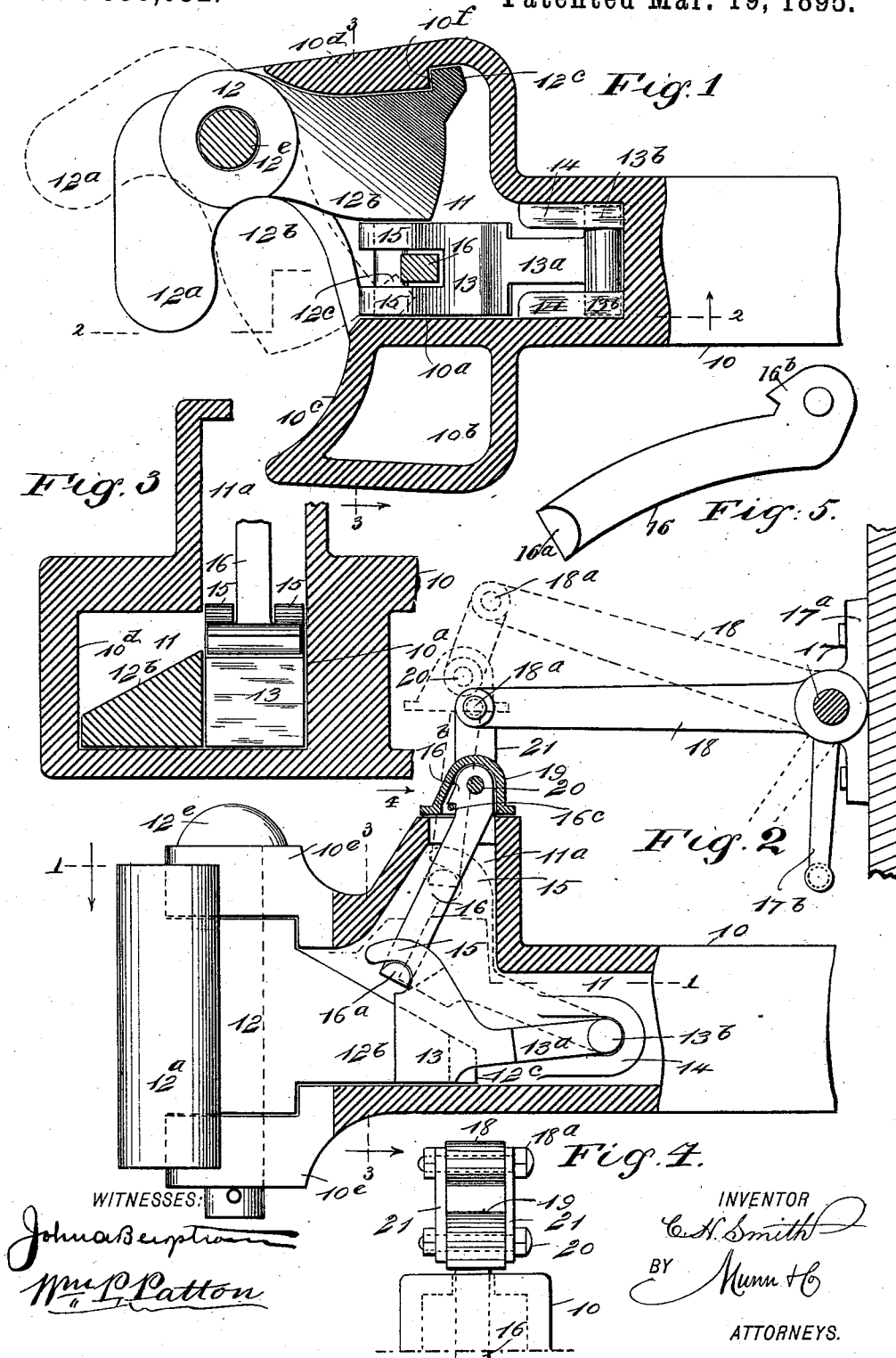


(No Model.)

C. H. SMITH.
CAR COUPLING.

No. 536,052.

Patented Mar. 19, 1895.



UNITED STATES PATENT OFFICE.

CHARLES H. SMITH, OF BIRMINGHAM, ALABAMA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 536,052, dated March 19, 1895.

Application filed April 13, 1894. Serial No. 507,441. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. SMITH, of Birmingham, in the county of Jefferson and State of Alabama, have invented a new and useful Improved Car-Coupling, of which the following is a full, clear, and exact description.

My invention relates to improvements in car couplings of the Janney type, and has for its objects to provide novel and useful features of construction for a device of the character indicated, which will render it highly efficient in service, and adapt it for an automatic release of its coupling jaw, if the securing devices that normally retain the coupling drawhead in connection with the cars, should accidentally be broken or become loosened, said release preventing the car coupling from falling on the track, to occasion a derailment of cars in the rear of the disabled coupling.

To these ends my invention consists in the construction and combination of parts, as is hereinafter described and indicated in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views shown.

Figure 1 is a sectional plan view of the forward portion of the improved car coupling, showing novel details of construction, taken on the line 1—1 in Fig. 2. Fig. 2 is a sectional side view of the improvement, on the line 2—2 in Fig. 1. Fig. 3 is a transverse sectional view of the drawhead and interior parts, taken on the line 3—3 in Fig. 1. Fig. 4 is a front view of details, showing the preferred means for connecting the working parts of the coupling with a releasing device on the car, taken opposite the arrow 4 in Fig. 2; and Fig. 5 is an enlarged detailed side view of the lifting bar, slightly changed in form, and which is an essential feature of the improvement.

The drawhead 10, comprises a laterally enlarged, forward portion that is integrally formed on a rectangular body which is sufficiently elongated for efficient service, and in completed form (not shown) is adapted for a sliding connection with a car frame; and as usual is spring cushioned to withstand shocks

of percussion and draft strain, and as these supplementary details are of any desired construction now in use, they are omitted from the drawings.

There is a recess 11 formed in the widened front end of the drawhead 10, and extends rearwardly into the rectangular body a short distance, said recess being furnished with one straight side wall, as shown at 10^a in Fig. 1, the lateral enlargement of the recessed drawhead which projects outside of the wall 10^a, being chambered as at 10^b, to lighten it. This part forming one horn of the head has an inward curved front wall 10^c produced on it. The recess 11, is widened so as to extend into the opposite horn of the drawhead, leaving a side wall 10^d remaining intact with the body 10, having a suitable thickness to afford the necessary strength for said part of the drawhead, the inner face of which is convex curved toward the front edge of the side wall to adapt it to sustain the latch block 12, when the latter is in coupled condition.

The block 12 just mentioned, comprises a substantially L-shaped body, of such relative dimensions as will render it capable of sustaining the shocks due to strains incidental to its service, and near the angular head of its body is pivotally secured between the top and bottom ears 10^e of the drawhead, by a pin 12^e that fits into aligned perforations of the latch jaw and ears, the latter being forwardly projected a proper degree, so as to permit the block 12 to swing on its pivot pin and assume the position indicated by dotted lines in Fig. 1, which is the uncoupled adjustment of the improvement.

The forward limb 12^a, which is the latch jaw of the block 12, is afforded such a proportionate length, as will project its free end across the drawhead when in the position indicated by full lines in Fig. 1, so that said terminal of the limb will lie in about the same plane with the inner surface of the straight side wall 10^a, and as indicated in Figs. 1 and 2, the free end of the forward limb 12^a is rounded to remove its side corners.

The rearwardly projected limb 12^b of the latch block 12, is sloped downwardly, laterally and rearwardly on its upper side, leaving the rear end of a sufficient thickness to render it substantial. The outer side of the limb 12^b

is incurved so as to permit it to fit on the inner surface of the drawhead side wall 10^a when the latch block is adjusted as represented by full lines in Fig. 1. A vertical right angular shoulder 10^f is formed on the inner surface of the side wall 10^a near the rear wall of the recess 11, by increasing the width of the latter at said side wall. A laterally projecting ear 12^e is formed on the limb 12^b at its rear end, which ear is shaped to fit against the shoulder 10^f when the forward limb 12^a is located transversely of the drawhead.

At a point which will longitudinally align it with the rectangular body 10 of the drawhead, there is an upward extension 11^a of the recess 11, produced, by an integral box-like formation on the top wall of the forward portion of the drawhead. As shown in Fig. 2, the rear transverse wall of the upward chambered extension 11^a of the recess 11, is vertical, and the front wall of the same is inclined rearward a suitable degree, these walls being joined by the upright parallel side walls shown in Fig. 3, the lower inner corner of the inclined front wall of the chamber 11^a being rounded to afford clearance for the free movement of a weighty locking block 13.

As shown, the part 13, comprises a metal block which is upright on its front face, and parallel on the sides that are also vertical, the block being laterally proportioned to permit it to loosely fit in the recess 11. From the principal portion of the locking block 13, a limb 13^a is rearwardly extended of a proper length, and on the rear end of said limb two cylindrical bosses 13^b of similar dimensions are oppositely formed.

At opposite points within the rearward extension of the recess 11, two pairs of spaced and parallel flanges 14, are projected from the side walls of this rectangular portion of the recess, producing grooves between the flanges located in the same horizontal plane. As shown in Fig. 2, where one pair of flanges 14 appears, each pair of said flanges has rear ends joined by an integral curved wall, which walls afford a box bearing for the bosses 13^b when the locking block 13 is in position for service. The length of the limb 13^a, is so proportioned that when the bosses 13^b are engaged with the curved rear end walls that join the paired flanges 14, the body of the block will be located directly below the upwardly-extending chamber 11^a.

On the upperside of the locking block 13, two similar forwardly-curved hook limbs 15, are formed, these being sufficiently spaced apart to permit the loose introduction between them of the lower end of the lifting bar 16, said bar having an integral lug 16^a formed on its lower end which projects equally beyond the sides of the bar, and curved on its top surface to adapt it to have a rocking engagement with the hook-limbs.

The hollow box produced by the walls that inclose the space above the recess 11, forming the chamber 11^a, is open and externally

contracted at the top, the straight body of the lifting bar 16, being afforded such a length as will permit its upper end to project a short distance through and above the chamber when the assembled parts are adjusted, as shown in Fig. 2. The lifting bar 16, in its normal position indicated in Fig. 2, inclines rearwardly, so that its upper end may project through the aperture at the top of the chamber 11^a, and avoid contact with the side walls that produce it, the upper end portion of the bar being fashioned to provide a hook on its front edge above the chamber walls, as shown at 16^b in Fig. 2.

There is a transverse rock shaft 17 provided to operate the working mechanism of the improved coupling, which shaft is journaled as usual on the end wall of a car by bearing boxes, as indicated at 17^a in Fig. 2, and at a suitable point on the shaft intermediate of its ends, the rocking arm 18 is secured, so as to project its forward end directly above the upper terminal of the lifting bar 16, a lever or crank arm 17^b on the end of the shaft, affording means for its rocking movement at the side of the car. A hollow cap-piece 19, that is shaped to loosely receive the rounded upper end portion of the lifting bar, is pivoted on said end by the transverse bolt 20, as clearly shown in Fig. 4, this bolt also serving to pivotally secure the lower ends of the two similar link plates 21 on the lifting bar and in loose contact with the sides of the cap-piece. The upper ends of the link plates 21, are jointed to the outer end of the rocking arm 18, as at 18^a, so that a rocking movement of the arm will elevate the lifting bar, and relatively dispose the several connected parts as shown by dotted lines in Fig. 2.

There is a cross pin 16^c transversely inserted through opposite perforations in the side walls of the cap-piece 19, below the hook 16^b of the lifting bar 16, this pin being provided to retain the cap-piece from displacement should the pivot bolt 20 become accidentally displaced.

It will be seen that the peculiar form given to the rearwardly-projecting limb 12^b of the latch block 12, will permit its sloped surface to glide below the locking block 13 when the latter is upwardly moved into the position indicated by dotted lines in Fig. 2, so that the forward limb or latch jaw 12^a, may move outwardly from a latched adjustment into the position shown by dotted lines in Fig. 1, and thus release the latch jaw of a similar coupling.

When the latch block is in an uncoupled condition as just explained, the ear 12^e, that projects from the rear limb 12^b, will impinge the straight side wall 10^a, and thus prevent the latch block from swinging too far. Said ear being beneath the locking block 13, affords a seat for the latter when the latch block is released and in open adjustment, so that the impingement of the latch jaw of a similar car coupling on the front edge of the rear

limb 12^b, will be adapted to automatically rock the latch jaw 12^a into a locked condition, said locking of parts being effected by the dropping of the body of the block 13, so as to rest on the lower wall of the drawhead, which will dispose its adjacent side in loose contact with the side of the rear limb 12^b, the ear 12^c at the same time engaging the shoulder 10^f, as shown in Fig. 1.

It is apparent, that if the drawhead 10 should become loosened or partly disengaged from the car frame while the car is in motion, the forward draft on the coupling will pull the lifting bar 16 upwardly and rearwardly, and thus release the latch block from a coupled condition, by the elevation of the locking block 13, that is thus effected. This is an essential feature of advantage resulting from the particular construction of working parts of the improved car coupling.

The cap piece 19 serves to protect the opening in the top of the drawhead so as to prevent the entrance of snow or sleet, and with the cross pin that doubly secures said cap piece to the upper end of the lifting bar, is reliably connected with the latter if the link plates are broken or the pivot bolt is displaced, so that the top of the coupling will remain closed, and in case of an accident to the lifting arm or shaft, the coupling can be manually adjusted to release a car, from the platform of the latter.

The lifting bar 16, as shown in Fig. 5, has its body slightly curved edgewise, so as to produce convexity on the normally forward edge of the same. This slightly modified form for the part named, will be likely to conduce to its efficiency in case the fastening of the drawhead is loosened on the car at the rear end of the drawhead, and it is drawn forwardly, the curvature of the lifting bar being then adapted to allow it to pass more freely upward and rearward while it lifts the block 13.

It is claimed for the improvement, that it is simple, reliable in service, safe to operate, and that it can be produced at a compara-

tively low cost, all parts being substantial and not liable to derangement from ordinary wear.

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

1. The combination, with a drawhead recessed in front, of a pivoted L-shaped latch block, an upwardly-movable locking block, having its rear end trunnioned in grooves in the drawhead and means to elevate the locking block, substantially as described.

2. The combination, with a draw-head widened in front, recessed in the wider part, and having an upward extension of said recess forming a supplementary chamber on top of the draw-head, of an L-shaped latch block pivoted between top and bottom forward ears on the draw-head, and having its rear limb sloped on top toward the rear, a weighty locking block having a limb adapted to rock in lateral grooves of the draw-head at the rear of the main recess, a lifting bar loosely engaging hooks on the locking block at its front and extending through the upper portion of the recess, a pivoted cap-piece on the upper end of the lifting bar, adapted to seal the top of the recess, and a device arranged to lift said bar from the side of the car, substantially as described.

3. In a car coupling of the side latching type, the drawhead having a widened front end, and the upwardly projected box formation on its top wall near the front, the front wall of which is rearwardly inclined, the upwardly rocking locking block, the lifting bar loosely secured on this block and projecting upwardly and rearwardly in the box formation, the pivoted hollow sealing cap-piece on the upper end of the lifting bar, and the locking pin in the cap piece located below a hook on the front edge of the bar, substantially as described.

CHARLES H. SMITH.

Witnesses:

JAMES DONLEY,
J. F. BOTTOM.