(No Model.)

C. H. SMITH.

CAR COUPLING.

No. 519,205. Patented May 1, 1894.

Fig. 1.

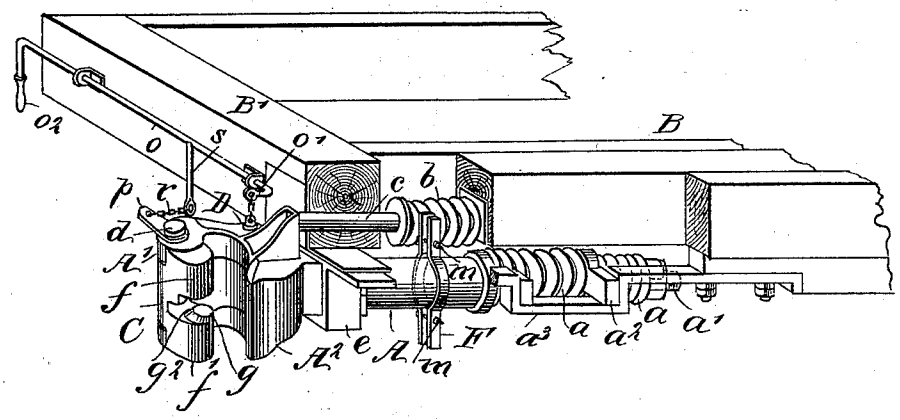


Fig. 2.

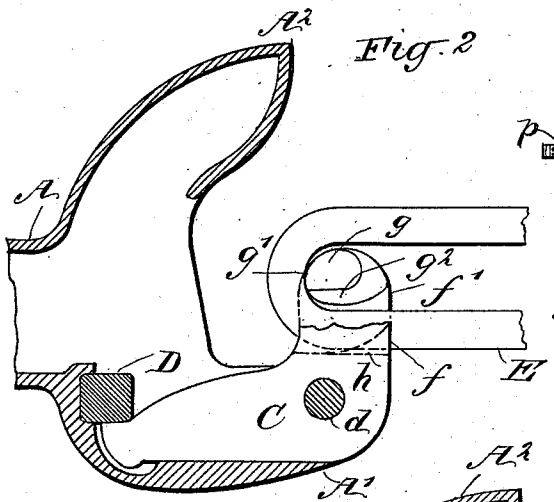


Fig. 3.

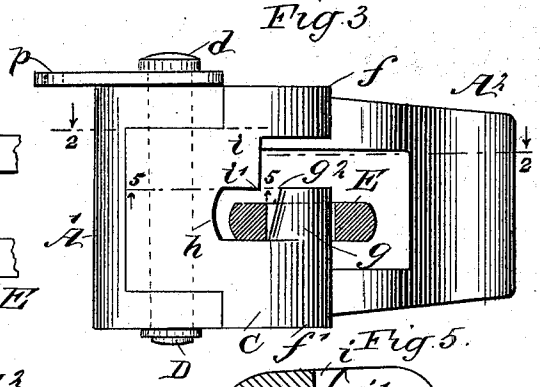


Fig. 5.

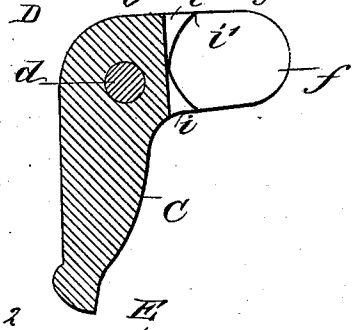
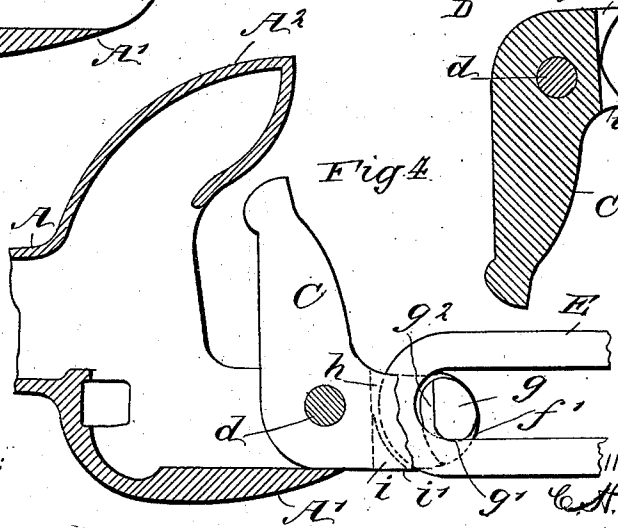


Fig. 4.



WITNESSES:

Paul Johnston

C. Sedgwick

INVENTOR

C. H. Smith

BY Munn & Co

ATTORNEYS.

THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES H. SMITH, OF BIRMINGHAM, ALABAMA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 519,205, dated May 1, 1894.

Application filed August 11, 1893. Serial No. 482,884. (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 new and useful Improvements in Car-Couplings, of which the following is a full, clear, and exact description.

My invention relates to improvements in car couplings of the side latching type, and has for its objects, to provide a car coupling of the type indicated, with novel, simple and reliable means for connecting such a coupling with the elongated coupling link of an ordinary link and pin car coupling, and also to provide a simple attachment for the draw-head of a side latching car coupling, which will prevent the draw-head from falling upon the railroad track in case said draw-head becomes detached from the car frame at its rear end; and a novel means for uncoupling a partly detached draw-head.

To these ends my invention consists in the construction of novel features and their combination with other parts, as is hereinafter described and claimed.

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

Figure 1 is a broken perspective view of one end of the frame of a car with the improved car coupling therewith. Fig. 2 is a broken sectional plan view of part of the front end of a drawhead, a link in part, and a pivoted latch jaw partly broken away, showing a feature of the improvement, the section being taken on the line 2—2 in Fig. 3. Fig. 3 is a front view of the end of a draw head, and the latch jaw thereon, having a feature of the improvement in coupled connection with a link shown in section. Fig. 4 is a sectional plan view of parts shown in Fig. 2, the latch jaw being released and swung into a position to release a coupling link; and Fig. 5 is a reverse plan view of the latch jaw, in section on the line 5—5 in Fig. 3.

The drawhead A, shown in the drawings, is one form for this main part of a car coupling of the side latching type that is well adapted to receive the features of improvement, which latter are not restricted in their application to the particular draw-head represented, as others of the same type can be readily fitted with the novel features, if their coupling latch-blocks are secured with a vertically adjustable key, a large proportion of side latching car couplings being so provided.

The draw-head body A, is elongated, and cylindrical in its rear portion which projects below a car frame B, as shown in Fig. 1, and is spring cushioned at the rear end by a spring a, and also by another spring b, the latter encircling a guide rod c, that projects from the draw-head front portion rearwardly, parallel with and above the cylindrical body, to engage the car frame timbers at each end in the manner usual for such a spring cushioning device.

The forward portion of the draw-head A, is widened and furcated to produce two horns A′, A^2, and suitably recessed throughout the body to lighten it and adapt it to receive a latch block C, at the front and which is pivoted by the vertical bolt d, to the jaw A′.

The draw-head A is loosely sustained in position below the car frame B, so as to have its front portion projected in advance of the cross timber B′, by a depending looped strap e, that embraces and loosely retains the draw-head body against the under side of the cross timber upon which the ends of the straps e, are affixed, the body A being squared where the strap embraces it.

The spring A is supported on the bolt a', which is axially projected from the rear end of the draw-head; said spring is divided into two sections, these similar springs engaging their nearest ends with a transverse buffer plate a^2, through which the bolt a' projects, said plate having its end portions that extend each side of the bolt, in loose contact with a pair of guide bars a^3, that hang from the stringers of the car frame parallel with the draw-head body, which bars serve to carry the rear portion of the draw-head and attachments thereto; the described construction of parts being in common use is not presented as new in this connection.

The latch block C, is mainly of the ordinary form, comprising a body of bell-crank shape, having a long limb, and a shorter limb projected substantially at a right angle from the long limb, and slotted horizontally near its center between top and bottom sides, pro-

ducing two parallel ears f, f', of about an equal thickness.

The latch block C, is pivoted to the horn A′, forwardly on the latter, and at the point where the furcated limb of the block joins the longer limb, by the bolt d before mentioned, that passes through the horn and latch block, so that when the long limb of the latter is rearwardly projected, and engaged by the vertically adjustable key D, the furcated limb of the block will be extended partly across the space between the horns A′, A², for a locked connection with a similar latch block on another car coupling.

Ordinarily, the ears f, f', are vertically perforated to receive a coupling pin, when the latch block of a side latching car coupling is to be connected to a common link and pin coupling, the elongated link in such a case being introduced between the ears and the ordinary coupling pin inserted through the ears and link. The perforation of the ears on the latch block weakens them, and in service percussion is likely to break the latching jaw of the coupling.

One feature of this improvement is to provide means for reliably connecting an ordinary coupling link with the ears of the latch block and avoid their perforation. The construction of parts to effect the object mentioned, consists of a locking knob g, that is formed on the upper surface of the lower ear, f', and which is of a sufficient height to project above the height of a coupling link such as E, when the latter is engaged with said knob. The projection g, is mainly of an oval contour, and is located so that one of its sides will conform with the end wall of the ear it is formed upon and that is opposite the inner wall h which defines the limit of furcation for the ears f, f', as is plainly shown in Fig. 3. The vertical wall of the portion g' of the knob g, that is rearward when the latch block C, is in the locked condition shown in Fig. 2, is rounded on its face, and affords a shoulder of sufficient height to retain the end of the link when it is made to engage therewith as represented in Fig. 2, there being sufficient space provided between the knob g and wall h, to freely admit one side member of the coupling link E, when it is to be coupled with the latch block C. The ovate side g^2 of the knob g, that is nearest to the wall h, is cut away to slope it from the top surface toward said wall and also on the front edge of the knob, as shown in Figs. 2 and 4, which will adapt the knob to lift and release the link E, when the latch block C, is released and permitted to swing into the position indicated in Fig. 4, as the sloped wall will then be toward the end of the link and draft strain applied to the latter will cause it to slide upwardly and outwardly off of the knob.

To lock the link E, upon the knob g, a depending projection or boss i, is formed on the lower side of the upper ear f, filling the outer corner which said ear forms with the wall h, or said boss may extend around to fill both corners, as shown in Fig. 5. As shown by dotted lines in Fig. 4, and full lines in Fig. 5, the boss i, is curved inwardly on its side that is adjacent to the curved end of the link E when the latter is in place on the latch block and the block is swung into the position indicated in Fig. 4, which adjustment of parts will allow the link to be readily placed on or removed from the latch knob. The boss i, is projected downwardly and has its lower surface in about the same plane with the upper face of the knob g, as shown in Fig. 3, so that when the latch block is adjusted to permit its long limb to be locked by the key D, the link E, will have one of its parallel members partly covered by the outer corner i' of the boss, which will be close enough to the upper side of the link to prevent a release of the latter, which can only be effected when the key D is removed from a locking contact with the latch block, and said block is swung into the position shown in Fig. 4, as above explained.

It sometimes occurs, that the bolt a' that sustains the rear end of the draw-head becomes broken by accident, and thus permits the coupled draw-head to be pulled out and fall upon the railroad track, which if struck by the wheels of the car may derail it.

To avoid the possible loss of life and property that might result from the sudden rupture of connections between the draw-head and car frame, a simple device is provided and is a feature of this improvement, consisting of a double plate clamp F, that is constructed as shown in Fig. 1 the two similar bent plates comprising the clamp being fitted to the cylindrical body of the draw-head rearwardly of the looped strap e and secured upon the drawhead by the transverse bolts m, that pass through holes in the straight parts of the clamp, which project a proper length from the curved portions of the same. When the clamp F, is in position on the draw-head, if the latter becomes detached at its rear end from its connection with the car frame, the forward draft of the draw-head will be arrested by an impinge of the clamp on the rear edge of the strap e, so that the complete removal of the draw-head from the car frame will be prevented.

The usual means provided for the elevation of the locking key D a sufficient degree to release the latch block C, consists of a horizontally supported rock shaft o, that is adapted to rock on the end of the car or its frame, having an arm o', at its inner end above the key to which it is flexibly connected by a chain or like means, the outer end of the rock shaft having a handle o^2, formed on or secured to it for manipulation and elevation of the key.

To adapt the ordinary hand-operated device just described, for the automatic release of a draw-head that is damaged in its attachment to the car frame, and thus sever its connection with the car coupling it has been

coupled with, there is a simple attachment provided which forms another feature of the invention, comprising a laterally projected plate *p* that is secured to the draw-head by the bolt *d*, and from which extends a chain *r*, that has its other end attached to the lower end of an arm *s*, that is secured at a proper point on the rock shaft *o*.

It will be seen that if the draw-head A becomes detached from the car frame B at its rear end, and slides so that the clamp F is brought into contact with the looped strap *e*, or the transverse end-sill B′ of the car frame the forward movement of the draw-head will rock the arm S outwardly, and the other arm *o′* upwardly, which will sufficiently elevate the key D, to release the latch block C and detach the draw-head A from a mating draw-head, or from an ordinary coupling link such as E, if the link has been interlocked with the latch block; the chain *r* may also be directly attached to the side of the draw-head.

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

1. In a car coupling, the combination with a drawhead, on a car frame, and a supporting strap for the drawhead depending from the frame, of a clamp embracing the drawhead rearward of the supporting strap and which will impinge the strap or car frame when the drawhead is abnormally drawn forward, substantially as described.

2. In a car coupling, the combination with a drawhead, of a horizontally-slotted latch block pivoted therein, the lower ear of said block having a knob projected upward therefrom, and the upper ear having a depending boss being adapted to lock a coupling link to the drawhead, substantially as described.

3. In a car coupling of the character described, the horizontally slotted latch block pivoted in the drawhead, the lower ear of said block having an upwardly projecting knob thereon, one side of which is inclined, and the upper ear having a depending boss formed with a concaved outer face opposing the sloped side of the knob, substantially as described.

4. In a car coupling, the combination with a drawhead supported to slide on a car frame, a latch block pivoted to laterally vibrate on the drawhead, and a vertically slidable key for said block, of a rock shaft journaled on the car above the drawhead, a horizontal arm on the shaft loosely connected to the key, a device for rocking the shaft by manipulation, and a depending arm on said shaft loosely connected to the forward end of the drawhead and which will rock the shaft and lift the key when the drawhead is abnormally drawn forward, substantially as described.

5. In a car coupling, the combination with a drawhead, a latch block pivoted thereon, a locking key for said block, a rock shaft journaled on the frame of the car, an arm thereon flexibly connected to the key, and a crank handle on one end of said shaft, of a second arm depending from the shaft, a plate projected from the side of the front portion of the drawhead, and a flexible connection between the plate and the depending arm on the rock shaft, substantially as described.

6. In a car coupling, the combination with a drawhead, and a laterally swinging latch block pivoted thereto, of a knob upwardly projected from the jaw on the free end of the block, and a projection on the block arranged to lock a coupling link on the knob when the latch block is secured from swinging, substantially as described.

CHARLES H. SMITH.

Witnesses:
B. E. McGURK,
T. J. WATERS.